



Identification Guide for Sage Steppe Flora of Craters of the Moon National Monument and Preserve

Produced for: National Park Service, Inventory and Monitoring Program

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Foreward

This manual is intended to aid in field identification of plants found in the sagebrush steppe regions of Craters of the Moon National Monument and Preserve (CRMO). Over 660 plant taxa have been identified at CRMO, but this manual focuses on the species characteristic of sagebrush steppe vegetation, especially that of the over 500 kipukas that dot the lava-flow landscape of CRMO. The kipukas are patches of sagebrush steppe that are isolated within the lava flows that cover significant portions of CRMO. ‘Kipuka’ is the Hawaiian for ‘window’, and the kipukas are islands of native sagebrush steppe vegetation that provide views of the varied and rich flora of sagebrush steppe, with little influence of current-day land uses.

The plants in this manual that are accompanied by photographs and detailed description have been documented at CRMO by the Idaho State University kipuka survey team. Other plants described are listed in the Craters of the Moon Vascular Plant Checklist (Popovich and Atwood 2006), and nomenclature follows this checklist and NPSpecies.

This manual presents species organized by Family, and a general description is given for each Family and species. For each listed species, we describe general Plant Characteristics, Flowers (including inflorescences and floral parts), Leaves, Fruit, and a description of the general habitat and distribution of the species (Where Found, which is not restricted habitat within CRMO). We also include Notes that provide information on similar species and how they can be distinguished or other natural history of interest. Indices of included species, by Common Name (e.g. Big Sagebrush) and by Scientific Name (e.g., *Artemisia tridentata*) are at the end of the manual, as is a Glossary of botanical terms used in the descriptions of species.

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Amaranthaceae

General Family Characteristics: Leaves, alternate, spiral, or opposite, simple, stipules lacking; inflorescences determinate; flowers small, tepals usually 3-5, stamens 3-5, opposite tepals, carpels usually 2 or 3, ovary usually superior with basal placentation, stigmas 1-3, ovules 1 to few, fruit usually an achene. One genus found in the park.

Amaranthus

Three species occur in the park:

Amaranthus albus (White pigweed) is up to 10 dm tall, with leaf blades 10-30 mm long and oval shaped and flowers in small clusters that are unisexual, each with 3 tepals and 1-3 stamens.

Amaranthus californicus (California pigweed) is an annual that grows throughout the summer. It has leaf blades that are 5-15 mm long and are more elliptical, and the flowers are in small clusters that are unisexual; the tepals of the female flowers are unequal, with one well developed and the other two much reduced.

Amaranthus retroflexus (Redroot pigweed) is 5-20 dm tall and very hairy; the leaves are mostly hairy along the veins of the underside, and the blades are longer than 3 cm; the flowers are unisexual and terminal on the ends of the stems, with rounded tepals that have a notch at the end.

Apiaceae

General Family Characteristics: Annual or perennial herbs; leaves alternate rarely, opposite, or sometimes all basal; stems often hollow; flowers in compound umbels and mostly regular and bisexual; sepals usually 5; petals usually 5 and generally yellow or white; stamens usually 5 and alternate with petals; carpels usually 2-5; stigmas usually 2-5; ovules 1 in each locule and inferior; fruit a drupe.

Cymopterus

Springparsley

Five species occur widely throughout the park:

Cymopterus longipes (Longstalk springparsley) is 7-30 cm tall, with leaves in 4-6 opposite pairs, divided 1-3 times; flowers have 4-11 yellow to white petals, each 0.5-3.3 cm long.

Cymopterus petraeus (Rock springparsley) is 15-45 cm tall with leaves that are divided 2-3 times; flowers are yellow.

Cymopterus terebinthinus (Turpentine wavewing) is 15-35 cm tall and has a strong scent; leaves are basal and divided 2-4 times.

Cymopterus acaulis (Plains springparsley) is 5-18 cm tall with 1-3 opposite pairs on the stem or whorled basal leaves and divided 2-3 times; flowers have 6-9 white, yellow, or purple petals, each 0.7-5 cm long.

Cymopterus glaucus (Waxy springparsley) is similar to *C. acaulis*, but the flowers are yellow and are not as densely clustered into heads.

Lomatium dissectum

Giant Lomatium



Gary Monroe

Plant Characteristics: Perennial, early spring bloomer; plants large, generally 5-15 dm at maturity; foliage generally rough to the touch; stems hollow; large woody taproot; plants have a spicy fragrance

Flowers: Yellow or less often purple; umbel ca. 8-10 cm across with 10-30 main branches

Leaves: Mainly basal, pinnately dissected into smaller segments, ultimate segments relatively large, at least 1 cm, with a lacy appearance

Fruit: 8-18 mm; wings greater than 1/3 the body width

Where Found: Open, often dry, meadows or rocky slopes

Notes: The large size and many umbels make this plant conspicuous, and it often grows in large groups.

Lomatium foeniculaceum

Desert Parsley



Dan Post

Plant Characteristics: Early blooming plants; native perennial from a taproot; less than 5-10 dm at maturity

Flowers: Yellow, in compound umbels with rays (5-20) 0.2-7 cm long

Leaves: Ultimate segments relatively small, less than 1 cm, evidently covered with short hairs

Fruit: Small, mostly 5-10 mm, covered with short hairs when young, with thin wings

Where Found: Dry, open slopes in valleys and plains

Notes: Desert parsley is common on the kipukas. The plant is grayish in color and small, with fleshy leaves that spread along the ground, making it easy to identify, with or without flowers.

Lomatium grayii

Gray's Biscuitroot



Huntly Lab

Plant Characteristics: Early spring bloomer with a very long thickened taproot

Flowers: Yellow compound umbels, rays (10-26) 1.5-6 cm long

Leaves: Very finely dissected, almost carrot-like, generally with several hundred or more than 1000 very narrow segments that lie in numerous planes so that the leaf is 3-dimensional; often rough to the touch; a fresh bright green

Fruit: Glabrous, wings thin

Where Found: Dry, open rocky places from foothills and lowland

Notes: Very rare in the park

Lomatium triternatum

Nineleaf Biscuitroot



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Plant Characteristics: Native tap-rooted perennial; grows in the spring to summer and flowers from May to June; erect plant 10-80 cm tall and covered with fine short hairs; has a parsley smell

Flowers: Yellow and very tiny, clumped in umbels, rays (4-20) 2-10 cm long

Leaves: Basal dividing 2-3 times into linear segments 1-10 cm long

Fruit: Linear to narrowly oblong, 7-15 mm long

Where Found: Widespread

Notes: *Lomatium ambiguum* is similar in size to *L. triternatum*, but the different leaves distinguish the two. The leaves of *L. ambiguum* are several times divided, with the longer segments 1-8 cm by 1-5 mm, and *L. ambiguum* is glabrous, whereas *L. triternatum* is covered with fine short hairs.

Apocynaceae

General Family Characteristics: Leaves usually opposite; flowers usually radial; sepals usually 5; petals usually 5; stamens usually 5; carpels usually 2; ovaries superior with usually lateral or axile placentation; fruits often paired, each ovary usually developing into a fleshy or dry follicle, berry, or drupe. One genus is found in the park.

Apocynum

Three species are found in the park, but none are common:

Apocynum androsaemifolium (Spreading dogbane) is 10-50 cm tall with mostly spreading or drooping oval to elliptic leaves 2.5-7 cm long, often pointed at the tip; and the flowers are generally at least 5 mm long with pinkish corollas.

Apocynum cannabinum (Hemp dogbane) is 3-10 dm tall, with yellow-green oblong leaves, 5-11 cm long; the flowers are 2-4.5 mm long, and the corollas are greenish-white to white.

Apocynum medium (Intermediate dogbane) is 2-5 dm tall, with leaves 6-10 cm long and 1.5-2 cm wide, oval to oblong and covered with hairs on the underside; the flowers are generally at least 5 mm long, with pinkish corollas.

Asclepiadaceae

General Family Characteristics: Leaves opposit, whorled, or alternate, with milky juice; flowers complete and regular, 5-merous except for the pistil; superior ovary; fruit a follicle. One genus is found in the park.

Asclepias

Milkweed

Three species are found in the park:

Asclepias fascicularis (Narrowleaf milkweed) is 3-8 dm tall and may be sparsely covered with fine short hairs; the leaves are linear and 5-15 cm long x 3-12 mm wide; the flowers have sepals that are greenish to pinkish or sometimes purple and around 2 mm long; the corolla lobes are 2-4.5 mm long and pale to dark pink-purple.

Asclepias speciosa (Showy milkweed) is 40-120 cm tall with milky juice and covered with woolly gray hairs; the leaves are generally lanceolate and 10-20 cm long x 5-10 cm wide; the flowers have pink hoods that are not lobed and are 9-12 mm long; the petals are pink to reddish purple and ca. 10 mm long; the flowers are in clusters of 5-30.

Asclepias subverticillata (Whorled milkweed) is 1.5-7 dm tall; the leaves are linear and 2-13 cm long x 1-3 mm wide and may bear small long soft hairs; the flowers are white, sometimes with a greenish purple tinge; the corolla lobes are 3-5 mm long.

Asteraceae

General Family Characteristics: Leaves alternate and spiral, opposite, or whorled; flowers bisexual or unisexual, sometimes sterile, radial or bilateral; sepals highly modified forming a pappus; flowers vary; fruit an achene, crowned by a persistent pappus.

Achillea millefolium

Western Yarrow



Jeff Abbas

Plant Characteristics: Aromatic perennial, stems erect and 10-80 cm tall, roots are spreading rhizomes, blooms from May to September

Flowers: Unisexual rays (5) white or sometimes pinkish, 4-6 mm across, 2-4 mm in length; 10-30 bisexual yellow disk flowers; many flower in a flat-topped cluster that can be 2-10 cm across.

Leaves: Alternate, fern like, pinnately dissected, segments 1-2 mm wide and 3-10 cm long, entire leaf generally 4 cm wide.

Fruit: Hairless flattened achenes lacking a pappus

Where Found: Very dry to moist open sites

Notes: The leaves of this plant have a medicinal odor.

Acroptilon repens
Idaho Noxious Weed

Russian Knapweed



Fred Hrusa

Plant Characteristics: Perennial, rhizomatous, 3-8 dm tall, with much branching,

Flowers: Heads few to numerous, terminate branches, pink to purplish; whorl of greenish bracts 9-15 mm long X 5-12 mm wide, urn-shaped

Leaves: Basal rosette and alternate along the stems, mainly 1-6 cm long x 2-12 cm wide, oblanceolate to elliptic, entire to serrate, withered by flowering time

Fruit: Achene with sub-plumose pappus bristles, 6-11 mm long

Where Found: Widespread throughout North America

Notes: If this plant is identified in the park, document its location and notify a park employee as soon as possible

Agoseris glauca

Pale Agoseris



Huntly Lab

Plant Characteristics: Tap-rooted perennial with a milky sap; 5-60 cm tall; blooming from May to September

Flowers: Yellow solitary heads, 1.5-3 cm, made up of bisexual rays; center rays shorter than outer rays; 1 head per plant

Leaves: Basal, 5-35 cm long x 1-30 mm wide, can be narrow to broadly lanceolate, entire to deeply pinnately divided.

Fruit: Achenes generally with short, stout, ribbed beaks up to half as long as the body

Where Found: Open areas in coniferous forests and in sagebrush

Notes: *Agoseris glauca* is similar at first glance to *Microseris nutans* (Nodding microseris) and *Microseris troximoides* (Weevil prairie dandelion). The main difference is the achenes. In *M. nutans* and *M. troximoides*, the achene is slender and beakless and has a distinct pappus, which is scale-like at the base and feathery at the tip.

Other *Agoseris* species found in the park:

Agoseris aurantiaca (Orange agoseris) has blunt orange flowers and leaves up to 35 cm long x 3 cm wide. The beak of the achene is more than half as long as the achene.

Agoseris grandiflora (Bigflower agoseris) is a perennial, with leaves generally 10-25 long and 1-3 cm wide, and the beak 2-4 times as long as the achene.

Agoseris heterophylla (Annual agoseris) is the only annual in the genus. This species has leaves up to 15 cm long and 1.5 cm. Wide, and the beak is generally 2-3 times as long as the achene.

Antennaria dimorpha

Low Pussytoes



Steve Matson

Plant Characteristics: Native perennial; low, densely matted, gray plants, generally less than 1dm, without stolons; flowers in the spring

Flowers: Solitary heads terminating branches; white unisexual disk flowers only 5 mm wide

Leaves: Alternate and basal, 3 cm long and 5 mm wide, with silky hairs

Fruit: Achenes circular in cross-section or slightly compressed

Where Found: Dry, open places in foothills and lowlands

Notes: This *Antennaria* species grows appressed to the ground in large mats. Flowers are hard to see without getting close to the plant.

Antennaria microphylla

Smallleaf Pussytoes



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Plant Characteristics: Native perennial; well over 1 dm tall, mat forming with numerous prostrate stolons, and several flowering heads per stem

Flowers: 2-13 heads in flat to rounded clusters; white to pinkish bracts; corolla 2.5-4.5 mm long

Leaves: Alternate and basal; upper surface of basal densely hairy; leaves are somewhat broader and clustered on the stems

Fruit: Achenes circular in cross-section or slightly compressed

Where Found: Lowlands to mountains

Notes: *Antennaria rosea* (Rose pussytoes) is sometimes grouped with *Antennaria microphylla*, but other authorities consider *A. rosea* to apply to sexual diploid plants only.

Other *Antennaria* species found in the park:

Antennaria arcuata (Arching pussytoes) has solitary stems and is 1-4 dm tall, with leaves that are densely hairy on the top and the bottom.

Antennaria stenophylla (Narrowleaf pussytoes) has linear leaves (1-2 mm wide) and compact inflorescent ranging from 8-15 mm wide. *Antennaria stenophylla* are not mat forming.

Arnica longifolia

Longleaf Arnica



Gary Monroe

Plant Characteristics: Perennial; stems 3-6 dm and densely tufted

Flowers: Yellow rays generally 8-15 wide and 1-2 cm long; generally several heads, with involucral bracts sharply acute

Leaves: Generally 5-12 pairs per stem; entire or nearly so; gradually acute or acuminate and ranging from 5-12 cm long and 1-2 cm wide

Fruit: Achene

Where Found: Well drained areas along cliffs and riverbanks

Notes: *Arnica sororia* (Twin arnica) also is found in the park. *A. sororia* has only 2-4 pairs of stem leaves instead of the 5-12 pairs of *A. longifolia* and these leaves are generally 3-10 times as long as wide, with 3-5 main veins from the base. The basal leaves are densely tufted. Plants bear 1-3 heads that radiate.

Artemisia tridentata

Basin Big Sagebrush



Huntly Lab

Plant Characteristics: Aromatic shrub; generally 0.5-2 m tall, erect, with much branching; older branches shedding bark; flowering from July-October

Flowers: Yellow or brownish heads made up of 5-8 disc florets, 2-3 mm across, numerous florets arranged in narrow long clusters, 1.5-7 cm wide

Leaves: Generally merely 3-toothed at the tip, densely grayish and alternate, 1-2 cm long

Fruit: Sparsely hairy achenes, no pappus

Where Found: Dry plains and hills

Notes: Three varieties of *Artemisia tridentata* are found in CRMO and are very similar: *var. vaseyana* (Mountain big sagebrush), *var. wyomingensis* (Wyoming big sagebrush) and *var. tridentata* (Basin big sagebrush). Characteristics that distinguish them are given in Hironaka et al. (1983) and Rosentreter (2005). They can be distinguished reasonably well in the field by differences in shape of the leaves and the shrub. *A. tridentata var. tridentata* have longer, more linear leaves, whereas *A. tridentata var. wyomingensis* has a broader leaf tip, creating a more distinct “W” at the end. *A. tridentata var. tridentata* has a much larger maximum size and a more uneven top, whereas *var. wyomingensis* generally has a flatter top. *Artemisia arbuscula* (Low sagebrush) is a much smaller shrub (1-4 dm) and its leaves are generally more deeply cleft.

Artemisia tripartita

Threetip Sagebrush

Unable to locate photo

Plant Characteristics: Fragrant shrub, 20-60 cm tall; branches ranging from 0.3-1.5 dm long; flowering late summer to fall

Flowers: Inflorescence of 4-8 bisexual florets in a panicle 2-5 cm wide; corollas cream colored

Leaves: 1-4 cm long and deeply 3 cleft, with linear lobes 0.5-0.8 mm wide

Fruit: Achenes glabrous

Where Found: Dry habitats in plains

Notes: This shrub looks similar to *Artemisia tridentata*, but is generally much smaller in size and leaves are deeply cleft creating more linear segments.

Other *Artemisia* species found within the Park

Artemisia dracunculus (Green sagewort) is a perennial herb with glabrous stems, 5-12 dm tall; leaves mainly on the stems, entire to slightly cleft, and 1.2-7.5 cm long x 1-6 mm wide; numerous flower heads in panicles.

Artemisia longiloba (Early sagebrush) is a shrub ca. 2-5 dm tall, with flowering stems ranging from 1-2 dm tall; leaves deeply cleft 3 times, 0.4-2 cm long, and very hairy; several flower heads with cream-colored glabrous corollas

Artemisia ludoviciana (Louisiana sagewort) is a perennial herb with rhizomes; stems 2-10 dm tall and may be covered with numerous white hairs; leaves mainly on the stems and ranging from entire to lobed, covered with white hairs below and glabrous on top, 0.8-9 cm long and 0.1-1 cm wide; numerous flower heads with glabrous yellow corollas

Artemisia nova (Black sagebrush) is a shrub that is mainly 1-3 dm tall with spreading Branches; vegetative stems 1-3 dm long and flowering stems 1.5-3 dm long; leaves shallowly or deeply lobed 3-5 times, mainly gray to gray green; flowers in groups of 3-8 and all perfect and glabrous.

Aster scopulorum

Lava Aster



Huntly Lab

Plant Characteristics: Rhizomatous perennial with a woody base and hairy stems, 4-12 cm tall

Flowers: Solitary heads with 8-15 blue to purplish ray flowers, 6-15 mm long, and yellow disk flowers

Leaves: Very firm, elliptic to linear and overlapping, 5-12 mm long and 1-3 mm wide, with a rough feel because of small stiff hairs

Fruit: Hairy achenes

Where Found: Sagebrush areas

Notes: The rough leaves make this aster distinct.

Other *Aster* species found in the park:

Aster campestris (Meadow aster) is a glabrous perennial from a rhizome, mainly 1-5 dm tall with linear to oblong entire leaves, 2-8 cm long and 2-8 mm wide, the lower ones larger than the upper ones; several solitary flower heads with 15-20 violet to purple rays, 6-12 mm long

Aster chilensis (Western aster) is a harshly hairy perennial from a rhizome, 1.2-10.5 dm tall, leaves entire (0.6-16.5 cm long and 2-16 mm wide), flowers arranged in 1 to many heads, 15-40 rays, commonly purplish to violet or sometimes pink. 5-15 mm long

Aster perelegans (Elegant aster) is a perennial with a woody base covered with short fine hairs, 3-7 dm tall; leaves firm and entire, oblong; 3-16 flowers arranged in flat to round heads, with 5-16 dark purple rays, 7-13 mm long

Balsamorhiza sagittata

Arrowleaf Balsamroot



Huntly Lab

Plant Characteristics: Tap-rooted perennial, 20-80 cm tall; flowers in the spring

Flowers: 1-30 yellow composite sunflower-like heads on long stalks, 10-12.5 cm wide, with 8-25 yellow rays, 2.5-4 cm long, and many deep yellow disk flowers

Leaves: Basal with blades up to 30 cm long, covered with dense soft gray hairs; shaped like an arrowhead

Fruit: Hairless achenes that are 3-4 sided about 7-8 mm long, lacking pappus

Where Found: Open hillsides and flats in grasslands

Notes: *Balsamorhiza hookeri* (Hooker's balsamroot) is also found in the park. It is a smaller plant (5-40 cm tall) with smaller rays (1.5-4 cm long). The leaves distinguish the two.

Balsamorhiza hookeri has deeply lobed leaves that are 10-40 cm long and more fern-like in appearance. *Wyethia amplexicaulis*, better known as Mule's ear, is a perennial that is 2.5-9 dm tall and glabrous, with basal leaves 12-40 cm long and 2-15 cm wide and entire to toothed and stem leaves that are much smaller and rounded. It has 1 to several large flower heads, each with 6-16 yellow ray flowers, 2.5-4.5 cm long. *W. amplexicaulis* can easily be mistaken for *B. sagittata*, but can be distinguished by the shape of the leaves. Additionally, *W. amplexicaulis* is usually found at higher elevations.

Chaenactis douglasii

Dusty Maiden



Matt Below

Plant Characteristics: Biennial or perennial; single stems initially a rosette of leaves, 10-60 cm tall, from taproots; flowers from June to August

Flowers: White, ca. 1-2 cm across, with 50-70 bisexual tubular disc florets

Leaves: Alternate, often tufted at base, and pinnately cut into narrow segments, making them fern-like, 2-12 cm long and becoming smaller as they ascend the stems

Fruit: Hairy achenes with a pappus that has 10-16 unequal linear translucent scales

Where Found: Dry to moderately moist areas

Notes: The fleshy and fern-like basal leaves of this plant make it easy to identify, even before it flowers.

Chrysothamnus nauseosus

Rubber Rabbitbrush



Charles Webber © California Academy of Sciences

Plant Characteristics: Erect, deciduous gray-colored shrub, usually 20-60 cm tall; densely branched and often with a flat top; covered with felt like hairs; blooms at stem tips in late summer

Flowers: Small yellow heads of 5 disc florets ca. 5 mm across in dense clusters at branch tips.

Leaves: Alternate, linear, 3-6 cm long x ca. 1 mm wide, gray, velvety, and minimally twisting

Fruit: Linear, hairy achenes with pappus consisting of white hairs

Where Found: Dry open sites

Notes: The two *Chrysothamnus* species can be distinguished by the stems and leaves. *C. nauseosus* has gray stems and straight leaves, whereas *C. viscidiflorus* is green with twisted leaves. These shrubs are sometimes the second most dominant shrub on kipukas.

Chrysothamnus viscidiflorus

Green Rabbitbrush



Christopher Christie

Plant Characteristics: Perennial shrub, 2-12 dm; glabrous; bark green to tan or white to gray; flowering mid or late summer to fall

Flowers: Bisexual; corollas yellow, 3.8-6 mm long; heads made up of 5 disc flowers

Leaves: Alternate, entire, linear to oblong, 0.3-4.5 cm long and 1-4 mm wide, green and twisted

Fruit: Achenes, 3-4 mm long

Where Found: Sagebrush steppe

Notes: The two *Chrysothamnus* species can be distinguished by the stems and leaves. *C. nauseosus* has gray stems and straight leaves, whereas *C. viscidiflorus* is green with twisted leaves. These shrubs are sometimes the second most dominant shrub on kipukas.

Cirsium canovirens

Graygreen Thistle



Steve Matson

Plant Characteristics: Biennial or short lived perennial; covered with cobweb-like hairs

Flowers: Bisexual; generally white

Leaves: Toothed to more often pinnatifid

Where Found: Foothills and dry meadows

Notes: Present as a basal rosette in April and May throughout the Wapi flow.

Other *Cirsium* species found in the park:

Cirsium arvense (Canada thistle) (**NOXIOUS**) is a perennial with stems ca. 5-10 dm tall; leaves 3-15 cm long and 1-6 cm wide and deeply segmented, lobed, or toothed; flower heads numerous and 10-20 mm tall and 10-25 mm wide; corollas pink, purple, or white.

Cirsium eatonii (Eaton's thistle) is a perennial, 1.5-5 dm tall, from a simple or branched woody base and tap-root; leaves in a basal rosette, 4-20 cm long and divided into segments, with spines 1.5-4 mm long; stem leaves 3-25 cm long and 0.6-5.5 cm wide; flower heads 20-37 mm tall and 25-50 mm wide, with corollas pink to white.

Cirsium flodmanii (Flodman's thistle) is 3-8 dm tall and relatively slender; basal leaves in a rosette and slightly lobed; stem leaves deeply pinnatifid; flowers a bright deep purple.

Cirsium subniveum (Gray thistle) is a perennial from tap-roots, mainly 6-10 dm tall and very hairy; stem leaves 3-25 cm long or more and 1-6 cm wide, segmented and hairy on both sides; flower heads 17-25 mm tall and 20-30 mm wide, with corollas white to cream.

Cirsium undulatum (Wavyleaf thistle) is a perennial from a woody base and taproot, 2-10 dm tall; leaves mainly basal, 7-25 cm long and 1.5-6 cm wide, toothed to segmented and hairy on both sides (white on bottom and white to green on top), with main spines 1-6 mm long; stem leaves smaller upwards on the plant; flower heads 20-30 mm tall and 20-60 mm wide, with corollas pink, purple, or creamy white.

Cirsium utahense (New Mexico thistle) is a plant with leaves that are hairy on the underside; white or pale pinkish flower heads, roughly 2-4 cm wide.

Cirsium vulgare (Bull thistle) is a biennial from taproots, 3-12 dm tall; leaves are mainly basal, 5-25 cm long and 2-8 cm wide, very hairy on both sides, segmented twice at each segment; flower heads 28-40 mm tall and 35-70 mm wide, with corollas rose purple.

Crepis acuminata

Tapertip Hawksbeard



Huntly Lab

Plant Characteristics: Tap-rooted perennial with 1-3 stems, 20-70 cm

Flowers: Bisexual; heads all rays, heads ca. 1.5-2.5 cm wide, 5-10 per head

Leaves: Pinnately lobed and narrow with a broad central rachis, with sometimes toothed or cleft segments, ca. 10-40 cm long

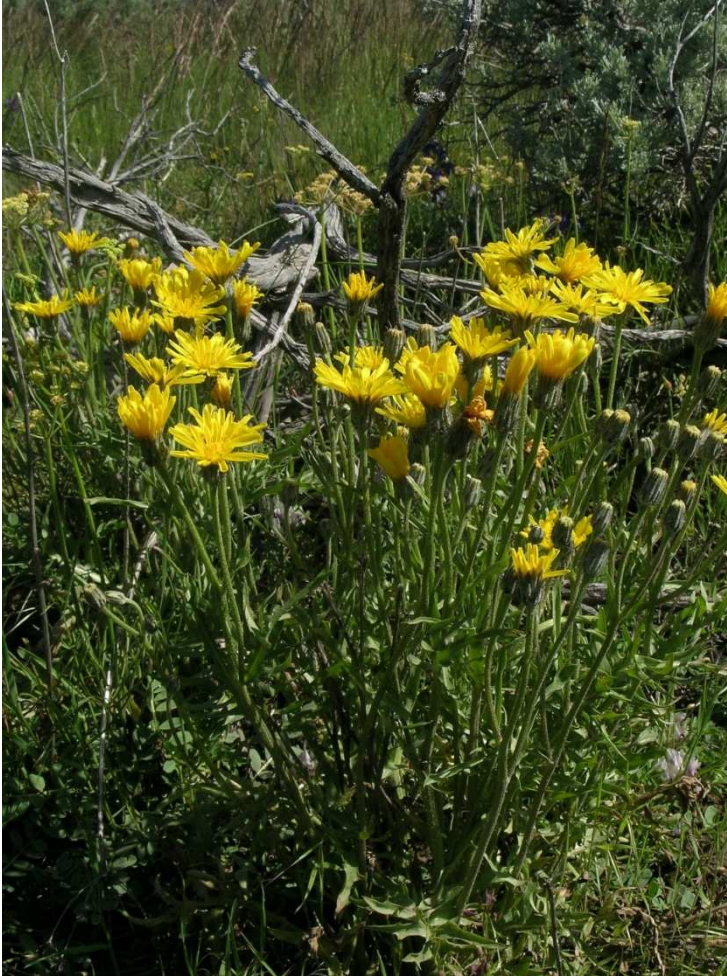
Fruit: Achene cylindrical with pappus made up of numerous white or whitish bristles

Where Found: Open dry places in sagebrush and coniferous forests

Notes: The *Crepis* species are hard to distinguish, and segmentation of the leaves is the main distinction. Also, when in fruit, the achenes are very distinct.

Crepis modocensis

Modoc Hawksbeard



Huntly Lab

Plant Characteristics: Perennial, 1-3 dm

Flowers: Bisexual; yellow; 1-9 heads bearing 10-60 flowers each

Leaves: Deeply cleft

Fruit: Achenes greenish-black to deep reddish brown

Where Found: Dry, open sites at low to moderate elevations

Notes: *Crepis atriobarba* (Slender hawksbeard) is similar to *Crepis modocensis* but the leaves are deeply pinnatifid with narrow entire segments.

Crepis occidentalis



Larry Blakely

Western Hawksbeard



Plant Characteristics: Perennial, 1-4 dm tall with 1 to several stems from a woody base

Flowers: Generally 10-40 in each head, corollas 10-22 mm long and yellow

Leaves: Basal leaves 6-30 cm long and 1-5 cm wide, generally lanceolate or deltoid and may be generally toothed

Fruit: Achenes yellowish to brown

Where Found: Widespread

Notes: The *Crepis* species are hard to distinguish. Take time to look at the leaves, which are the best distinguishing factor. When in fruit, the achenes are very distinct between the species.

Erigeron corymbosus

Longleaf Fleabane



Christopher Christie

Plant Characteristics: Perennial, 1-5 dm tall, from simple or branched woody base

Flowers: Between 1-10 heads, each with ca. 35-65 rays that are blue or pink, 7-13 mm long and 1.2-2 mm wide; disc corollas 4-5.3 mm long; bracts green to tan with a darker midrib

Leaves: Basal leaves linear to oblanceolate and tapering to the stem, 1.5-15 cm long and 3-14 mm wide; leaves reduced as they ascend the stem

Fruit: Achene with double pappus, inner bristles firm and outer bristles with narrow scales

Where Found: Sagebrush steppe or grassland community

Notes:

Erigeron divergens

Spreading Fleabane



Gerald and Buff Corsi © California Academy of Sciences

Plant Characteristics: Annual, biennial, or perennial, 10-70 cm, several branches covered with short grayish hairs from taproots, flowering from April-September

Flowers: Ca. 75-150 white, pink, or lavender linear rays, each 5-10 mm long and 0.5-1.2 mm wide, surrounding a yellow central disk; entire head about 2.5 cm wide, with narrow bracts that line up side by side

Leaves: Tufted at base of the plant; lanceolate and tapering to the base, 1.5-2.5 cm long and 2-10 mm wide; upper stem leaves are numerous and slightly smaller than basal leaves

Fruit: Achenes with double pappus

Where Found: Open, sandy areas in deserts and foothills

Notes:

Erigeron pumilus

Navajo Fleabane



Gerald and Buff Corsi © California Academy of Sciences

Plant Characteristics: Upright perennial, 5-40 cm tall with spreading hairs

Flowers: With 50-100 rays, pink, white, or sometimes blue, 6-15 mm long and 0.7-1.5 mm wide

Leaves: Linear-oblongate, 3-8 cm long and 3-8 mm wide, abundant on stems

Fruit: Achene with double pappus, inner bristles coarse and outer bristles with scales

Where Found: Open places often among sagebrush

Notes:

Other *Erigeron* species found in the park:

Erigeron aphanactis (Rayless shaggy fleabane) is a perennial branching from a woody base, hairy stems erect and 5-30 cm tall, basal leaves are spatula shaped 0.5-8 cm long and 1-6 mm wide, stem leaves are well developed, flower heads are solitary to many 7-15 mm wide and 3.5-6 mm tall, corolla may be reddish, purplish, or yellowish.

Erigeron bloomeri (Scabland fleabane) is ray-less with the disk corollas generally 3.0-3.6 mm wide, leaves are linear mainly basal 2-7 cm long and 0.7-2 mm wide.

Erigeron canus (Hoary fleabane) is a perennial branching from a woody base, hairy stems erect 5-30 cm tall, basal leaves mostly 1-6 cm long and 1-5 mm wide, leaves reduced further up the stem, 30-40 blue or white ray flowers 7-12 mm long and 0.8-1.4 mm wide.

Erigeron chrysopsidis (Sagebrush fleabane) has leaves that are mainly basal, straight or may be slightly curved, 9 cm long and 1-3 mm wide, 50-125 ray flowers are yellow, 7-15 mm long and 0.5-1.0 mm wide.

Erigeron compositus (Cutleaf fleabane) is a perennial that is more of a cushion plant, leaves mainly basal and 2-3 times lobed, 0.5-7 cm long, very few stem leaves, flowering stems 2-20 cm tall with solitary heads 8-20 mm wide and 5-10 mm tall, 20-60 blue, pink, or white ray flowers 12 mm long and 2 mm wide.

Erigeron nanus (Dwarf fleabane) is a perennial from a woody base, hairy stems 3-8 cm tall, basal leaves are mainly linear 1.2-4 cm long and 1-2 mm wide, flower heads are solitary 7-13 mm wide and 5-8 mm tall, 15-35 purplish ray flowers 5-10 mm long and 1.3-2.4 mm wide.

Gutierrezia sarothrae

Broom Snakeweed



Steve Perkins



Charles Webber © California Academy of Sciences

Plant Characteristics: Shrub with a rounded shape, 9-90 cm tall, much-branched from a woody base or taproot

Flowers: Heads in clusters of 3-10, 3-4.5 mm tall and 2-3.5 mm wide, 3-7 yellow rays 2-5 mm long, mostly 3-8 disk 2-3 mm long

Leaves: Two forms; main stem leaves 2-7 cm long and 1-3 mm wide, linear to linear-lanceolate, and lower leaves entire, glabrous to covered with soft woolly hairs, and in a tight cluster

Fruit: Achene, 1-2 mm long, with pappus of 8-10 scales

Where Found: Sagebrush steppe areas

Notes: Take time to identify this plant correctly. It could be mistaken for an immature *Chrysothamnus viscidiflorus*, but *C. viscidiflorus* has twisted leaves.

Haplopappus acaulis

Stemless Goldenweed



Huntly Lab

Plant Characteristics: Perennial from a thick woody base and stout taproot, 5-20 cm tall

Flowers: Solitary heads, 6-10 mm tall and 8-20 mm wide, with bracts in a series of 3 and with pointed tips; 6-15 yellow ray flowers, 8-10 mm long and 2-4 mm wide

Leaves: Basal 0.3-6 cm long and 1.5-10 mm wide with a sharply pointed tip; stem leaves few

Fruit: Achenes covered may be covered with silky hairs, pappus white to brownish

Where Found: Sagebrush, grasslands, juniper, to ponderosa pine

Notes:

Other *Haplopappus* species found in the park:

Haplopappus nanus (Dwarf goldenbush) is a compact shrub 1-3 dm tall, branches are yellow and become gray with age, leaves are 3-18 mm long and 0.5-2 mm wide, linear and entire, flower heads are solitary or a few in a cluster, flower head 5.5-8.5 mm tall and 3-7 mm wide, bracts in series of 4 or 5, 1-7 yellow rays 2-3 mm long and 4-10 disk flowers.

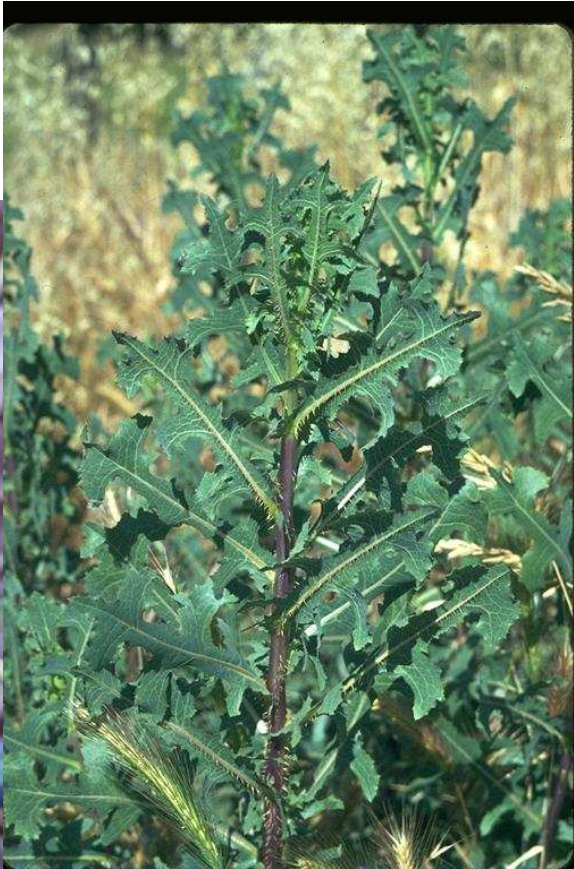
Haplopappus resinosus (Columbian goldenweed) is a compact shrub 1-3 dm tall, leaves generally 0.5-3 cm long and 0.5-2 mm wide, 10-20 flower heads per plant are narrow, pale yellow to almost white ray flowers 3-6 mm long, around 13 disk flowers 4.5-7.5 mm long.

Haplopappus stenophyllus (Linearleaf goldenbush) is a mat forming plant from a woody base, stems rarely greater than 2 dm, leaves are mainly basal and linear, around 2 cm long and 2 mm wide, 6-15 yellow ray flowers.

Haplopappus suffruticosus (Bighead goldenbush) is a compact shrub, 1-6 dm tall, with relatively large flower heads, generally 20-40, of 7-11 mm long disk flowers with 1-8 yellow rays up to 2 cm long .

Lactuca serriola

Prickly Lettuce



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Michael Charters

Plant Characteristics: Biennial or annual with erect stems, 3-18 dm tall

Flowers: Yellow fading to blue in a paniculate cluster

Leaves: Mainly 3-30 cm long and 1-10 cm wide pinnatifid or pinnately lobed, vertically oriented, with small rough firm bristles that are red along the underside of the main vein

Fruit: Brown achenes with white pappus, 3-4.5 mm long

Where Found: Widely distributed

Notes: To identify this plant when there are just basal leaves, look for the stiff and red hairs on the mid-vein on the underside of the leaves.

Layia glandulosa

White Tidy tips



Huntly lab

Plant Characteristics: A branching, spreading annual, 5-44 cm tall, often with reddish stem

Flowers: Small composite head, with white rays, 4-15 mm long and three-lobed at the tip, and numerous yellow disk flowers

Leaves: Long and narrow, 1-6 cm long by 1-6 mm wide, upper are entire and lower toothed or lobed

Fruit: Ray achenes 3-4 mm and disk achenes 3-6 mm; pappus of 10-12 white woolly hairs

Where Found: Dry, open places in deserts and foothills

Notes: Observed in the southern part of the Wapi flow, in an area with sandy soils

Machaeranthera canescens

Purple Aster



Michael Charters

Plant Characteristics: Branching biennial or perennial from taproot, 10-50 cm tall

Flowers: A small composite, the rays (15-25) white to blue, 5-12 mm long and 1.5-2.5 mm wide, the center are yellow disk flowers

Leaves: Lower linear oblanceolate up to 10 cm long and 1-22 mm wide, the upper shorter and linear, all are toothed

Fruit: Achene 2.5 mm long with off-white pappus

Where Found: Dry open places in the plains and foothills

Notes: Young plants have leaves similar to those of *Leptodactylon pungens*, but *L. pungens* is a woody species from a woody base. Take the time to identify correctly.

Senecio canus

Woolly Groundsel



Huntly Lab

Plant Characteristics: Perennial, 1-3 dm, generally silver-gray due to the woolly-hairs that cover the leaves, blooming from May to August

Flowers: Made of yellow female ray flowers and bisexual yellow disk flowers less than 15 mm across creating a flat-topped cluster

Leaves: Mainly basal, ranging from narrowly lanceolate to egg-shaped, mainly entire but can be lobed, 1-5 cm long, stem leaves fewer and much smaller

Fruit: Hairless achenes with a pappus consisting of white, hair-like bristles

Where Found: Dry, open rocky places from the plains and foothills to timberline or above

Notes: These plants often grow in the cracks on the lava flows and occasionally on kipukas

Senecio integerrimus

Columbia Groundsel



Huntly Lab

Plant Characteristics: Perennial with a solitary stem, 10-70 cm tall

Flowers: 3-10 composite heads consisting of 8-13 yellow female rays 6-15 mm long and yellow bisexual disk flowers

Leaves: Mainly basal, elliptic, 6-25 cm long and 0.8-4 cm wide, covered with loose cobweb-like hairs

Fruit: Achenes glabrous with white pappus

Where Found: Dry to rather moist open places

Notes: *Senecio multilobatus* (Lobeleaf groundsel) is also a perennial found in the park. The stems are mainly 1-6 dm tall and are glabrous, basal leaves are spatula shaped, pinnatifid, and toothed (2-12 cm long and 0.3-3.5 cm wide). Stem leaves are much smaller than for *S. integerrimus*. Flower heads are few to many with 7-13 yellow rays ranging from 4-10 mm long.

Taraxacum officinale

Dandelion



Charles Webber © California Academy of Science

Plant Characteristics: Thick tap-rooted weedy perennial with milky sap, 5-40 cm tall, flowers May to August

Flowers: Single, bisexual yellow ray florets measuring 3.5-5 cm across

Leaves: Basal, lance- to spoon-shaped, 5-40 cm long and 1-10 cm wide, pinnately cut into triangular backward-pointing lobes, the largest lobe at the tip

Fruit: Achenes olive-brown, 3-4 mm long, with spiny-ribbed beaks that are generally 2.5-4 times as long as the body, and a white pappus

Where Found: Widespread across North America

Notes: This is the common dandelion.

Tetradymia canescens

Gray Horsebrush



Steve Matson

Plant Characteristics: Shrub up to 12 dm; flowers May-September

Flowers: Heads of 4 yellow disk flowers only; corollas 7-11 mm long; terminating the branches

Leaves: Linear or oblanceolate, alternate, 1-3 cm long and 1-4 mm wide, covered with white hairs

Fruit: Achenes 2.5-5 mm long, pappus made up of white or tawny bristles

Where Found: Dry, open places in the foothills and plains

Notes:

Townsendia florifera

Showy townsendia

Unable to locate photo

Plant Characteristics: An annual or biennial, 3-20 cm tall

Flowers: Heads are solitary to few; 13-34 white to pink and dark purple to lavender ray flowers, 7-12 mm long x 1.2-3 mm wide; yellow disk flowers, 3.3-6 mm long

Leaves: Basal leaves 6-50 mm long x 3-12 mm wide and spatula-shaped; stem leaves linear and 10-40 mm long x 1-5 mm wide

Fruit: Hairy achenes with stiff bristles 1-6 mm long

Where Found: Grasslands and sagebrush steppe

Notes:

Tragopogon dubius

Salsify



Dr. Robert and Margaret Orr © California Academy of Sciences

Plant Characteristics: Biennial, milky sap, 30-100 cm tall, stems hollow from a taproot, flowering from May-September

Flowers: 1 head made up of yellow ray flowers only, each ca. 1.5 cm long, entire head 4-6 cm across; 8-13 bracts in one row, very slender, ca.1.5 cm long, extending past the flower head

Leaves: Alternate and grass-like, clasping stem, 5-30 cm long and 3-10 mm wide, linear and gradually tapering to the tip

Fruit: Achenes that are minutely spiny, 25-35 mm long; pappus of feathery bristles; can look like a giant dandelion head

Where Found: Fairly dry disturbed sites

Notes: The leaves are fleshy and filled with milky sap.

Other genera from this family in the park include *Ambrosia*, *Arctium*, *Carduus*, *Centaurea*, *Chondrilla*, *Cichorium*, *Eriophyllum*, *Filago*, *Grindelia*, *Helianthella*, *Helianthus*, *Lygodesmia*, *Madia*, *Onopordum*, and *Xanthium*

Ambrosia acanthicarpa (Sand bursage) is an annual that is 0.9-7.5 dm tall, often branching from the base and covered with stiff hairs, with leaves that are mostly alternate and on petioles, the blades 0.9-4.5 cm long and 0.6-3.5 cm wide, pinnatifid, and heads numerous, in tall clusters that are terminal on the ends of the stems.

Arctium minus (Burdock) is 5-15 dm tall with alternate basal leaves that are rhubarb-like on long petioles, blades commonly 1-3.5 dm long and 1-3 dm wide; may be covered with hairs; tube shaped flowers in tall clusters, with pink to purplish corollas.

Carduus nutans (Musk thistle) (**NOXIOUS**) is a biennial or annual thistle that is 0.6-20 dm tall, stems are covered with hairs that are cobweb like, leaves are alternate and 3-40 cm long and 0.5-20 cm wide, linear to elliptical, flower heads are commonly solitary with red to purple flowers

Centaurea diffusa (Diffuse knapweed) (**NOXIOUS**) is an annual or biennial that is 10-70 cm tall and stiffly branching, the leaves are pinnatifid 2-10 cm long and finely divided into narrow segments, the flowers are small white to pink heads composed completely of disk flowers.

Centaurea maculosa (Spotted knapweed) (**NOXIOUS**) is a biennial or short-lived perennial, stems may be simple or branched above the middle, 3-10 dm tall and covered with hairs, leaves are 1-9 cm long and pinnatifid with linear lobes that may be toothed, flower heads are few to many and vase shaped, the flowers are pink or purplish, bracts produce spines that are 0.5 mm long.

Centaurea solstitialis (Yellow starthistle) (**NOXIOUS**) is a annual or biennial thistle that is covered with grayish hairs, the stems are 1-6 dm tall, leaves are 1-12 cm long and 0.1-3 cm wide, the basal leaves are pinnatifid while the stem leaves are entire and linear, flower heads are few to numerous, urn shaped, and terminating the branches, flowers are yellow with bracts that produce spines 10-20 mm long.

Chondrilla juncea (Rush skeletonweed) (**NOXIOUS**) is a perennial from a taproot 3-15 dm tall, the basal leaves are pinnatifid 5-13 cm long and 1.5-3.5 cm wide, the stem leaves are linear and 2-10 cm long and 1-8 mm wide, flower heads are made up of 7-15 yellow flowers.

Cichorium intybus (Chicory) is 3-10 dm tall or more with lower leaves on petioles, the blades are 6-20 cm long and 1-5 cm wide, more than likely toothed, the upper leaves are much smaller, flower heads are large and showy with 1-3 group in a cluster, flowers are pure blue.

Eriophyllum lanatum (Wholeleaf eriophyllum) is a perennial that is very hairy, the stems are erect and are 10-20 cm tall, leaves are 1-4 cm long and may be entire or 3-5 times divided, the flower heads are solitary, 5-8 yellow ray flowers that are 6-10 mm long and 2-5 mm wide.

Filago californica (California cottonrose) is an annual with erect stems 0.5-3 dm tall, stems may be simple or branched, alternate leaves are 0.8-2 cm long and narrow, flower heads are made up of disc flowers and are egg shaped and 3-4 mm tall, in general there are 12-20 disc flowers per head.

Grindelia squarrosa (Curlycup gumweed) is a perennial or biennial that is very sticky and has a strong odor; stems are 1-8 dm tall and glabrous; leaves are 2-5 cm long and toothed, the upper leaves clasping the stem; flowers consist of 25-40 yellow rays that are 7-15 mm long.

Helianthella uniflora (Oneflower helianthella) is known as the one-head sunflower and is a perennial, branching from a woody base; stems around 3-10 dm tall; basal leaves 3-15 cm long and 0.6-5.5 cm wide on petioles and entire; stem leaves generally larger in the middle of the stem and then becoming smaller upwards; flower heads are erect and solitary (sometime 2-3 flower heads are present), 1.5-3 cm wide with 13-17 yellow rays that are 2-4.5 cm long.

Helianthus annuus (Annual sunflower) is the common sunflower. It is an annual, with rough, hairy stems, 3-40 dm tall, that may be simple or branched; oval leaves alternate above, 5-40 cm long and 2-40 cm wide, may be serrated; flower heads solitary or few, with purplish red disks, mainly 2-5 cm wide, and yellow ray flowers.

Lygodesmia spinosa (Spiny skeletonplant) has spine-tipped branches from a taproot, with tufts of brownish wool at the base; flower heads are short and occur laterally on the branches; pink or purple bisexual flowers.

Madia glomerata (Cluster tarweed) is an annual with stems 8-40 cm tall, covered with hairs on the leaf bases and the stems; linear leaves 1.2-9 cm long and 1.5-7 mm wide; flower heads in dense terminal clusters, with inconspicuous yellow or purplish ray flowers and 1-10 1.5-2.5 mm long disk flowers.

Onopordum acanthium (Scotch thistle) (**NOXIOUS**) is a biennial thistle with stems 5-15 dm tall, with leaves in a basal rosette, 5-50 cm long or more and 2-15 cm wide, pinnately divided, toothed, and hairy on both surfaces; flowers reddish purple to pink, with yellowish bracts that have 3-5 mm long spines

Xanthium strumarium, or Cocklebur, is an annual with large fleshy cotyledons and a taproot; stems 1.5-10 dm tall or more; leaves alternate and the blades 2-12 cm long and about as broad, oval shaped and often lobed; flower heads in few to many clusters, these producing burs that are oval and 1-3.5 cm long.

Boraginaceae

General Family Characteristics: Leaves usually alternate and spiral; flowers usually bisexual and radial sepals usually 5; petals usually 5; stamens usually 5; carpels 2; ovary superior with axile placentation and 4 locules; fruit a drupe with 1 4-seeded, 2 2-seeded, or 4 1-seeded pits or a schizocarp of usually 4 1-seeded nutlets.

Cryptantha ambigua

Basin Cryptantha



Huntly Lab

Plant Characteristic: Annual, 1-2.5 dm tall, covered with short, stiff almost sharp hairs

Flowers: Corolla white and 1-2 mm wide, inconspicuous

Leaves: Linear to narrowly lanceolate, 2-3 cm long and 1-4 mm wide

Fruit: Nutlets (ovate) can be rough, not at all wing-margined, measuring from 0.9-1.5 mm wide

Where Found: Dry, open places from lowlands to mid elevation in the mountains

Notes:

Cryptantha circumscissa

Cushion Cryptantha



Huntly Lab

Plant Characteristics: Annual, low branching plant creating cushions 1-6 cm broad

Flowers: Solitary in crowded upper axils, corolla inconspicuous, 1-2 mm wide

Leaves: Oblanceolate, 3-15 mm long and 1-2 mm wide, covered with short stiff hairs

Fruit: 4 nutlets, smooth and triangular-ovoid or oblong-lanceolate, 1.2-1.7 mm long

Where Found: Sagebrush steppe areas

Notes:

Cryptantha fendleri

Fendler's Cryptantha

Unable to locate photo

Plant Characteristics: Annual, relatively slender plant; not cushion forming; usually erect, 1-5 dm tall; spikes 2-12 cm long; covered with rough stiff hairs

Flowers: Inconspicuous corolla, ca.1 mm wide

Leaves: Narrowly oblanceolate to linear, 2-5 cm long and 2-4 mm wide

Fruit: Nutlets lanceolate, smooth, and generally 4, 1.5-2 mm long and 0.5-0.7 mm wide

Where Found: Sand dunes and sandy soils

Notes: *Cryptantha watsonii* (Watson's cryptantha) is similar to *C. fendleri* in appearance, but with smaller leaves (1-4 cm long and 1-4 mm wide) and smaller spikes (1-4 cm long)

Cryptantha torreyana

Torrey's Cryptantha



Huntly Lab

Plant Characteristics: Annual, 1-4 dm tall, relatively slender plant, not cushion forming, usually erect

Flowers: Corolla inconspicuous, ca.1 mm wide; in clusters

Leaves: Oblanceolate to linear, 2-5 cm long and 3-6 mm wide; no conspicuous basal leaves

Fruit: Nutlets ovate, smooth, and generally 4, 0.8-1.2 mm wide

Where Found: Common and widespread up to mid-elevation in the mountains, but not found in sand dunes

Notes: *Cryptantha rostellata* (Weakstem cryptantha) is similar to *C. torreyana*, but *C. rostellata* has only one solitary nutlet.

Other *Cryptantha* species found in the park:

Cryptantha celosioides (Buttecandle) is a perennial with well-developed tufts of basal leaves that are broad and spatula-shaped, 2-8 cm long and 4-15 mm wide, flowers in dense spikes, and a large showy corolla, with limb 8-12 mm wide.

Cryptantha interrupta (Elko cryptantha) is a long-lived perennial with few to several stems, 1.7-6 dm tall, covered with white hairs, leaves spatula-shaped, 1.5-7 cm long and 4-12 mm wide; flowers in groups, 1-2.5 dm long; corolla white with the tube 2-2.5 mm long.

Cryptantha gracilis (Narrowstem cryptantha) has a very slender erect stem, 10-20 cm tall; leaves linear and covered with spreading hairs, lower leaves 1.5-3 cm long and 1-3 mm wide, becoming smaller upwards on the stem; flowers in dense spikes 1-2 mm wide.

Cryptantha humilis (Roundspike cryptantha) is a perennial, 5-30 cm tall from a woody base; leaves spatula-shaped, 1-6 cm long and 2-12 mm wide, very hairy on both surfaces; flowers in narrow cylindrical groups, 2-18 dm long and very hairy, corolla white with a tube 2.5-4.5 mm long.

Lappula occidentalis

Western Stickseed



Huntly Lab

Plant Characteristics: Annual; only few branching, if any; 15-35 cm tall; covered with short soft hairs

Flowers: Blue corolla forming a tube 3-4 mm long with rounded lobes, arranged in racemes

Leaves: Alternate; narrow linear or lanceolate, sometimes the lower are narrowly oblanceolate; 1-3 cm long

Fruit: Nutlets (4) 2-2.5 mm long with a single row of barbed prickles

Where Found: Warm desert shrub-land such as sagebrush steppe

Notes: *L. occidentalis* is synonymous with *L. redowski*. *Lappula squarrosa* (Bristly sheepbur), which is not native to CRMO and is reported but not confirmed in the park, is also an annual but is larger (1.5-8 dm tall, leaves 2-5 cm long, and nutlets 3-4 mm long).

Lithospermum ruderale

Western Stoneseed



Huntly Lab

Plant Characteristics: Perennial; heavy-rooted with a woody taproot; many stems, up to 20-60 cm tall

Flowers: Pale yellow to green; tube 4-6 mm long with 5 spreading lobes; limb 7-13 mm wide

Leaves: Alternate, hairy, dark green, linear to narrowly lance-shaped, 3-8 cm long

Fruit: Nutlets (4) smooth, egg shaped, white, and shiny

Where Found: Fairly dry places up to mid-elevations in the mountains

Notes: *Lithospermum arvense* (Corn gromwell), which is not native to CRMO, is an annual that is 1-7 dm tall and can have 1 to several stems. The corolla is white or bluish white, 5-8 mm long; the limb 2-4 mm wide.

Mertensia longiflora

Longflower Bluebells



Christopher Christie

Plant Characteristics: Perennial with very shallow roots; 1-2 stems measuring 5-20 cm tall; flowers clustered at the end of the stem

Flowers: Corolla tube 15-30 mm long, blue to purple, and generally 2-3 times as long as the limb; 2-10 in a cluster

Leaves: Mainly found on the stems and not basal, oblanceolate, 1.5-4 times as long as wide, with no evident side veins

Fruit: Nutlets 4

Where Found: Valleys and foothills to mid-elevation in mountains

Notes:

Mertensia oblongifolia

Oblongleaf Bluebells



Mary Winter

Plant Characteristics: Perennial, 1-3 dm tall, with clustered stems and a stout, deep root

Flowers: Blue to purple; corolla tube (5-12 mm) generally 1.3-2 times as long as limb; in large paniculate clusters

Leaves: More abundant on the stem and generally 2.5-7 times as long as wide, oblong or spatula-shaped to narrowly oblong-ovate, with small hairs on the upper surface and glabrous lower surface

Fruit: Nutlets (4), 3-4 mm long and wrinkled

Where Found: Valleys and foothills to mid-elevation in mountains

Notes:

Other genera of this family in the park include *Amsinckia*, *Hackelia*, and *Plagiobothrys*.

Amsinckia menziesii (Menzie's fiddleneck) is an annual with erect stems, 3-8 dm tall, leaves linear and hairy on both sides; flowers in clusters 7-13 mm long and linear; corolla light yellow and 5-7 mm long.

Amsinckia tessellata (Bristly fiddleneck) is an annual with a stout branching stem, 3-6 dm high and hairy; leaves linear and 2-7 cm long; flowers in spikes, 5-12 cm long; corolla orange, with the tube 5-10 mm long, entire flower 2.5-5 mm wide.

Hackelia micrantha (Meadow stickseed) is a perennial from a stout root, basal leaves 8-15 cm long and 15-20 mm wide, corolla small and pale blue 3.5-5 mm wide with a tube 1.5-2 mm long that is often whitish.

Hackelia patens (Spotted stickseed) is a perennial with 2 or 3 short stems from a woody base, many basal leaves and stem leaves, flowers in groups of 5-10, corolla whitish or sometimes light blue, and flowers usually quite large.

Plagiobothrys scouleri (Popcorn flower) is branched at the base, with stems 5-25 cm tall, covered with stiff hairs, leaves 1-8 cm long and linear, and corolla ca. 1.5 mm long and inconspicuous.

Brassicaceae

General Family Characteristics: Leaves usually alternate and spiral, sometimes in basal rosettes; flowers usually bisexual, radial or bilateral; sepals 4; petals 4, often forming a cross; stamens (2) 6 or numerous; carpels usually 2; ovary superior; ovules 1 to numerous on each placenta; fruit a berry or capsule.

Alyssum desertorum

Desert Alyssum



Huntly Lab

Plant Characteristics: Annual, one stem or branching at the base, 4-20 dm tall

Flowers: Pale yellow petals, 2.7-3.6 mm long, and sepals, 1.7-2.5 mm long

Leaves: Spatula-shaped to oblanceolate or sometimes linear, 4-22 mm long and 2-3 mm wide, green, with star-shaped hairs on both surfaces

Fruit: Silicles, 2.9-3.8 mm long and about as wide, round to ovate-elliptic, strongly compressed, glabrous

Where Found: Desert areas such as sagebrush steppe

Notes: *Berteroa incana* (Hoary false alyssum) is similar to *A. desertorum*. It is generally 3-11 dm tall and branches at the base, but the leaves (3-5 cm long) and petals (4-6 mm) are larger in *B. incana* than *A. desertorum*, and the silicles are more oval (5-7 mm long and 3-3.5 mm wide).

Arabis holboellii

Holboell's Rockcress



Huntly Lab

Plant Characteristics: Perennial or possibly biennial, stems erect from a taproot, about 10-90 cm tall, flower from May to August

Flowers: Range from white to purple, cross shaped, petals 5-10 mm long

Leaves: Alternate and mainly basal, green to grayish with fine hairs, lanceolate, 1-5 cm long and 2-7 mm wide, basal leaves taper to stalks and upper leaves clasping to the stem.

Fruit: Siliques hang downward, 3-7 cm X 1-2 mm

Where Found: Sagebrush to subalpine

Notes: *Arabis divaricarpa* (Spreading rockcress) is classified with *A. holboellii*

Arabis lignifera

Desert Rockcress

Unable to locate photo

Plant Characteristics: Short-lived perennial with simple stems

Flowers: Petals 6-9 mm and range from rose, pink, or purplish

Leaves: Basal 2-6 mm wide and green rather than gray, sometimes toothed, numerous stem leaves and sometimes overlapping, 2-10 mm wide

Fruit: Siliques glabrous, 1-1.5 mm wide, wings of seeds less than 0.5 mm wide

Where Found: Sagebrush deserts

Notes: *Arabis cobrensis* (Gray rockcress) is similar to *A. lignifera*, but is a longer-lived perennial with a broad woody base, basal leaves that are linear (1-3 mm wide) and entire, and few stem leaves. Petals area 4-6 mm and range from white to deep pink.

Arabis microphylla

Littleleaf Rockcress



Michelle Cloud-Hughes

Plant Characteristics: Perennial, 0.5-3 dm tall with several branches, mainly glabrous throughout or may be hairy below stem branching

Flowers: Petals 5-8 mm long and pink to lavender, also spatula shaped, sepals 2.5-4 mm long, often purplish

Leaves: Basal 7-25 mm long and 2-5 mm wide, spatula shaped that may be toothed, may be covered with forked hairs, stem leaves linear shaped, 6-20 mm long and 1-6 mm wide, may also be toothed

Fruit: Siliques 25-60 mm long and 1.2-2 mm wide, erect

Where Found: Throughout sagebrush and juniper

Notes: *Arabis perennans* (Perennial rockcress) is synonymous with *A. microphylla*. *Arabis suffrutescens* (Woody rockcress) has siliques that are 4-6 mm wide, petals that are 5-7 mm long and range from pinkish to purple, and leaves that are arranged similarly to those of *A. microphylla* and may be overlapping up the stem.

Arabis sparsiflora

Sicklepod Rockcress



Charles Jones

Plant Characteristics: Perennial, 2.3-10 dm tall with a solitary stem (stem rarely branching)

Flowers: Petals 6-14 mm, ranging from white to deep purple

Leaves: Green to gray hairy basal leaves, 3-7 cm long and 3-6 mm wide, lanceolate with ear-shaped lobes at the base of the blade, entire to dentate; stem leaves 1.5-6 cm long and 3-7 mm wide

Fruit: Siliques curving upwards, 4-12 cm long x 1.5-2 mm wide, may be strongly arcing

Where Found: Mostly in sagebrush or ponderosa pine

Notes: This *Arabis* is easily distinguished by its deep purple flowers.

Camelina microcarpa

Littleseed Falseflax



Brent Miller

Plant Characteristics: Annual, 1.5-8 dm tall or more, covered with short, stiff hairs that may be star shaped

Flowers: Petals 3-4 mm long, white, and roundish

Leaves: Alternate, basal leaves 1-7 cm long, entire to obscurely toothed, many stem leaves that are smaller than basal leaves

Fruit: Silicle 5-6.5 mm long and 3-4 mm wide, somewhat inflated, glabrous

Where Found: Widespread in dry places

Notes: *Lesquerella occidentalis* (Western bladderpod) is a perennial from a woody base that may be branched; stems 2-15 cm long; spatulate or ovate basal leaves, 0.5-8 cm long and 3-15 mm wide; stem leaves 4-15 mm long and 1-8 mm wide; flowers with yellow petals, 6-10 mm long; silicles ellipsoid and 4-6 mm long. *L. occidentalis* and *C. microcarpa* have silicles that are similar and hard to distinguish at first. They can be distinguished by the leaves.

Chorispora tenella

Blue or Purple Mustard



Steve Schoenig

Plant Characteristics: Annual weed, 5-40 cm tall, branching from the base

Flowers: Purple, petals 9-12.5 mm long, but visible portion only 5 mm long; on upper stem

Leaves: Mainly on stems, elliptic to oblanceolate, 3-8 cm long and 0.1-2.8 cm wide, with wavy edges

Fruit: Narrow siliques, curved, 3.5-4.5 cm long, with beak 8-22 mm long

Where Found: Dry, disturbed sites at low elevation

Notes:

Descurainia pinnata

Western Tansymustard



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Plant Characteristics: Annual or winter annual, 1-10 dm tall, may have one or many branches

Plant Characteristics: Annual or winter annual, 1-10 dm tall, may have one or many branches

Flowers: Yellow to green or violet sepals, 1-2.2 mm long; cream to yellow petals, 1.5-3 long

Leaves: Basal and on stems, 2-10 cm long and pinnatifid 1-2 times, with linear to oblong segments that are often toothed

Fruit: Siliques, 3-15 mm long and 1-2 mm wide, oblong to linear, with 1-20 seeds

Where Found: Throughout most of the United States

Notes:

Descurainia richardsonii

Mountain Tansymustard

Unable to locate photo

Plant Characteristics: Annual or winter annual, sometimes biennial, 3-12 dm tall or more; simple branch to many branches

Flowers: Yellow to green sepals, 0.9-1.7 mm long; yellow petals, 1.3-2.8 mm long

Leaves: Leaves basal and on stems, 1.5-8 cm long, the lower 1-2 times pinnatifid with 2-4 pairs of toothed leaflets and the upper reduced in size and only 1 time pinnatifid

Fruit: Erect siliques, 7-14 mm long and 0.8-1.2 mm wide, with 4-10 seeds

Where Found: Widespread, mostly in low to mid elevations in the mountains

Notes: The *Descurainias* are hard to distinguish, and it may be impossible to determine which species is which in the field.

Descurainia sophia

Flaxweed Tansymustard



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Plant Characteristics: Annual, 20-100 cm tall from taproots, freely branched, flowering from March to July

Flowers: Yellow to white, cross-shaped, ca. 2-2.5 mm long, in elongating clusters

Leaves: Alternate, 2-3 times pinnately cut into narrow segments, 2-9 cm long

Fruit: Linear pods (siliques), 15-30 mm x 0.5-1 mm, slightly curved,

Where Found: Disturbed areas from the plains to the mountains

Notes: The leaves of this species are very feathery, and it is a little more delicate than the other species of *Descurainia* in the park.

Draba verna

Spring Whitlowgrass



Laura Ann Eliassen

Plant Characteristics: Small annual, 1-10 cm tall with slender taproot

Flowers: White, with small (1.5-2.5 mm long) petals that are deeply lobed, making 4 petals look like 8

Leaves: Basal, creating a circle, 3-10 mm long and 0.8-3 mm wide, oblanceolate, entire or toothed

Fruit: Silicles 2-10 mm long and 1-4 mm wide, elliptic to obovate

Where Found: Sage-steppe and ponderosa pine areas

Notes:

Other species of *Draba* in the park

Draba douglasii (Alkali false whitlowgrass) is a larger plant from a stout taproot, with leaves measuring 5-12 mm long and 1-2 mm wide, petals 4-5 mm long, and silicles 3-7 mm long.

Erysimum capitatum

Western Wallflower



Matt Below

Plant Characteristics: Biannual or short-lived perennial from taproot, 1.2-8.5 dm tall or more; flowering from March to July

Flowers: Yellow to yellow orange petals, 12-28 mm long; sepals 7.5-14 mm long and yellowish or purplish.

Leaves: Alternate and basal, 2-10 cm long and 2-14 mm wide, somewhat linear to elliptic, may be slightly toothed, green to grayish, pubescent

Fruit: 4-sided siliques, 2-11.5 cm long and 1-2.5 mm thick, with wingless seeds, 1.5-2.3 mm long

Where Found: Throughout desert shrub or within rocky banks

Notes: Also known as *Erysimum asperum*.

Other specie of *Erysimum* in the park:

Erysimum occidentale (Wormseed wallflower) is 10-40 cm tall and has yellow flowers grouped 5-30 per stem tip with petals 6-10 mm long; 4-8 cm long and 1-4 mm wide leaves are grayish green.

Isatis tinctoria

Noxious Weed

Dyer's Woad



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Plant Characteristics: Biennial or short-lived perennial, 3.5-10 dm tall or more, erect, glabrous throughout or covered with long simple hairs at the base

Flowers: Petals 3-4.2 mm long and yellow, spatula shaped or rounded; sepals 1.8-2.3 mm long and yellowish

Leaves: Basal 3.5-15 cm long and 0.8-4 cm wide, longer than wide to elliptic, somewhat entire to small toothed, covered with simple hairs; stem leaves become smaller further up the plant

Fruit: Silicles 10-18 mm long and 4-7 mm wide, rounded and glabrous, mainly black

Where Found: Throughout dry areas and roadsides

Notes: A large population of this plant was found in the southern end of the Wapi flow in the summer of 2007. Any sighting of this species should be reported to the Park Service. The silicles of this species are distinctive.

Lepidium densiflorum

Pepperweed

Unable to locate photo

Plant Characteristics: Annual, 15-60 cm tall from taproots, stems single and freely branched, flowering from April to June

Flowers: Greenish and inconspicuous, cross-shaped, sepals 1mm long, may be lacking petals or has white petals 0.7-1 mm long, numerous flowers in clusters 5-15 cm long

Leaves: Basal and alternate, narrowly lance-shaped, 3-10 cm x 1-2 cm, toothed to deeply lobed, upper leaves more simple

Fruit: Round pods, 2-3.5 mm long, notched and winged at tip, numerous clusters

Where Found: Dry, open slopes and disturbed ground

Notes:

Other species of *Lepidium* in the park

Lepidium virginicum (Hairy pepperweed) has leaves measuring 1.5-15 cm long x 0.3-3.5 cm wide, sepals 0.6-1 mm long, and white petals 0.7-1.5 mm long. The silicles are also notched at the tip and measure 2.5-4 mm long and 2.2-3.5 mm wide.

Lepidium perfoliatum

Claspingleaf Pepperweed



Steve Matson

Plant Characteristics: Annual, 0.7-4 dm tall, lacking a woody base

Flowers: Sepals 0.7-1.2 mm long and are often purplish; yellow petals 0.8-1.5 mm long

Leaves: Basal 0.8-15 cm long and 2-28 mm wide and divided 2-3 times into narrow segments; leaves become entire moving upwards on the stems and clasping the stem almost entirely

Fruit: Silicles 3.5-4.3 mm long and 3.2-3.6 mm wide, oval to elliptic, wingless

Where Found: Juniper and sagebrush communities

Notes: This species is found in more disturbed areas, such as the trail to Woodroad Kipuka.

Schoenocrambe linifolia

Flaxleaf Plainsmustard

Unable to locate photo

Plant Characteristics: Perennial, 2-9 dm tall and erect; glabrous; woody base from rhizomes; simple to branched

Flowers: Petals 7.5-11 mm long and yellow; sepals 4.3-6 mm long and yellowish

Leaves: Alternate, 1.3-9.3 cm long and 1-25 mm wide, entire to deeply pinnatifid

Fruit: Siliques 25-65 mm long and 0.8-1.2 mm wide

Where Found: Sagebrush to juniper areas and sometimes aspen communities.

Notes:

Sisymbrium altissimum

Tumblemustard



Louis Landry

Plant Characteristics: Annual, arising from taproot, 2.5-10 dm tall or more

Flowers: Sepals 3.6-5 mm long and often yellowish; yellow petals fading to white, 6.3-8.5 mm long; in racemes

Leaves: Alternate and mostly basal, 1-20 cm long or more, lower pinnatifid or slightly lobed and becoming more pinnatifid into linear segments moving upward along the stem

Fruit: Siliques 50-90 mm long and 1-1.5 mm wide

Where Found: Disturbed sites within sagebrush steppe areas

Notes: This plant has become abundant in the Wapi area of the park.

Other genera of this family in the park include *Phoenicaulis*, *Polyctenium*, and *Thlaspi*.

Phoenicaulis cheiranthoides (Daggerpod) is a perennial from a woody base that branches, stems 5-20 cm tall, leaves are in a basal rosette, grayish 3-15 cm long and 0.5-1.5 cm wide, oblanceolate and entire, pink to reddish purple petals 11-15 mm long, siliques 2-8 cm long and 2-6 mm wide.

Polyctenium fremontii (Fremont's combleaf) (synonymous with *Smelowskia fremontii*) has grayish hairs almost throughout, several stems 5-20 cm tall, leaves 1.5-3 cm long and divided into linear segments, white or purplish petals 4-6 mm long, and silicles 5-12 mm long and 1.4-1.8 mm wide.

Thlaspi arvense (Pennycress) is an annual 1-5 dm tall, with leaves entire to dentate and stem leaves possible jointed, petals white, silicles oval, 10-17 mm long, and strongly winged, with each wing 1-3 mm wide.

Cactaceae

General Family Characteristics: Spiny stem succulents; leaves scale-like or lacking; flowers showy and solitary, regular, and complete; sepals and petals numerous; stigmas 3-10; ovary inferior with parietal placentation; fruits berry-like and soft to dry and leathery.

Opuntia polyacantha

Hairspine Pricklypear



Huntly Lab

Plant Characteristics: 1-3 dm tall, in rounded clumps or broader mats; barbs yellow to tan

Flowers: 5-8 cm long and yellow to reddish

Leaves: Leafless, with spines, slightly barbed, yellow to tan; areoles rusty-woolly or non-woolly

Fruit: Berry, dry to juicy, 2-4 cm long, with tan to white spines

Where Found: Plains and foothills to lower mountains

Pediocactus simpsonii

Simpson's Hedgehog Cactus



Christopher Christie

Plant Characteristics: Perennial, 2-15 cm tall and 3-20 cm wide

Flowers: Solitary near tip of tubercles, yellow to purplish petals, 1.5-2 cm long

Leaves: Leafless; 1 to several globe-shaped to ovoid stems, 7-12 cm thick; spines (4-10 per areole) 5-25 mm long and brownish black

Fruit: Somewhat globe-shaped, 6-8 mm long; seeds, black, ca. 3 mm long

Where Found: Desert valleys and low mountains

Caprifoliaceae

General Family Characteristics: Leaves opposite, simple; flowers bisexual and bilateral; sepals usually 5; petals usually 5; stamens (1) 4 or 5; carpels usually 2-5; ovary inferior with axile placentation; fruit a capsule, berry, drupe, or achene

Sambucus cerulea

Elderberry

Plant Characteristics: Shrub

Flowers: Regular, generally 5-merous in an umbel-like formation; inflorescence may be flat-topped

Leaves: Pinnately or even bipinnately compound, with serrate leaflets

Fruits: Berry-like, juicy with 3-5 small seed-like stones and with a white, waxy covering that appears pale powdery blue

Where Found: Widespread

Symphoricarpos oreophilus

Utah Snowberry

Plant Characteristics: Erect shrubs, 5-15 dm tall

Flowers: Regular, 5-merous or occasionally 4-merous, in terminal or axillary short racemes or spikes; corolla relatively long and narrow (longer than wide)

Leaves: Small, simple, entire to occasionally coarsely toothed or even lobed

Fruits: White, berry-like, with 2 seed-like stones enclosing a seed

Where Found: Widespread, open places from foothills to fairly high elevations

Caryophyllaceae

General Family Characteristics: Leaves opposite; flowers usually bisexual, radial; tepals 4-5; stamens 4-10; carpels 2-5; ovary superior with free-central or occasionally basal placentation; fruit usually a loculicidal capsule

Holosteum umbellatum

Jagged Chickweed

Unable to locate photo

Plant Characteristics: Plants erect with simple to multiple branches, 3-22 cm tall or more

Flowers: Umbel of 3-10 flowers; only genus in pink family with an umbel head; green sepals 3.8-5.3 mm long; petals white or pinkish and equal to or longer than sepals

Leaves: Basal leaves with a petiole, oblanceolate to spatula shaped; stem leaves in 1-4 lanceolate to elliptic pairs, 6-20 mm long; all are entire

Fruit: Seeds in capsules 0.7-1 mm long and brown

Where Found: Common weed around Snake River Plain

Notes:

Other genera of this family in the park include *Arenaria*, *Cerastium*, *Silene*, and *Stellaria*.

Arenaria congesta (Ballhead sandwort) is a perennial from a woody base that is 0.6-3.3 dm tall, with basal leaves 0.8-6 cm long and stem leaves in pairs of 3-5, usually shorter than the basal; many flowers, with white petals 5-7.5 mm long, the capsules slightly longer than the petals.

Arenaria fendleri (Prickly sandwort) is a perennial from a taproot, with stems 0.2-2.5 dm tall, basal leaves 0.3-5 cm long, and stem leaves in pairs of 2-6; flowers in groups of 2 to several that are up to 20 mm long, with petals 5-8 mm long and white to brown or pinkish red; capsules have 6 teeth and are roughly the same size as the petals.

Arenaria franklinii (Franklin's sandwort) is a perennial 3-15 cm tall and generally leafy, the leaves are linear and 10-20 mm long and 1-mm wide, the flowers are in clusters with petals 5-12 mm long, this is a very brittle plant and is easy to shatter.

Arenaria kingii (King's compact sandwort) is a perennial larger than 10 cm with narrow leaves larger than 10 mm long and sharp pointed, the sepals range from 4-6 mm.

Cerastium nutans (Longstem chickweed) is an annual that branches from the base, the stems are erect from a taproot and 5-20 cm tall or more, leaves are 5-25 mm long or more and are spatula shaped or linear, flowers in loose clusters, the petals are 3-5 mm long or more, capsules are cylindrical.

Silene douglasii (Douglas's campion) is a perennial forming loose clumps from a woody base and taproot, the flowering stems are 10-48 cm long or more, the basal leaves are smaller than the main stem leaves which are 2-8 cm long and 2-7 mm wide, narrowly lanceolate and hairy above and beneath, flowers are solitary or more commonly 2 to several in clusters, petals are white to greenish, pinkish, or purplish 12-16 mm long, the capsules are 8-12 mm long.

Stellaria longipes (Longstalk starwort) is a perennial from slender rhizomes forming small mats, the flowering stems are 0.3-3.2 dm long and hairy, the leaves are 4-26 mm long and 1-4 mm wide and lanceolate, flowers are solitary or few to several in open clusters, the petals are white and 3-8 mm long and capsules are 4-6 mm long.

Chenopodiaceae

General Family Characteristics: Leaves simple alternate or opposite sometimes scale-like; flowers small bisexual or unisexual with stamens equal in number to tepals and opposite them, pistils 2-3, ovary superior; fruit indehiscent or irregularly rupturing.

Atriplex canescens



Michael Charters

Fourwing Saltbush



Plant Characteristics: Dioecious shrub, 8-20 dm tall

Flowers: Yellow, male flowers in clusters 2-3 mm wide in branching racemes, female flowers in clusters 5-40 cm long in branching racemes

Leaves: Alternate, 10-40 mm long and 2-8 mm wide, linear to obovate and entire,

Fruit: Seeds 1.5-2.5 mm wide

Where Found: Sandy soils in desert shrub and mountain brush

Notes:

Other *Atriplex* species in the park:

Atriplex confertifolia (Shadescale) is also dioecious, but only 3-8 dm tall with leaves 9-25 mm long and 4-20 mm wide and more oval shaped. Flowers are similar in size to *A. canescens*, but the female flowers are only 3-15 cm long.

Other genera found in this family includes *Grayia*, *Halogeton*, and *Salsola*.

Grayia spinosa (Spiny hopsage) is a shrub, 5-12 dm with gray-brown branches, leaves 5-30 mm long and 2-12 mm wide, spatula-shaped, and entire, male and female flowers, male flowers 1.5-2 mm long and female flowers 6-15 mm wide, greenish to straw colored. Other species found within the park include:

Halogeton glomeratus (Halogeton) is an annual 3-45 cm tall and as broad, branching from the base, leaves 3-15 mm long and 1-2 mm thick, spine on the end of leaves 1-1.5 mm long.

Salsola pestifer (Russian thistle) is also known as Russian thistle or tumbleweed, stems often purplish and up to 1 m tall, they become very hard with age, leaves are alternate, linear, and somewhat fleshy, flowers may be solitary or clusters, bracts of the flowers become spines.

Chenopodium album

Lamb's Quarters



Louis Landry

Plant Characteristics: Annual, 20-200 cm tall from slender taproots, usually branched, flowering from July to September

Flowers: Pale green, may be blue tinged, many flowers in small round heads arranged in spikes from leaf axis

Leaves: Alternate and fleshy, lance to diamond shaped, 2-10 cm long, grayish underneath due to dense hairs, wavy edges or irregularly lobed

Fruit: Shiny, black, lens shaped seeds in a papery envelope, 1.1-1.6 mm long

Where Found: Disturbed areas

Notes:

Chenopodium leptophyllum

Narrowleaf Goose

Unable to locate photo

Plant Characteristics: Annual, 12-70 cm tall, erect and simple to many branches

Flowers: Clusters in flat to round top arrangements or spikes, tepals strongly keeled

Leaves: Alternate, 0.7-4 cm long and 1-5 mm wide, linear to narrowly oblong, entire

Fruit: Seed 0.9-1.1 mm wide, often smooth and shiny

Where Found: Sagebrush to mountain brush communities

Notes: *Chenopodium fremontii* (Fremont's goosefoot) is similar to *C. leptophyllum* but is a larger plant (1-8 dm tall) with leaves 0.6-5 cm long and about as wide. More triangular to egg shaped instead of linear, and may have lobes that are arrow shaped. *Chenopodium* species are best distinguished by their leaves.

Other *Chenopodium* species in park:

Chenopodium botrys (Jerusalem Oak goosefoot) is 1-5 dm tall with leaves on a leaf stalk, they are wavy-pinnatifid with lobes that are toothed.

Chenopodium chenopodioides (Buttered goosefoot) is also known as *Chenopodium capitatum* and is 1-4 dm tall. The leaves are on a leaf stalk. They are 1.5-10 cm long and 1-10 cm wide and are triangular to arrow shaped. The leaves are toothed with arrow shaped lobes.

Chenopodium murale (Nettleleaf goosefoot) is 2-5 dm tall with leaves on a leaf stalk. They are 1-5 cm long and as broad. They are more egg shaped, wavy, and toothed.

Crassulaceae

General Family Characteristics: Leaves alternate and spiral, opposite, or whorled, sometimes in a basal rosette; flowers usually bisexual, radial ,with sepals usually 4 or 5, petals usually 4 or 5, stamens 4-10, carpels usually 4 or 5; fruit an aggregate of follicles.

Sedum lanceolatum

Lanceleaf Stonecrop



Gerald and Buff Corsi © California Academy of Sciences

Plant Characteristics: Perennial, 4-25 cm tall, often rhizomatous or stoloniferous

Flowers: Bisexual; yellow corolla with petals 7-9 mm; few to many in terminal cymes

Leaves: Alternate; linear or linear/lanceolate; 5-20 mm long, with fine short rounded bumps

Fruits: Follicles erect

Where Found: Open dry areas, mostly on rocks or gravel

Cyperaceae

General Family Characteristics: Generally rhizomatous; stem usually triangular in cross section; leaves alternate, composed of a sheath and blade; flowers bisexual or unisexual

Carex douglasii

Douglas's Sedge



Larry Blakely

Plant Characteristics: Perennial; 8-28 cm tall; male and female flowers on separate plants

Flowers: In densely crowded clusters, 1.5-5.5 cm long and 10-20 mm wide; 10-25 flowers per cluster, brownish with is light green mid-stripe, bracts 2.2-4.7 mm long and 1.1-1.8 mm wide and oval-shaped

Leaves: Basal or on the lower part of the stem; blade grass-like, 0.5-2 mm wide

Fruit: Biconvex achenes

Where Found: Sagebrush grass communities up to lodgepole pine and spruce-fir communities.

Notes: This plant is grass-like and hard to distinguish from a grass at quick glance. By rubbing the leaf blades between your fingers you can determine a sedge. Sedges have edges.

Carex filifolia

Threadleaf Sedge



Steve Matson

Plant Characteristics: Perennial; bisexual; 8-38 cm tall and mat forming

Flowers: Spikes 1.3-2.5 cm long and solitary, lower portion wider than upper; bracts 8-13 mm long, light brown to brownish

Leaves: Mainly basal or on the lower quarter of the stems; as long as or exceeding the stems; blades grass-like and 0.3-0.5 mm wide

Fruit: Triangular achenes

Where Found: Sagebrush to juniper communities

Notes: This species is fun to see; it can create interesting circular or figure-eight shaped mats on the ground.

Other of *Carex* species in the park:

Carex hoodii (Hood's sedge) is 30-62 cm tall, with leaves mainly basal and grass-like, the spikes tightly congested and less than 5 mm long.

Carex petasata (Liddon's sedge) is 2-7 dm tall, with leaves mainly basal and 1-4 mm wide, grass-like, the spikes 2.2-5 cm long and 8-12 mm wide.

Carex siccata (Dryspike sedge) is 19-36 cm tall, with leaves mainly basal, the largest can be as long as the stems; spikes 1-3 cm long and 5-10 mm wide.

Carex vallicola (Valley sedge) is 15-56 cm tall, with leaves basal and 0.5-2.5 mm wide, the spikes up to 5 mm long.

Euphorbiaceae

General Family Characteristics: Plants usually poisonous; leaves usually alternate and spiral or 2-ranked; flowers unisexual, usually radial, with sepals usually 2-6, petals usually 0-5, stamens 1 to numerous, carpels usually 3, ovary superior and usually 3-lobed with axile placentation; fruits usually a schizocarp. One genus of this family occurs in the park

Euphorbia

Sandwort

Two species of *Euphorbia* are found in the park:

Euphorbia albomarginata (Whitemargin sandwort) is 3-25 cm tall, from a woody base, with opposite oval-shaped leaves, 3-8 mm long, and 15-30 flowers with petioles that are white and may be 3-5 times lobed.

Euphorbia esula (Leafy spurge) (**NOXIOUS**) is 3-7 dm tall, from a woody base, with alternate leaves, typically 25-60 mm long and 2.5-7 mm wide and mainly linear and entire, and flowers in an umbel, with greenish-yellow bracts.

Fabaceae

General Family Characteristics: Leaves usually alternate, spiral to 2-ranked pinnately compound to palmately compound; flowers usually bisexual, radial to bilateral usually cup shaped; sepals usually 5, petals usually 5, stamens 1 to numerous but usually 10, carpel 1; ovary superior, ovules 1 to numerous per carpel; fruit a legume.

Astragalus cibarius

Browse Milkvetch



Huntly Lab

Plant Characteristics: Perennial, 6-30 cm tall

Flowers: Racemes on 3-8 cm long peduncles with 4-14 flowers, bracts 2-4 mm long, tube 5-7 mm long, entire flower 15-19 mm long, pink purple with white wing tips

Leaves: 3.5-10 cm long with 11-19 leaflets measuring 4-17 mm long and 2-13 mm wide, obovate, oblong, or oblanceolate, hairy on the underside and glabrous on the top

Fruit: Pods ellipsoid to oblong, 17-32 mm long and 7-10 mm thick, woody or stiffly leathery

Where Found: Mixed desert shrub communities including sagebrush and juniper

Notes:

Astragalus convallarius

Lesser Rushy Milkvetch

Unable to locate photo

Plant Characteristics: Perennial; 10-60 cm tall; stems erect

Flowers: Racemes at the end of 1-14 cm long peduncles with 3-25 flowers; bracts 0.5-2.3 mm long; tube 3.4-5.4 mm long; flower 6.4-12 mm long and cream colored, sometimes with a purplish vein

Leaves: When present 2-11 cm long, with 3-13 leaflets, 5-30 mm long and 0.5-4 mm wide, linear to oblong

Fruit: Pods, linear to narrowly oblong, 13-50 mm long and 2.3-4 mm thick.

Where Found: Widespread

Notes:

Astragalus filipes

Basalt Milkvetch



Dr. Mark Brunell

Plant Characteristics: Perennial, 2-9 dm tall with erect stems, forming large clumps

Flowers: Loose racemes with 6-30 flowers at the ends of 4.5-22 cm long peduncles; bracts 1-3.5 mm long, tube 3.3-6.4 mm long, total flower 10-14.3 mm long, cream colored

Leaves: 2.5-12 cm long with 9-23 leaflets, 3-25 mm long and 0.5-5 mm wide, linear to narrowly elliptic or oblong, glabrous or slightly hairy on both sides.

Fruit: Pods 17-30 mm long and 3.5-6.5 mm wide, hanging downwards, oblong to elliptic; stalk supporting pods 6-16 mm long

Where Found: Juniper and sagebrush communities

Notes:

Astragalus lentiginosus

Speckledpod Milkvetch



Charles Webber © California Academy of Sciences
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Plant Characteristics: Perennial; 10-40 cm long (spreading); flowering from May-July
Flowers: White, pink, or purplish, in racemes with 11-30 flowers, 9-20 mm long; may be spreading or erect

Leaves: Opposite, 2.4-15 cm long, with 11-19 broadly ovate to roundish leaflets, each 9-16 mm long and 1-13 mm wide; may be smooth or slightly hairy on the upper surface

Fruit: Pod from 1.5-4 cm long and 5-20 mm thick; bladder-shaped, with a flat, up-curved beak

Where Found: Desert to salt flats up to open slopes in the mountains

Notes:

Astragalus purshii

Woollypod Milkvetch



Gladys Lucille Smith © California Academy of Sciences

Plant Characteristics: Perennial, 3-10 cm tall, with stems 0-2 cm long; creates a gray-woolly mat

Flowers: 1-7 yellow to purple or whitish, in racemes, bracts 2-7 mm long, the tube 8.5-12.5 mm long, flowers 19-26 mm long

Leaves: Pinnately compound, 7-19 ovate-elliptic leaflets, 2-14 mm long and 1-7 mm wide, densely villous on both sides

Fruit: Pods ascending, 1-2.5 cm long and 5-11 mm wide, extremely woolly and white

Where Found: Dry ground from sagebrush steppe to lower mountains

Notes: Another species found within the park that could be confused with *A. purshii* is *Astragalus calycosus* (Torrey's milkvetch). *A. calycosus* is a perennial, 1-12 dm tall, from a woody base, lacking stems or with short stems ca. 2 cm long; leaves 1-8 cm long with 3-13 leaflets per leaf, each 2-19 mm long and 1-7 mm wide, elliptic in shape and covered with silvery hairs; 1-8 flowers in clusters, each flower 10-16.5 mm long in shades of pink and purple with white tips. The main difference between the two species is the flower color: *A. purshii* is a distinct purple-and-white combination, whereas *A. calycosus* is a more uniform pink or purple.

Other *Astragalus* species in the park:

Astragalus agrestis (Field milkvetch) is a perennial 2-30 cm tall from a woody base, leaves 3-15 cm long with 15-26 leaflets per leaf 6-20 mm long and 2-10 mm wide, rounded in shape, 5-17 flowers in clusters, each flower 9-12 mm long pink purple.

Astragalus atratus (Camas milkvetch) has tall slender stems 1-3 dm, leaves are 4-15 cm with 5-17 linear leaflets per leaf 3-10 mm long and less than 1.5 mm wide, white flowers with purple ting are 8-9 mm.

Astragalus curvicaupus (Curvepod milkvetch) is a perennial with stout stems 1.5-4 dm tall, covered with grayish hairs, leaves are 2.5-9 cm long with 7-21 leaflets each 3-23 mm long, tips notched, 5-35 flowers in a cluster, flowers with white to pale yellow petals.

Astragalus geyeri (Geyer's milkvetch) is an annual 6-27 cm long from a slender taproot, leaves 2-10.5 cm long with 3-13 leaflets per leaf 3-17 mm long and 1-5.2 mm wide, linear to oblong in shape, hairy on the underside and hairy to glabrous above, 2-8 flowers in clusters, each flower 5-7.6 mm long pale purple to pink.

Astragalus iodanthus (Humboldt River milkvetch) is a perennial 8-35 cm long from a woody base, leaves 2-8 cm long with 7-21 leaflets per leaf 3-18 mm long and 2-12 mm wide and elliptically shaped, 7-17 flowers in clusters, each flower 12-15.5 mm long pink purple.

Astragalus malacus (Shaggy milkvetch) is a perennial with stems 1-4 dm tall, covered with hairs 1.5-2.5 mm long, leaves 4-15 cm long with 7-21 leaflets per leaf 5-20 mm long and elliptical in shape, 9-35 flowers in clusters with reddish violet petals.

Astragalus obscurus (Arcane milkvetch) is a perennial with branched or tufted stems less than 5 cm long, slightly covered with short stiff hairs, leaves are 2.5-10 cm long and divided into 5-15 leaflets 2-15 mm long narrowly to widely elliptic in shape, 5-15 flowers in clusters with petals dirty white colored and maybe tinged with purple.

Astragalus terminalis (Railhead milkvetch) is a perennial with many stems 5-30 cm tall, leaves are 5-20 cm long with 13-21 oblong leaflets, covered with gray hairs, flowers in clusters of 10-30, each flower white and 12-16 mm long.

Lupinus caudatus

Tailcup Lupine



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Plant Characteristics: Perennial, 21-80 cm tall

Flowers: Peduncles 1-6.5 cm long ending with racemes made up of 10-57 flowers, 8-12.5 mm long and blue purple to less commonly white.

Leaves: Mainly on the stems, petioles 1-12 cm long with 5-9 leaflets 10-45 mm long and 2-14 cm wide, oblanceolate to elliptic, soft long hairs on both sides

Fruit: Pods that are laterally compressed

Where Found: Sagebrush to ponderosa pine

Notes:

Lupinus leucophyllus

Velvet Lupine



Christopher Christie

Plant Characteristics: Perennial, 30-70 cm tall from a woody base, gray-woolly

Flowers: Lilac to pale lavender racemes 10-20 cm tall with 22-70 that are 10-15 mm long each

Leaves: Mostly on stems and alternate, palmately compound with gray-hairs, 7-10 narrow leaflets 3-5 cm long and 3-13 mm wide, very hairy on both surfaces, leaves are slightly folded

Fruit: Pods laterally compressed

Where Found: Sage-steppe and dry foothills to ponderosa pine

Notes:

Other *Lupinus* species in the park:

Lupinus arbustus (Spurred lupine) is a perennial, 26-60 cm tall from a woody base, leaves scattered along stems, leaves are divided into 7-13 leaflets 24-50 mm long and 3-10 mm wide, hairy on both surfaces, flowers in elongated clusters of 12-46, each flower 10-14 mm long and range from white, yellow, or blue purple, spur of each flower 1.5-2.5 mm long.

Lupinus lepidus (Prairie lupine) is a perennial 2.5-40 cm tall from a woody base, leaves are mainly basal divided into 5-9 leaflets measuring 3-40 mm long and 1.5-9 mm wide, may be flat or folded, flowers in elongated clusters of 12-85, each flower 7-14 mm long and range from blue-purple to white.

Lupinus sericeus (Silky lupine) is 3-12 dm tall, leaflets (5-9) 7-78 mm long and 2-15 mm wide and flat, may be covered with hairs or not, flowers blue, purple, or white 10-16 mm long with 14-70 per raceme.

Medicago sativa

Alfalfa



Heidi Albano

Plant Characteristics: Perennial, 4-12 dm long or more, ascending to erect

Flowers: 6-25 flowers in raceme 10-35 mm long or more, flowers 6-10 mm long ranging from blue, lavender, pink, purple, or white, tube 1.5-2.5 mm long

Leaves: Leaflets elliptic to oblanceolate, 8-40 mm long and 2-15 mm wide

Fruit: Pods spirally coiled with several seeds

Where Found: Found throughout middle to low elevations

Notes:

Other *Medicago* species in park:

Medicago lupulina (Black medic) is an annual with prostrate stems 10-40 cm long, leaflets 4-15 mm long and 2-12 mm wide, racemes with 6-25 yellow flowers 2-3 mm long.

Psoralidium lanceolatum

Dune Scurfpea



Jed and Bonnie McClellan © California Academy of Sciences

Plant Characteristics: Perennial, 1.5-6.8 dm tall from rhizomes forming clumps

Flowers: Racemes with 5-41 flowers 1.2-17 cm long, bracts 1.3-2.8 mm long, flowers 4.8-6.3 mm long, can be blue, white, or bi-colored, tube 1.3-2 mm long

Leaves: Petioles 0.8-3 cm long, 3 leaflets 14-50 mm long and 0.5-9 mm wide, oblanceolate, yellowish green

Fruit: Pods 1 seeded and conspicuously glandular

Where Found: Sandy sites throughout sagebrush and juniper areas

Notes:

Other genera of this family in the park include *Glycyrrhiza*, *Melilotus*, *Oxytropis*, and *Trifolium*.

Glycyrrhiza lepidota (Wild licorice) is a perennial that is 4-12 dm tall, from a deep root, with leaves 8-19 cm long with 13-19 leaflets per leaf, each 8-53 mm long and 3-15 mm wide and lanceolate, and with flowers in groups of 20-50, each 9.1-13 mm long and white to cream.

Melilotus alba (White sweetclover) is an annual or biennial clover with stems 5-15 dm tall and erect, leaves divided into leaflets that are elliptic and 8-35 mm long x 1-15 mm wide, flowers grouped into clusters of 38-115, each flower 4-5.5 mm long and white.

Melilotus officinalis (Yellow sweetclover) is an annual or biennial clover with stems 5-15 dm tall and erect, leaves divided into leaflets that are elliptical and 8-38 mm long x 3-16 mm wide, flowers in 1.8-11 cm long groups of 20-65, each flower 4.5-6 mm long and yellow.

Oxytropis lagopus (Hare's foot locoweed) is a perennial with leaves divided into leaflets, less than 15 sub-opposite to scattered leaflets per leaf, each seldom larger than 15 mm, and with flowers in clusters of 4 to many, each flower purple or reddish-purple.

Trifolium gymnocarpon (Hollyleaf clover) is a clover that is 4-16 cm tall from a woody base and taproot, with leaves divided into 3-5 leaflets, 6-23 mm long and 2-10 mm wide, oval in shape, and with flower heads 12-18 mm wide and terminal, each with 6-15 flowers with pink to purple petals and 8.5-11 mm long.

Trifolium hybridum (Alsike clover) is a clover that is 15-70 cm tall from a woody base and taproot, with leaves divided into 3 leaflets that are 5-38 mm long and 3-28 mm wide and oval, and with flower heads 12-25 mm wide and terminal at the end of the stems, each with many flowers with petals white or reddish and 5-9 mm long.

Fumariaceae

General Family Characteristics: Leaves much-compounded; flowers mostly showy and bisexual; sepals 2; petals 4 in 2 pairs; stamens 6; ovary superior and 1-celled with 2-parietal placentation; fruit a 1-seeded nut or several-seeded capsule

Dicentra uniflora

Steershead

Plant Characteristics: Perennial from tuberous roots; leafless stem bearing flower, 4-8 cm long

Flowers: Solitary, corolla white to pinkish, outer petals widely spreading and slightly curved, inner petals generally purplish-tipped, 12-15 mm, sepals around 4 mm long

Leaves: Basal, divided into threes

Fruit: Capsules elongated with several seeds

Where Found: Well-drained soil, foothills to subalpine slopes.

Grossulariaceae

General Family Characteristics: Leaves alternate simple or palmately lobed; flowers in somewhat racemes; sepals 5 (4-6); petals and stamens 5(4-6); ovary inferior and 1-celled with 2-parietal placentation; fruit a several-seeded berry.

Ribes aureum

Golden Currant



Gary Monroe

Plant Characteristics: Deciduous shrub, 1-3 m tall and numerous branching; flowering from May to July

Flowers: Yellow, tube up to 5 mm long, hanging in small cluster of 5-18 flowers; extremely fragrant

Leaves: Alternate and ovate, deeply 3-lobed and bluntly serrate, 2-5 cm wide

Fruit: Orange berries

Where Found: Moist areas in sage-steppe and ponderosa pine forests

Notes: *Ribes aureum* and *Ribes cereum* are hard to distinguish when not in flower or fruit.

Ribes cereum

Sqaw or Wax current



Huntly Lab

Plant Characteristics: Deciduous shrub, 0.5-1.5 m tall and numerous branches; flowering from May to July

Flowers: Usually white with a ting of pink or green, tube about 6-8 mm long, hanging in a small cluster of 1-8, usually covered with sticky glandular hairs

Leaves: Alternate, 1-4 cm wide, fan-shaped and coarsely round-toothed, with 3-5 shallow palmate lobes

Fruit: Red berries, 6-7 mm across

Where Found: Dry slopes

Notes: This shrub usually is found in areas where water accumulates, such as at the edges of the lava flows.

Hydrophyllaceae

General Family Characteristics: Leaves alternate to sometimes partly or wholly opposite; flowers bisexual and regular, generally 5-merous; ovary superior; flowers in variously modified cymes

Phacelia hastata

Silverleaf Phacelia



Steve Matson

Plant Characteristics: Perennial, with several stems from taproots, 20-50 cm tall, covered with silvery hairs; low lying and tufted; flowering from May to July

Flowers: Whitish to lavender, 4-7 mm across, funnel-shaped in compact clusters, stamens (5) longer than petals

Leaves: Basal and alternate, 5-10 cm long, elliptic, deeply veined

Fruit: Capsule with 2 chambers, 2-many seeds per capsule

Where Found: Dry, open sites, often on disturbed soil

Notes:

Other *Phacelia* species in park:

Phacelia glandulifera (Sticky phacelia) is generally glandular and has sub-bipinnatifid leaves and a corolla 6-5-12 mm long.

Phacelia heterophylla (Verileaf phacelia) is 2-6 dm tall, with simple stems, very hairy but not silvery, and with a dirty white to purplish corolla.

Phacelia incana (Hoary phacelia) is an annual, 5-15 cm tall, with branching at the base, leaves , mostly on the stems, flowers in flat clusters, white to pale lavender, and 3.5-4.5 mm long. The entire plant is glandular, with long soft hairs.

Phacelia inconspicua (Obscure phacelia) is an erect-stemmed annual, 0.5-2 dm tall, branching from the base; flowers are white; plant hairy but not glandular; plant is known from only 5 areas in North America. If discovered, report its location to the Park Service.

Phacelia linearis (Linearleaf phacelia) is also an annual, 1-5 dm tall, erect, and branched, with dense hairs; flowers in flat dense clusters from the leaf axils; corolla bluish to purple or white and showy, 8-10 mm long and 8-17 mm wide; leaves basal and on the stems, linear.

Other genera of this family in the park include *Hydrophyllum*, *Nama*, and *Nemophila*.

Hydrophyllum capitatum (Ballhead waterleaf) is 1-5 dm high from short rhizomes, the leaves pinnately compound and divided 5-7 times with blades 2.5-10 cm long and 2-13 cm wide, and flowers in clusters with blue, purplish, or white corollas, 5-9 mm long.

Nama densum (Mat nama) is an annual that is dichotomously branched, -10 cm across, with leaves 0.4-3 cm long and 1-5 mm wide, blanceolate shaped and entire, flowers solitary and 3.8- mm long and 1-3 mm wide, with the corolla funnel forming, 3-7.2 mm long and white to lavender.

Nemophila breviflora (Basin nemophila) has weak stems, 0.5-2 dm long, leaves alternate and pinnately divided, 0.7-3 cm long x 1.5-3.9 cm wide, white or purplish corollas, narrowly bell-shaped and 1.5-2.9 mm wide.

Lamiaceae

General Family Characteristics: Leaves usually opposite; square stems; sepals usually 5; petals usually 5; stamens 4; carpels 2; ovary superior with axile placentation and 2 ovules per carpel; fruit a drupe with 1-4 pits, an indehiscent, 4-seeded pod, or a schizocarp splitting into 4 nutlets or 4 drupelets. Three genera of this family are found in the park

Agastache, *Marrubium*, and *Monardella*

Agastache urticifolia (Horsemint) is 6-15 dm tall, with leaves 3.5-8 cm long and ovate, the upper portion of the leaf hairless and the lower somewhat hairy and paler than the upper, with flowers are in clusters 4-15 cm long and 2-3 cm thick, the corolla white, rose, or violet with a tube ca. 8-13 mm long and an upper lip 1-1.5 mm long.

Marrubium vulgare (Horehound) is 2-10 dm tall, stout, and woolly white, the leaves 1-5 cm long and oval shaped, and with flowers in dense clusters and whitish.

Monardella odoratissima (Mountain monardella) is a clump-forming plant with woody stems 2-4 dm tall, leaves 2-3 cm long and narrow to oblong, and corolla pale purple to rose and about 15 mm long.

Liliaceae

General Family Characteristics: Leaves alternate and spiral or whorled along stem or in a basal rosette with parallel venation; flowers bisexual and radial to slightly bilateral; tepals 6; stamens 6; carpels 3; ovary superior with axile placentation

Allium acuminatum

Tapertip Onion



Huntly Lab

Plant Characteristics: Plants generally smell like an onion; stem between 1-4 dm tall, small egg-shaped non-fibrous bulb root.

Flowers: Made up of several commonly-purple tepals, generally 10-12 mm in length, and lanceolate <<shape definition goes in glossary>>, gradually forming a sharp point at the end, becoming keeled; usually in an umbel

Leaves: Narrow and linear basal leaves, ca. 3-4 per plant, shorter than the stem

Fruit: Capsule often crested, with 3-6 seeds

Where Found: Dry places

Notes: Before the tepals are visible, this species is hard to distinguish from *Allium textile*, which has white tepals and only 2 leaves. When tepals are not available to compare., the species can be distinguished by their bulbs.

Allium textile

Textile Onion

Unable to Locate Photo

Plant Characteristics: Perennial, with odor of onions; bulbs 1-2.5 cm thick and about as long, buried 3-13 cm below ground; flowering stems 3-25 cm tall

Flowers: 5-45 white to pale pink flowers per umbel; typically with 3 bracts

Leaves: 2-4 per flowering stem, may be concave or convex, about 1-5 mm thick and overall shorter than the flowering stem.

Fruit: Capsules with elevated ridges towards the base of the flower

Where Found: Sagebrush to juniper communities

Notes:

Other *Allium* species in the park:

Allium geyeri (Geyer's onion) is a perennial, with bulbs 0.7-2 cm thick and about as long, 2-3 leaves per flowering stem that are shorter than the stem and 1-5 mm wide and may have a concave or convex shape; and flowering stems 15-50 cm tall, with white to pinkish flowers in umbels of 5-37.

Allium nevadense (Nevada onion) is a perennial, with bulbs 0.8-1.5 cm thick and about as long; leaves solitary and longer than the flowering stem, often coiled, and 2-4 mm thick; and flowering stems 2-10 cm tall with rose to white flowers in groups of 3-25.

Allium parvum (Small onion) is a perennial, 1.5-4 cm tall, with bulbs 1.2-2.5 cm thick and about as long; 1 to 2 leaves per stem that are flat, 2-5 mm wide, longer than the stem, and curved; and 3-15 white, pink, or purple flowers in umbels, each flower with a deep purple mid-vein.

Allium tolmiei (Tolmie's onion) has a flower stem 0.5-2.5 dm tall, leaves mostly thick, flat, and often curved, and pink flowers in large umbels.

Calochortus nuttallii

Sego Lily



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Plant Characteristics: Erect, few-branched stem, 15-45 cm tall; flowers in May-July

Flowers: White and bell-shaped; may be 1-4 flowers per plant in a cluster; each flower 2.5-5 cm wide; each petal fan-shaped, yellow towards the base, and marked with a purple or reddish brown mark by a gland above the yellow base; the rest of the petal is white

Leaves: Narrow and usually rolled, 5-10 cm long

Fruit: 3-angled capsule

Where Found: Sagebrush steppe to open pine forest

Notes:

Other *Calochortus* species in park:

Calochortus bruneaunis (Bruneau mariposa lily) is 12-40 cm tall, with 2 or 3 alternate simple leaves, 1 or 2 flowers, and whitish to pale lavender petals, 2-3 cm long.

Calochortus eurycarpus (Bigpod mariposa lily) and ***Calochortus nitidus*** (Broadfruit mariposa lily) are similar except for the petals. *C. eurycarpus* has 2.5-5 cm long white to very pale lilac petals, with a large circular purple spot, and *C. nitidus* has 4-4.5 cm long petals that are pale to deep lavender, with a crescent-shaped dark purple spot. Both have basal leaves ca. 5-15 mm wide and as long as the flower stem.

Calochortus macrocarpus (Greenband mariposa lily) has sepals that are longer than the petals, which distinguishes it from the other *Calochortus* species. Petals are 4-7 cm and are white to deep lavender; leaves are narrow and basal.

Fritillaria atropurpurea

Leopard or Spotted Lily



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Plant Characteristics: Perennial and erect, 1.2-4.5 dm tall, bulbs 2-15 cm below-ground

Flowers: 1-7 per plant, on downward curved flower stalks; brown and yellow corolla, 10-25 mm long and ovate to elliptic bell-shaped.

Leaves: Beginning 2-25 cm above ground, numerous and linear, 3-12 cm long and 1.5-7 mm wide

Fruit: Capsules that are barrel-shaped, 10-22 mm long and about as broad, with 6 ridges

Where Found: Sagebrush to juniper areas

Notes:

Other *Fritillaria* species in the park:

Fritillaria pudica (Yellow fritillary) is 6-15 cm tall, with leaves at ground level. Leaves are linear, 3-15 cm long and 2-14 mm wide, and flowers are yellow, bell-shaped, and solitary. *F. pudica* blooms very early in the spring.

Zigadenus venenosus

Meadow Deathcamas



Huntly Lab

Plant Characteristics: Perennial, 20-50 cm tall

Flowers: White to cream dense clusters 1.5 dm long or less, sepals (6) 4-5 mm long

Leaves: Very stiff and grass like, mainly basal, 10-30 cm long and 3-6 mm wide, they are keeled at the tip

Fruit: Capsules 8-15 mm long

Where Found: Sagebrush steppe to mountain meadows

Notes: *Zigadenus paniculatus* (Foothill deathcamas) is 2-7 dm tall, with leaves on the stem below the middle, leaves 1-3.5 dm long and 3-13 mm wide, and white to cream flowers that are in dense clusters 1-3 dm long. The main difference between *Z. paniculatus* and *Z. venenosus* is the placement of the leaves.

Another genus found in this family is *Camassia*.

Camassia quamash (Camas) is an erect plant, 3-7 dm tall, with 3-6 flat leaves at the stem base, each 1-4 dm long and 0.6-2 cm wide. The flowers are blue or white and are in clusters 0.8-2.5 dm long; segment of the flower is 1.5-3 cm long.

Linaceae

General Family Characteristics: Leaves alternate or opposite; flowers complete and regular; sepals 5; petals 5; stamens 5 to 10 or more; pistils 2-4; ovary superior; fruits a capsule

Linum perenne

Blue Flax

Unable to locate photo

Plant Characteristics: Perennial from stout taproot, 15-80 cm tall

Flowers: Flat or round-topped clusters; petals blue with white to yellowish base and 10-23 mm long; sepals 3.5-6 mm long

Leaves: Alternate and simple, 4-30 mm long and 0.5-4 mm wide, linear to oblong

Fruit: Capsule ovoid, 6-8 mm long

Where Found: Prairies to alpine ridges, generally on dry, well drained soil

Notes:

Loasaceae

General Family Characteristics: Leaves alternate to opposite; flowers solitary to cymose, regular, and complete; calyx lobes 5; petals 5; stamens numerous; ovary inferior; fruit a capsule

Mentzelia albicaulis

Whitestem Blazingstar



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Plant Characteristics: Annual, 1-4 dm tall with simple or branched white or greenish white stems, mostly erect

Flowers: 1-3 terminal yellow flowers, each with 5 egg-shaped petals, 5-20 mm long

Leaves: Lower oblanceolate to linear, 3-10 cm long, entire to pinnatifid; upper lanceolate or linear, with the base sometimes clasping the stem, may be lobed or pinnatifid

Fruit: Capsule cylindrical and tapering near the base, 10-17 mm long and 2-3 mm wide

Where Found: Warm areas such as sagebrush or grasslands

Notes:

Other *Mentzelia* species in park:

Mentzelia dispersa (Scattered blazingstar) is 1-3 dm tall, with oblanceolate or linear leaves, 2-8.3 cm long and 9-20 mm wide, entire and somewhat lobed and petals 1-3 mm long and egg-shaped, so flowers are not as showy as in *M. albicaulis*.

Mentzelia laevicaulis (Smothstem blazingstar) is 3-10 dm tall, the largest of the three species, with leaves oblanceolate and coarsely toothed, 2-15 cm long, and petals 4.5-8.2 cm long.

Malvaceae

General Family Characteristics: Leaves usually alternate; flowers bisexual or unisexual; sepals usually 5, petals usually 5, stamens 5 to numerous, carpels 2 to many; ovary superior, placentation usually axile, ovules 1 to numerous in each locule; fruit usually a loculicidal capsule, schizocarp, nut, indehiscent pod, aggregate of follicles, drupe, or berry.

Sphaeralcea munroana

Munroe's Globemallow



Stephen Dowlan

Plant Characteristics: Perennial from taproots, 1.8-7 dm tall, with several stems; yellowish green to somewhat grayish

Flowers: More than one per node, with petals 8-15 mm long and orange, 10-13 carpels 2.5-3 mm tall

Leaves: Alternate, 1-6 cm long and 0.8-6 cm wide, ovate to roundish, usually 3-5 lobed and merely toothed

Fruit: Schizocarp with 1-2 seeds per carpel

Where Found: Mixed desert shrub or more commonly in sagebrush and mountain brush communities

Onagraceae

General Family Characteristics: Leaves alternate and spiral, opposite, or whorled; flowers usually bisexual, radial or bilateral; sepals (2) 4 (7); petals (2) 4 (7); stamens (4) 8; carpels usually 4; ovary inferior; ovules 1-many in each locule; fruit a loculicidal capsule.

Gayophytum diffusum

Spreading Groundsmoke



Thomas Stoughton

Plant Characteristics: Annual from taproot; erect plants ranging from 1-5 dm tall

Flowers: White petals, 3-6 mm long, and sepals, 2.5-5 mm long, forming from 3-11 mm long pedicels

Leaves: Alternate, 8-50 mm long and 1-4 mm wide, linear

Fruit: Capsule 5-12 mm long and 0.8-1 mm thick with 3-18 seeds

Where Found: Sagebrush and mountain brush communities

Notes: *Gayophytum decipiens* (Deceptive groundsmoke) is smaller (5-50 cm tall) than *G. diffusum*, with less conspicuous flowers. *Gayophytum ramosissimum* (Muchbranched groundsmoke) is the smallest of the three, 5-30 cm tall, with petals measuring 1.3-1.8 mm long.

Oenothera caespitosa

Tufted Evening-primrose



Huntly Lab

Plant Characteristics: Perennial; low to the ground with very short stems or may be without stems; roots are thick and woody; flowering from May to August

Flowers: White, turning pink with age; 4-6 cm across and cup-shaped; petals heart-shaped, sepals bent backwards

Leaves: Basal, lance-shaped, 10-25 cm x 1-2.5 cm; may be toothed or pinnately lobed

Fruit: Woody capsules, 2-3 cm long with 4 bumpy angles

Where Found: Dry, open sites, often on clay flats and roadsides

Notes:

Other *Oenothera* species in the park:

Oenothera elata (Hooker's evening-primrose) is biennial, with stems 3-15 dm tall and yellow flowers.

Oenothera pallida (Pale evening-primrose) has stems 1-7 dm tall and white flowers fading to cream or lavender with age.

Other genera of this family in the park include *Camissonia* and *Epilobium*.

Camissonia andina (Blackfoot River evening-primrose) is annual from a taproot, with stems that may be branched, 1-8 cm tall and 2-15 cm wide; leaves clustered near the stem ends, each 0.6-3 cm long and 1-3 mm wide, linear and entire; and solitary flowers with yellow petals, 1-2.5 mm long.

Camissonia breviflora (Fewflower evening-primrose) is perennial from a taproot and a woody base, with all leaves basal, 2-14 cm long and 3-20 mm wide, mostly lobed; flowers numerous and clustered, opening mainly in the morning, with tubes 5-15 mm long and yellow petals 5-8.5 mm long.

Camissonia minor (Small evening-primrose) is an annual from a taproot, with stems usually 2-28 cm tall, branching near the base, leaves 0.5-4.8 cm long and 0.2-1.5 cm wide, elliptic in shape, and few to many flowers, that have white petals, drying pink, 0.8-1.5 mm long.

Camissonia parvula (Lewis River evening-primrose) is annual from a taproot, with stems 1-18 cm tall that may be branched at the base; leaves mainly above the base, each leaf 5-30 mm long and 0.4-1.2 mm wide, linear and sub-opposite; few to many flowers, with yellow petals, 2.5-4.3 mm long.

Camissonia subacaulis (Diffuseflower evening-primrose) is perennial, from thick taproots, with a woody base; leaves all basal, 2-16 cm long and 3-35 mm wide, entire or slightly lobed; and flowers that open in the morning, with tube 1.5-7 cm long and yellow petals 7-15 mm long.

Epilobium angustifolium (Fireweed) is 5-20 dm tall, with purplish stems, usually simple, glabrous below and commonly hairy above; leaves alternate and elliptic or linear, 5-20 cm long and 0.5-4 cm wide and entire; sepals 7.5-17 mm long and petals 8-20 mm long and pink-purple, pink, or sometimes white.

Epilobium brachycarpum (Autumn willowherb) is annual from taproots, with 3-7 dm tall stems that may be simple or branched; leaves mostly alternate, 0.8-7 cm long and 1-9 mm wide, linear to elliptic, folded, and entire or toothed; flowers few to many in terminal clusters, 5-20 mm long, with sepals 1-4 mm long and white or pink petals 3-8 mm long.

Epilobium ciliatum (Fringed willowherb) is a perennial with stems 2-12 dm tall that may be simple or branched; leaves opposite and some alternate, lanceolate, and somewhat entire; flowers numerous and born in terminal clusters, with sepals 2-6 mm long and white or pink petals 2-5 mm long.

Orobanchaceae

General Family Characteristics: Leaves alternate and spiral or opposite; flowers bisexual and bilateral; sepals usually 5; petals usually 5; stamens 4; carpels 2; ovary superior with axile to parietal placentation; fruit a septicidal to loculicidal capsule. One genus is found in the park.

Orobanche

Broomrape

Two species are found in the park:

Orobanche corymbosa (Flat-top broomrape) is a fleshy yellowish or purplish plant with stems 5-13 cm tall. The plant lacks leaves and has flowers in groups that are 2.5-6 cm long, with pedicels 4-15 mm long, the tube 2-7 mm long, the lobes 9-16 mm long and linear, and the corolla 18-25 mm long and pale purple.

Orobanche fasciculata (Clustered broomrape) is a fleshy purplish or yellowish plant with forked stems, 5-10 cm tall. The plant lacks leaves and has flowers in groups of 3-12 that are erect, with pedicels up to 12 cm long, the tube 15-30 mm long, the lobes 3-5 mm long, rounded, or triangular shaped, and the corolla purple to pinkish or yellow.

Plantaginaceae

General Family Characteristics: Leaves alternate and spiral or opposite; flowers usually bisexual and bilateral; sepals usually 4 or 5; petals usually 5 or occasionally apparently 4; stamens usually 4, sometimes reduced to 2; carpels 2; ovary superior with axile placentation; ovules usually numerous in each locule; fruit usually a septicidal capsule. Only one genus is found in the park.

Plantago patagonica

Woolly Indianwheat

Plantago patagonica is the only species of *Plantago* found in the park. It is an annual that is usually woolly- hairy, has linear leaves that are 1-20 cm long and 2-15 mm wide, and has stems that may be shorter or longer than the leaves. Spikes are dense and cylindrical, 1-10 cm long and 5-8 mm thick, and flowers have petals that are 2 mm long.

Poaceae

General Family Characteristics: Grasses; annual or perennial, with round hollow stems and linear parallel-veined leaves; bracts made up of a lemma and a glume; the lemma is the lower bract and the glume is the upper bract; sheaths enclose the lower portion of the stem

Bromus tectorum

Cheatgrass; Downy Brome



James M. Andre

Plant Characteristics: Annual, solitary or tufted, with stems 0.5-8 dm tall, covered with dense soft hairs

Flowers: 1-8 spikelets per branch, 10-24 mm long, and 3-7 flowers per spikelet, green or purple-tinged to purple; heads bend downward; awn 10-18 mm long

Leaves: 0.5-6 mm wide and flat, usually covered with dense soft hairs, ligule 1-3 mm long

Where Found: Wide-spread throughout sagebrush steppe of western North America

Notes:

Other *Bromus* species in the park:

Bromus inermis (Smooth brome) is perennial, with stems 2-15 dm tall in solitary or loose tufts; leaf blades ca. 2-15 mm wide and flat; 1-5 spikelets per branch, 15-40 mm long and drooping; 5-13 flowers per spikelet; awn-less or with awns 1-3 mm long.

Bromus japonicas (Japanese brome) is annual, with solitary or small tufts of flowering stems, 2-8 dm tall; leaf blades 1-7 mm wide and flat, usually covered with soft hairs, the ligule 0.5-1.5 mm long; 1-2 spikelets per branch, 12-30 mm long with 5-18 flowers per spikelet.

Bromus riparius (Meadow brome) is annual, with stems 1-6 dm tall and erect, solitary or in small tufts; leaf blades 1-5 mm wide and flat; ligule 1-4 mm long; spikelets compressed, 18-30 mm long, with 3-8 flowers per spikelet; awns 10-24 mm long.

Bromus secalinus (Chess) is annual or biennial with solitary or tufts of stems, 2-12 dm tall; leaf blades are 1-7 mm wide and flat, ligule 0.5-4 mm long; 1-2 spikelets per branch, 12-40 mm long, with 4-12 flowers per spikelet; rarely short awned.

Elymus cinereus

Basin Wildrye



Larry Blakely

Plant Characteristics: Large perennial, with stems 7-25 dm tall and densely tufted, forming clumps to 1m or more in diameter

Flowers: Spike very erect, 7-25 cm long and up to 20 mm wide, 3-6 flowered, with glumes 5-14 mm long and ca. 0.5 mm wide and awns up to 5 mm long

Leaves: Blades flat 3-15 mm wide, ligule of lower stem leaves 1.5-7 mm long

Where Found: Sagebrush areas to ponderosa pine

Notes: This large bunch grass is widely distributed in the park. Its leaves are wider than those of other grasses, and the plant becomes very tall.

Elymus elymoides

Bottlebrush Squirreiltail



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Plant Characteristics: Perennial, 0.5-8 dm tall, with stems solitary to densely tufted

Flowers: Spikes 2-15 cm long and at maturity ca. 12 cm wide; spikelets with 2-6 flowers that overlap; awns 2-10 cm long, bristle-like, and bending laterally

Leaves: Blades flat and 1-4 mm wide; ligule less than 0.5 mm long

Where Found: Found in dry to moist sites in sagebrush steppe

Notes: The heads of this grass are distinct when mature. To distinguish this grass before the heads are developed, look closely at the blades, which tend to bend at a 90° angle.

Elymus spicatus

Bluebunch Wheatgrass



Stephen Dowlan

Plant Characteristics: A perennial with densely tufted stems, 3-10 dm tall

Flowers: Spikes 6-20 cm long; spikelets with 5-8 flowers, 10-20 mm long, rarely awned

Leaves: Blades flat and 1-3.5 mm wide; ligule to ca. 1mm long

Where Found: Sagebrush and juniper areas

Notes: This grass is also known as *Agropyron spicatum*. It is abundant throughout the park and is distinguished by presence of leaves from the previous year intertwined with the new growth.

Other *Elymus* species in the park:

Elymus brevifolius (Squirreltail), also known as ***Sitanion hystrix* var. *brevifolium***, is perennial and forms clumps, with stems 3-6 dm tall; leaf blades rather narrow and may be flat or folded; ligules short; spikelets in a terminal spike, 2-6 flowered, 4 glumes per flower, and long awns bending laterally.

Elymus junceus (Russian wildrye) is perennial, with densely tufted stems 4-11 dm tall; leaf blades flat and 1-5 mm wide; ligule 0.2-0.8 mm long; spike 3-16 cm long and 5-17 mm wide; spikelets 7-10 mm long and strongly overlapping, 2 flowers per spikelet; glumes 5-9 mm long and ca. 0.5 mm wide near the base; and awn ca. 3 mm long.

Elymus wawawaiensis (Snake River wheatgrass) was once considered a variety of ***Elymus lanceolatus*** (Streambank wheatgrass), and is a perennial with erect stems, 3-13 dm tall, that may be solitary or tufted; leaf blades occasionally flat, 1-3.5 mm wide, usually very stiff; ligule around 1 mm long; spike stiffly erect, 6-22 cm long; spikelets with 3-12 flowers, 7-20 mm long, closely overlapping; glumes 4-10 mm long and 1-2 mm wide.

Elymus smithii (Western wheatgrass) is perennial, with stems 2-11 dm tall leaf blades firm and flat, 1-5 mm wide; ligule ca. 1 mm long; spike stiffly erect and 6-20 cm long; spikelets with 5-12 flowers, 13-26 mm long; glumes firm 8-15 mm long and 1.3-2 mm wide; awn ca. 5 mm long.

Elymus flavescens (Yellow wildrye), also known as ***Leymus flavescens***, is perennial and grows in clumps, with stems 6-10 dm tall; leaf blades 3-5 mm wide and ligule 0.5-1.5 mm long; panicles 5-15 mm long; spikelets consisting of 5-9 flowers, 12-25 mm long; glumes 10-15 mm long.

Elymus hispidus (Intermediate wheatgrass) is perennial, 4-15 dm tall, with dark green stems and flat leaf blades, 2-10 mm wide; ligule up to 0.5 mm long; spike erect and 6-20 cm long, with spikelets solitary and compressed, 9-20 mm long, with 3-8 flowers; glumes thickened and hard, 4-9 mm long and 2-3 mm wide; awn 1-10 mm long.

Festuca idahoensis

Idaho Fescue



Stephen Dowlan

Plant Characteristics: Perennial, stems 0.2-11 dm tall, with large clumps of basal leaves

Flowers: Panicles generally contracted; spikelets closely flowered, with 2-7 flowers, often less than 10 mm long and reddish or purple tinged; glumes 1.5-5.5 mm long; awns 2-5 mm long

Leaves: Blades generally folded and less than 1.5 mm wide and more than 10 cm long

Where Found: Often the dominant grass in sagebrush steppe.

Notes: Resembles *Agropyron spicatum* but is taller and forms larger clumps. *Festuca idahoensis*, *Festuca ovina* (Sheep fescue), and *Festuca brachyphylla* (Alpine fescue) are sometimes grouped together.

Other *Festuca* species in the park:

Festuca bromoides (Brome fescue) is an annual with solitary to small tufts of stems, 0.5-6 dm tall, leaf blades 0.5-2.5 mm wide, ligule 0.2-0.6 mm long, panicle narrow 1-15 cm long, spikelets 2-4 flowered and 6.5-11.5 mm long, glumes 2.5-7 mm long, and awns 3-12 mm long.

Festuca octoflora (Sixweeks fescue) is an annual with solitary to small tufts of stems, 0.2-3 dm tall, leaf blades ca. 1.3 mm wide, ligule 0.2-1 cm long, panicle 1-10 cm long, spikelets 5-15 flowered, with glumes 2-7 mm long, and awn 0.5-5 mm long.

Festuca pacifica (Pacific fescue), also known as ***Festuca microstachys***, is an annual, with solitary stems or small tufts, 0.5-4 dm tall, leaf blades rarely as much as 1.5 mm wide, ligule 0.2-1 mm long, panicles narrow but spreading at maturity and 3-13 cm long, spikelets 1-6 flowered, glumes 1.7-7.5 mm long, and awn 6-20 mm long.

Festuca scabrella (Rough fescue) is a perennial that produces thick mats, with stems 6-10 dm tall, leaf blades generally stiff and folded, panicles generally compressed, lemmas ca. 8 mm long, and awns less than 5 mm long or may be awn-less.

Festuca scabrella (Rough fescue) is a perennial producing thick mats with stems 6-10 dm tall, leaf blades generally stiff and folded, panicle generally compressed, lemmas around 8 mm long and may be awn-less or awn is less than 5 mm long.

Koeleria macrantha



Junegrass



Stephen Dowlan

Plant Characteristics: Perennial bunch grass, 20-60 cm tall, from fibrous roots; usually hairy near top and the base; grayish green in color; flowering from May to June

Flowers: Pale green to purplish, in clusters 3-16 cm long and 0.5-2 mm wide; each spikelet has 2-4 flowers, ca. 4-6 mm long and flat, with awns ca. 1 mm long

Leaves: Mainly basal and very stiff, usually folded or rolled with prow shaped tips, 1-3 mm wide, ligules 0.5-1 mm long and fringed

Where Found: Dry open sites throughout sagebrush steppe

Notes: The head of this grass, which is dense and bushy in appearance, is distinctive.

Poa bulbosa

Bulbous Bluegrass



Gary Monroe

Plant Characteristics: Short-lived perennial, stems solitary to densely tufted, 1-5 dm tall and erect, arising from pear-shaped bulbs about 1 cm long

Flowers: Panicle narrow and 2-13 cm long, compact or open at flowering; spikelets in dense clusters, 3-7 mm long, with 3-6 florets opening to a single purple bulblet; glumes 2-4 mm long and sharply keeled, awn-less

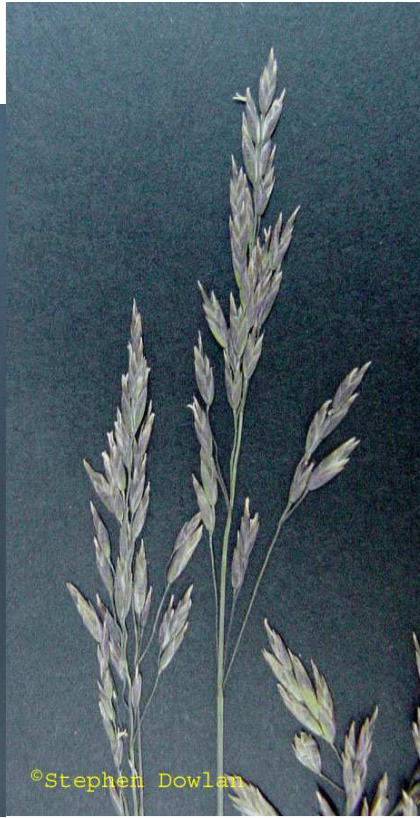
Leaves: Blades 0.5-3 mm wide and flat, may be prow-shaped at the tips, the blades on the upper stems 2-10 cm long; ligule 1.5-5 mm long

Where Found: Moderately dry to moist places in sagebrush

Notes:

Poa secunda

Sandberg's Bluegrass



Stephen Dowlan

Plant Characteristics: A tufted perennial that is yellow to dark green, stems 1-12 dm tall

Flowers: Panicle 2-27 cm long and loosely compact, spikelets compressed and narrow 4-12 mm long with 3-6 purple tinged flowers, awn-less

Leaves: Sheath open at least $\frac{3}{4}$ the length; blades 0.4-3.5 mm wide and tapering to a prow-like tip, fold upon drying; blades on the upper stem leaves 0.2-22 cm long; ligule 0.5-7 mm long

Where Found: Often a dominant grass throughout sagebrush steppe areas

Notes: *Poa nevadensis*, *Poa juncifolia*, and *Poa ampla* often are grouped with *Poa secunda*.

The NPS groups these species, which are difficult to distinguish, into a *Poa secunda* complex. Species identification usually requires examination with a dissecting microscope. An easy way to distinguish *Poa* from other grass species is to look for the awn; *Poa* is awn-less, *Poa* species also typically have characteristic boat-shaped leaf tips

Other *Poa* species in the park:

Poa cusickii (Cusick's bluegrass) is a perennial with stems 1.5-5 dm tall, basal leaves are thread-like and up to 1 mm wide and less than 20 cm long, ligules 1-6 mm long, lemmas are covered with cobwebby hairs at the base 4.5-7 mm long.

Poa fendleriana (Fendler's bluegrass) is a tufted perennial with stems 1-6 dm tall, leaf blades 1-3 mm wide and flat and appearing thread like, prow-shaped at the tips, blades on the upper portion of the stems around 7 cm long, ligule 0.5-12 mm long, panicle 2-10 cm long and densely flowered, spikelets compressed 4-12 mm long and 2-4 mm wide, often purple tinged or pinkish, 3-8 flowered, awn-less.

Poa pratensis (Kentucky bluegrass) is a highly rhizomatous perennial, 4-10 dm tall and smooth; leaf blades are 1-6 mm wide and flat or somewhat folded, prow-shaped at the tips, blades of the upper stems 1-12 cm long, ligule 1-2.5 mm long; panicle is narrow and compact, 2-16 cm long, with spikelets 3-6.5 mm long and usually purple tinged, with 3-6 flowers, glume 1.8-3.5 mm long, lemma 2.5-3.5 mm long.

Poa wheeleri (Wheeler's bluegrass) is also known as ***Poa nervosa***, it is a perennial with loosely or densely tufted stems 3-8 dm tall, leaf blades 1-5 mm wide and 2-10 cm long, may be flat or folded with prow-like tips, ligule 1-3 mm long, panicle narrow 4-13 cm long, spikelets compressed and elliptic shaped 5-10 mm long, 4-6 flowered, glume 2.5-5.2 mm long, lemma 4-6 mm long.

Stipa comata

Needle and Thread



Robert Sivinski

Plant Characteristics: Perennial that is tufted, with stems 3-13 dm tall

Flowers: Panicle 0.7-4 dm long, often drooping; glumes 15-40 mm long; lemma brown and leathery at maturity, 8-17 mm long; awn 60-240 mm long.

Leaves: Blades 1-2 mm wide and flat; ligule 1.5-9 mm long

Where Found: Mainly in sagebrush steppe and juniper habitats

Where Found: Mainly in sagebrush steppe and juniper regions

Notes: The best way to tell if a grass is *Stipa* before the panicle is present is to run your fingers backwards on the leaf blades. The blade will feel very rough to the touch and hard to run your fingers down.

Stipa hymenoides

Indian Ricegrass



James M. Andre

Plant Characteristics: Densely tufted perennial, with stems 2-7 dm tall; old bases of previous years thick around the base of the tufts; branches dichotomously branched, 0.5-4 cm long

Flowers: Panicle open and 5-20 cm long; glumes greenish becoming white, oval-shaped, and 3-6 mm long; awn 3-6 mm long

Leaves: Blades firm and ca. 1 mm wide; ligule 2.5-8 mm long

Where Found: Dry, open sites within sagebrush steppe

Notes: This grass has bulb-like roots that develop in large groups. The best way to tell if a grass is *Stipa* before the panicle is present is to run your fingers backwards on the leaf blades. The blade will feel very rough to the touch and hard to run your fingers down.

Stipa nelsonii

Dore's Needlegrass



Steve Matson

Plant Characteristics: Tufted perennial, with stems 1-20 dm tall

Flowers: Panicle narrow, 0.7-3.6 dm long and 0.5-2 cm wide; glumes purple tinged and 7-13 mm long; awns 20-30 mm long, with the lower segment twisted and covered with hairs ca. 0.04 mm long

Leaves: Blades flat and 0.5-5 mm wide; ligule 0.2-2 mm long

Where Found: Throughout the sagebrush steppe areas

Notes: Before the panicle is present, the best way to tell if a grass is *Stipa* is to run your fingers backwards on the leaf blades. The blade will feel very rough to the touch and it will be hard to run your fingers downward along it.

Stipa thurberiana

Thurber's Needlegrass



Steve Matson

Plant Characteristics: Tufted perennial with slender stems, 1.5-6 dm tall

Flowers: Panicle 0.5-1.5 dm long, with few flowers, each with greenish or purple-tinged glumes, 8-16 mm long, often with hair-like tips; awn is 30-50 mm long

Leaves: Blades with zigzag shape and soft hairs; ligule 2-7 mm long

Where Found: Widespread throughout sagebrush steppe

Notes: The seeds of this species are dispersed by the long awns, which are hairy at their bases. The best way to tell if a grass is *Stipa* before the panicle is present is to run your fingers backwards on the leaf blades. The blade will feel very rough to the touch and hard to run your fingers down.

Other *Stipa* species in the park:

Stipa lemmonii (Lemmon's needlegrass) is a tufted perennial, with stems 3-8 dm tall; leaf blades ,1-2mm wide and flat, with ligule 1-3 mm long; panicle narrow (0.5-1.2 dm long); glumes purple- tinged, 7-11 mm long; awn 10-30 mm long.

Stipa occidentalis (Western needlegrass) is a tufted perennial, with awns more than 20 mm long and lemmas 5-8 mm long.

Stipa pinetorum (Pine needlegrass) is a tufted perennial that forms large circular clumps. Its stems are slender and 1-6 dm tall; leaf blades less than 1 mm wide; ligule 0.1-0.6 mm long; panicle narrow, 0.5-2 dm long; glumes 7-12 mm long and the awn 10.25 mm long.

Stipa richardsonii (Richardson's needlegrass) is a tufted perennial, with stems 4-10 cm tall, ligules barely 0.5 mm long, panicles open, and awns twice-bent and 18-25 mm long.

Stipa webberi (Webber's needlegrass), also known as *Oryzopsis webberi*, has stems 1-3 dm tall, leaf blades less than 3 mm wide with the edges rolled inwards, ligules barely 0.5 mm long, panicles erect, lemmas 6-7 mm long, and glumes 5-9 mm long.

Other genera of this family in the park include *Agropyron*, *Dactylis*, *Eremopyrum*, *Melica*, *Muhlenbergia*, and *Sporobolus*.

Agropyron cristatum (Crested wheatgrass) has been planted to revegetate burned areas. It is a perennial that grows in tufted clumps, 2-10 dm tall, with leaf blades flat and 2-5 mm wide, ligule ca. 1 mm long, spike 2-10 cm long and 5-23 mm wide, spikelets 3-10 flowered and 5-15 mm long, glumes 3-6 mm long, and the awn up to 4 mm long.

Dactylis glomerata (Orchard grass) is a perennial that grows with tufted stems up to 12 dm tall, leaf blades flat or folded and 1.5-11 mm wide, ligules 2.5-11 mm wide, panicles 4-20 cm long, spikelets somewhat purple-tinged, clustered, and 5-9 mm long with 2-5 flowers per spikelet ; glumes 5-6.5 mm long, and the awn-like tip ca. 2 mm long.

Eremopyrum triticeum (Annual wheatgrass) is an annual with solitary or small tufts of stems 4-40 cm tall, leaf blades are flat and soft 1-4 mm wide, ligule 0.2-1 mm long, spike elliptical shaped 0.8-2 cm long and about 1.5 cm wide, spikelets 6-10 mm long including awn tips, glumes 4-7 mm long, awns up to 7 mm long.

Melica bulbosa (Bulbous oniongrass) is a perennial with solitary to small tufts of stems 3-6 dm tall, usually growing from a swollen bulblike root, leaf blades flat and 2-5 mm wide covered with short hairs, ligule 2-5 mm long, panicle 10-16 cm long, spikelets 9-18 mm long; and awnless glumes, 6-13 mm long and purplish.

Muhlenbergia richardsonis (Mat muhly) is a mat-forming perennial with slender stems, 0.5-6 dm tall, branched at the base, leaves mainly on the stems, blades flat and 0.5-1.8 mm wide x 1-5 cm long, ligule 1-3 mm long, panicles 2-7 cm long, spikelets mainly 1-flowered and 1.8-3 mm long including the awn, greenish to dark gray, glumes 0.6-1.5 mm long.

Sporobolus cryptandrus (Sand dropseed) is a perennial with stems 10 dm tall and ca. 5 mm thick at the base, which may be solitary or tufted; leaf blades flat, 1.5-8 mm wide and ca. 3.5 dm long; ligule a dense ring of hairs, 0.4-0.7 mm long; panicle 15-35 cm long and 0.3-0.8 cm wide; spikelets 1.7-3.2 mm long; and rough glumes.

Polemoniaceae

General Family Characteristics: Leaves alternate and spiral, opposite, or whorled; flowers bisexual, radial, usually showy; sepals usually 5; petals usually 5; stamens usually 5; carpels 3; ovary superior with axile placentation; ovules 1 to many in each locule; fruit usually a loculicidal capsule

Eriastrum sparsiflorum

Wilcox's Woollystar



James Andre

Plant Characteristics: Annual that can be simple to much branched, 4-25 cm tall or more

Flowers: 2-5 in a head-like cluster; blue, white, or pinkish corolla, 7-13 mm long

Leaves: Alternate, 0.4-3 cm long, and linear

Fruit: Capsule 3-5 mm long, with 2-4 seeds per locule

Where Found: Dry areas, including sagebrush and juniper

Notes:

Gymnosteris parvula

Smallflower Gymnosteris



Huntly Lab

Plant Characteristics: Annual from slender taproots, 1-5 cm tall

Flowers: Corolla 5-7 mm long and white to yellowish, the tube 2.5-5 mm and lobe 0.7-1.5 mm; bracts 4-13 mm long x 1-5 mm wide and leaf-like

Leaves: Stems naked

Fruit: Capsule 3.5-4.5 mm long

Where Found: Sagebrush grasslands to ponderosa pine areas

Notes: *Gymnosteris nudicaulis* (Largeflower gymnosteris) is also found in dry, open areas, though tends to be in sandier soils; it has a more showy corolla, with tube 6-10 mm long and lobes generally 3-6 mm.

Leptodactylon pungens

Prickly Phlox



Steve Matson

Plant Characteristics: Small branching tap-rooted shrubs with numerous stems, 10-60 cm tall; sweetly aromatic

Flowers: Corolla white, pink, lavender, or salmon with long slender tube and lobes 6-10 mm long; solitary along the stems; closed during the day

Leaves: Numerous, alternate or opposite, sessile, rigid; palmatifid or sometimes pinnatifid, dissected 3-7 times into 5-12 mm long narrow needle like tips

Fruit: Capsule 4-5.5 mm long and usually 3-loculed

Where Found: Rocky slopes at middle and upper elevations

Notes: *Leptodactylon pungens* may be mistaken for *Phlox hoodii* because of the sharpness of the leaves. The main differences between the species are the time of flowering (*L. pungens* flowers at night) and the size of the plant (10-60 cm tall versus less than 10 cm tall).

Leptodactylon watsonii (Watson's prickly phlox) is also similar to *L. pungens*. The two can be distinguished by flower size (lobes 6-10 mm versus 7-15 mm) and growth form (*L. watsonii* is more cushion-like, whereas *L. pungens* is branching).

Microsteris gracilis

Slender Phlox



Huntly Lab

Plant Characteristics: Very small annual, 2-25 cm tall

Flowers: Corolla with a white or yellowish tube and pink to lavender petals that are 5-15 mm long and 2-3 mm across

Leaves: Linear to elliptic, sometimes the lower obovate; 1-5 cm long and 1-8 mm wide; opposite below and alternate above

Fruit: Capsule with 1 seed per locule

Where Found: Dry to moderately moist open places

Notes:

Navarretia breweri

Brewer's Navarretia



Huntly Lab

Plant Characteristics: Small glandular annual, less than 1 dm tall, branching

Flowers: Corolla yellow, 5-8 mm; petal veins divided into three well down in the corolla tube; pinnatifid bracts

Leaves: Very dense and generally pinnatifid or irregularly bipinnatifid leaves

Fruit: Capsule (3-locular) with generally 1-4 seeds per carpel

Where Found: Dry meadows, often in shallow clay soil

Notes: This plant is small and inconspicuous. It is easy to identify by the very sharp linear leaves.

Phlox hoodii

Hood's Phlox



Steve Matson

Plant Characteristics: Perennial, in a compact mat or cushion, from taproots; less than 10 cm tall; woolly hairs give the plant a grayish tint; flowering from April to June

Flowers: Solitary white, pink, or bluish, 10-15 mm wide, with 5 petal lobes ranging from 4-7 mm long at the top of a slender tube

Leaves: Opposite and densely overlapping, very firm and sharp, 4-10 mm long and about 0.5 mm wide

Fruit: Elliptic capsules, splitting along 3 lines, few-seeded

Where Found: Dry, open slopes

Notes: This plant is easy to identify by touch. It spreads along the ground in a mat and is quite painful if you try to grab a handful of the stems. *Phlox aculeata* (Sagebrush phlox) is also a mat-forming plant of the sagebrush steppe ecosystem, but has leaves 10-35 x 0.5-1.5 mm and corolla lobes 7-12 mm long.

Phlox longifolia

Longleaf Phlox



Huntly Lab

Plant Characteristics: Perennial; 10-40 cm tall from a woody base; tap-rooted; flowering from April to July

Flowers: Solitary at the end of stems, with 5 pink or white, 7-15 mm long, petal lobes at the tip of a slender tube

Leaves: Linear opposite, 1.5-8 cm long and 1-2.5 cm wide and joined at the base

Fruit: Few-seeded elliptic capsules, splitting along 3 lines,

Where Found: Dry, rocky, open sites

Notes: These are common throughout the park and flower in the early spring.

Phlox multiflora

Rocky Mountain Phlox

Plant Characteristics: Cushion or mat-like plant, 8-25 cm wide; from a taproot

Flowers: Solitary on terminating branches; corolla tube 10-15 mm long with white, pink, or bluish lobes that are 6-11 mm long

Leaves: Opposite, 8-30 mm long and 1-2 mm wide, linear to triangular

Fruit: Capsule

Where Found: Sagebrush steppe to ponderosa pine forests

Notes: This species of *Phlox* occurs throughout the northern portion of the park and is very similar to *Plox longifolia*. The largest difference is the number of branches. There is more branching on *P. multiflora* creating more flowers.

Other genera of this family in the park include *Collomia* and *Linanthus*.

Collomia linearis (Slenderleaf collomia) is an annual, generally 0.6-5 dm tall, with alternate leaves, 1.2-6 cm long and 3-10 mm wide, elliptic and entire; corollas of the flowers are 8-15 mm long and pink to purplish, forming narrow funnels.

Collomia tenella (Diffuse collomia) is an annual that forms low clumps, with stems 5-15 cm tall and alternate leaves, 1-4 cm long and 1-5 mm wide, linear and entire; the flowers are in clusters of 2 or 3, with pinkish or lavender corollas, 8-14 mm long, creating a narrow funnel.

Linanthus harknessii (Harkness's flaxflower) is a simple to minimally branched plant, 4-25 cm tall, with leaves opposite (or the uppers may be alternate) and simple or may be 3-7 times divided into linear segments that are 4-12 mm long; flowers may be single or in groups, with white to blue corollas, 1.5-3.5 mm long, creating a funnel.

Linanthus septentrionalis (Northern linanthus) is a simple to minimally branched plant, 4-25 cm tall, with opposite leaves that may be entire or 5-7 times divided into linear segments, 3-20 mm long; flowers have corollas that are 2.5-4 mm long.

Polygonaceae

General Family Characteristics: Leaves usually alternate, simple and spiral; flowers usually bisexual and radial; perianth of 6 tepals; stamens usually 5-9; carpels usually 2 or 3; ovary superior; ovule 1; fruit an achene or nutlet

Eriogonum microthecum

Slender Buckwheat



Huntly Lab

Plant Characteristics: Perennial; not mat-forming; generally with a somewhat shrubby base; 1-4 dm tall

Flowers: White to pink, 2-3.2 mm long, in a flat or round topped inflorescence

Leaves: Alternate, 4-35 mm long and 1-7 mm wide, elliptic to linear and hairy on one or both sides

Fruit: Achenes, 2-3 mm long

Where Found: Sagebrush to ponderosa pine areas

Notes:

Eriogonum ovalifolium

Cushion or Dwarf Buckwheat



Huntly Lab

Plant Characteristics: Perennial, 5-15 cm tall, often forming mats 0.5-4 dm across from a woody root system; covered with woolly and silky hairs; flowering from May-August

Flowers: Of a wide variety of colors, including red, purple, yellow, or cream, 3-7 mm long, in an umbel

Leaves: Basal and many, round to somewhat egg-shaped, 2-6 cm long and 1-15 mm wide, covered with white, woolly hairs

Fruit: 3-sided achenes, 2-3 mm long

Where Found: Dry, open sites

Notes:

Eriogonum umbellatum

Sulphur-flower Buckwheat



Huntly Lab

Plant Characteristics: Perennial from taproot; forming mats of basal leaves and woody stalks, 5-40 cm tall and 1-10 dm across, topped with a flowering cluster;; , flowering from June to August

Flowers: Pale yellow and may be tinged pink; tube 2-6 mm long and 1.5-10 mm wide, with lobes 1-6 mm long; entire flower 2.5-10 mm long

Leaves: In basal whorls on a slender stalk, spoon-shaped with the underside grey-woolly and the upper side green; each leaf 1-3 cm long and 2-20 mm wide

Fruit: Smooth 3-angled achenes, 2-5 mm long

Where Found: Dry, often rocky sites

Notes:

Other *Eriogonum* species in the park:

Eriogonum baileyi (Bailey's buckwheat) is an annual, 10-30 cm tall, with all leaves basal, 5-20 mm long and about as broad, oval, and hairy on both sides; flowers in clusters, white to pink and 1.5-2 mm long.

Eriogonum caespitosum (Mat buckwheat) is a mat-forming perennial, spreading 1-4 dm across and from 0.5-10 cm tall with basal leaves that are spatula-shaped, 2-12 mm long and 1.5-5 mm wide and very hairy; yellow to red flowers cluster on stems, with flowers 2.5-10 mm long and 3-5 mm wide.

Eriogonum cernuum (Nodding buckwheat) is an annual, generally 5-45 cm tall, with leaves all basal or on the stem up to 10 cm from the base, very hairy on both sides and oval shaped; white flowers in clusters, each flower 1-2.5 mm long and glabrous.

Eriogonum douglasii (Douglas's buckwheat) is a low matted shrub, 5-15 cm tall, with mostly basal leaves, 5-20 mm long and 1.5-3 mm wide, linear and covered with gray hairs, and a whorl of leaves midway along the stem; 1.5-3 mm wide flower head, consisting of many yellow to cream flowers.

Eriogonum elatum (Alpine golden buckwheat) is a perennial with stems 30-90 cm tall, large leaves in basal clumps, each leaf 8-20 cm long and on a long stem; numerous tiny white flowers in clusters at the tops of long stalks.

Eriogonum heracleoides (Parsnipflower) is a mat-forming perennial, spreading 2-6 dm across, with oblong leaves 2-7 cm long and 3-15 mm wide and very hairy on one or both sides; white, cream, or yellow flowers cluster on stems that range from 1.5-5 dm tall, each stem with a group of whorled leaves near the middle and each flower 4-9 mm long.

Eriogonum mancum (Imperfect buckwheat) is a mat-forming perennial, with cream to strongly pink-tinged flowers in large clusters.

Eriogonum nidularium (Bird's nest buckwheat) is an annual, usually 5-20 cm tall, with all basal leaves, 3-20 mm long and as wide, hairy on one or both sides; yellow to reddish flowers, 1.5-3 mm long and glabrous.

Eriogonum sphaerocephalum (Rock buckwheat) is a branching shrub that spreads 10-70 cm tall, with leaves in whorls at branch tips, each 1-3 cm long and 3-6 mm wide, linear and hairy below; small yellow flowers clustered in rounded heads at the ends of stems.

Polygonum douglasii

Douglas's Knotweed



Michael Charters

Plant Characteristics: Annual; erect, multi-branched, 10-40 cm tall, each plant from a single taproot; flowering from June to September

Flowers: White or pinkish, very inconspicuous, 2-3.5 cm long, flowering in 1-4 groups, forming racemes

Leaves: Alternate, linear to narrowly lance-shaped, 2-4 cm long and 5-12 mm wide, jointed to the base with sheathing stipules

Fruit: 3-sided achene that is shiny and black, egg-shaped, ca. 3-4 mm long, and bending downwards at maturity

Where Found: Dry, open or wooded slopes

Notes: *Polygonum aviculare* (Water knotweed) is 1-10 dm tall, with leaves usually 5-40 mm long and 2-10 mm wide. The leaves are more oblong to elliptic, instead of linear to narrow. There are 1-5 flowers in each group 2-3 mm long and 5-lobed. The lobes are greenish with white or pink edges.

Other genera of this family in the part include *Chorizanthe* and *Rumex*.

Chorizanthe brevicornu (Sagebrush chorizanthe) is an annual, 5-28 cm tall, usually with several stems from the base and mostly basal leaves, 1-6 cm long and 2-8 mm wide; flowers are 3-4 mm long and whitish.

Rumex salicifolius (California dock) is a perennial from taproots, 2-6 dm tall, with leaves mostly on the stems, each blade 3-20 cm long and 3-30 mm wide and linear; numerous flowers in groups and greenish.

Portulacaceae

General Family Characteristics: Leaves opposite or alternate and spiral, simple, often scarious or with tufts of short to elongate hairs; tepals usually 4-6; stamens usually 4-6 opposite tepals; carpels usually 2 or 3; fruit usually a loculicidal capsule or the top dehisces from the capsule.

Calyptroidium rosea

Rosy Pussypaws



Charles Webber © California Academy of Sciences

Plant Characteristics: Annual; stems 2-8 cm long; flowers from May to June

Flowers: Petals are white and 1 mm or less in length; sepals are 1-3 mm long

Leaves: Spatula-shaped to oblanceolate, very fleshy, and mostly basal, 5-30 mm long

Fruit: Capsules open by valves

Where Found: Sagebrush deserts

Notes: Sometimes classified as *Cistanthe rosea*. *Lewisia rediviva* (Bitterroot) has thick fleshy roots, many stems, each 1-3 cm long with a solitary flower, leaves clustered at the top of the stem, 2-5 cm long and linear, 4-8 sepals, rose to white and 1.5-2.5 cm long, 12-18 petals, rose and 2-2.5 cm long.

Ranunculaceae

General Family Characteristics: Leaves usually alternate and spiral; flowers usually bisexual, radial to occasionally bilateral; tepals 4 to many; sepals usually 5; petals usually 5; carpels usually 5 to many; ovaries superior; ovules 1 to many per carpel; fruit usually an aggregate of follicles or achenes

Delphinium andersonii

Anderson's Larkspur



Huntly Lab

Plant Characteristics: Perennial from coarse fibrous roots, 10-60 cm tall, with simple stems that are glabrous; flowers in April to June

Flowers: Arranged in a raceme or panicle with 1-15 flowers; sepals blue, 9-15 mm long, and widely flared, spurred

Leaves: Mainly basal or on the lower portion of the stem, 1-6 cm long x 4 mm wide, usually 3-times dissected

Fruit: Follicles 12-25 mm long, erect, and glabrous

Where Found: Sagebrush steppe areas

Notes:

Other *Delphinium* species in the park:

Delphinium nuttallianum (Nuttall's larkspur) is 0.9-9.2 dm tall, with leaves mainly lower on the stem and divided into linear to elliptic lobes, blue-purple sepals, 9-17 mm long, and spurs 12-19 mm long (2-15 cm long and 2-5 mm wide).

Delphinium occidentale (Western larkspur) is a perennial, 6-20 dm tall or more, with leaves mostly on the stems, 3-20 cm wide and cleft at the base into 3 main lobes, sepals blue-purple to rose or white, 7-20 mm long, with 10-17 mm long spurs.

Ranunculus testiculatus

Bur Buttercup



F. Gauna

Plant Characteristics: Annual, 2-10 cm tall, covered with short matted hairs; flowers in early spring, with usually only one flowering stem

Flowers: One per stem, petals yellow 5-8 mm, sepals green 4-6 mm

Leaves: All basal and alternate, 1.5-4 cm long, deeply-lobed to compound, creating finger-like projections

Fruit: Achenes in a cylindrical cluster, ca 1 cm tall

Where Found: Mostly in sagebrush desert and disturbed sites

Notes: *Ranunculus andersonii* (Anderson's buttercup) is similar to *R. testiculatus*, but is a glabrous perennial with more showy, red flowers.

Other *Ranunculus* species in the park:

Ranunculus glaberrimus (Sagebrush buttercup) also occurs in the park, but is distinct from the other two species. Plant stems are several-flowered and leafy, growing in a low clump, with yellow petals and leaves usually 3-lobed.

Rosaceae

General Family Characteristics: Flowers often showy, usually radial; sepals usually 5; petals usually 5; stamens usually numerous, frequently 15 or more, but sometimes 10 or fewer; carpels 1 to many; ovary superior to inferior; ovules 1, 2 or often more per carpel and basal, lateral, or apical; fruit a follicle, achene, pome, drupe, or aggregate

Amelanchier utahensis

Utah Serviceberry



Larry Blakely

Plant Characteristics: Deciduous shrub, 0.5-4 m tall

Flowers: Complete; petals (5) white, 5-10 mm long and 1.8-4.2 mm wide; very showy and arranged in racemes

Leaves: Covered with dense wooly hairs mainly on lower surface; alternate, rotund-dentate, 10-27 mm long and 6-27 mm wide

Fruit: Berry-like pubescent pomes ranging from reddish to purple, 5-12 mm long

Where Found: Sagebrush deserts to mountains

Notes: *Amelanchier alnifolia* (Western serviceberry) is similar, with a slightly larger flower (9-15 mm long x 3.3-5.8 mm wide) and more purplish to black purple fruit. *Prunus virginiana* (Chokecherry), another shrub from this family that is found in the park, has fruit similar to that of *Amelanchier* species.. *P. virginiana* can be 8 m tall, with an ashy bark and elliptic leaves, 2-10 cm long and 1.5-7 cm wide, and flowers in 4-20 cm long clusters, the flowers ranging from 10-20 mm wide and 4-17 mm long, with white petals, 4-6 mm long, and fruits that are black when ripe.

Chamaebatiaria millefolium

Fernbush



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Plant Characteristics: Aromatic, deciduous shrub, 1-2 m tall

Flowers: Complete, with white petals, in panicles

Leaves: Alternate, 2.5-5 cm, finely divided into 16-30 leaflets and “fern like”

Fruit: Follicles with several seeds

Where Found: Desert canyons and mountain sides, especially on lava

Notes: Quick identification of this shrub is by the fern-like leaves that give the plant its common name, Fernbush.

Potentilla glandulosa

Nevada Cinquefoil



Huntly Lab

Plant Characteristics: Glandular Perennial, up to 50 cm tall, with one to several stems; flowering from May-July

Flowers: Petals pale to deep yellow, 5-8 mm long and 1.5-2 cm wide, in clusters at the tops of stems

Leaves: Often pinnate, with 5-11 ovate leaflets 1.5-5 cm long with sharp teeth on the edges, last leaflet ,terminal,, basal leaves can be 3-22 cm long

Fruit: Achenes, 1-1.2 mm long and glabrous

Where Found: Dry to moist areas, from low-land to mountains

Notes:

Purshia tridentata

Bitterbrush



Huntly Lab

Plant Characteristics: Deciduous shrub, 1-2 m tall

Flowers: Complete; calyx 6-8 mm long and 5-lobed; 5 5-9 mm yellow petals

Leaves: Wedge shaped, deeply 3-toothed at tip, and 5-20 mm long; top side of leaf is greenish and lower side is grayish with short, soft woolly hairs

Fruit: 1-seeded achene, ca. 15 mm long and very tough and firm; seeds are black and range from 6-8 mm

Where Found: Sagebrush to ponderosa pine

Notes: *Purshia tridentata* is a co-dominant shrub of the sagebrush steppe ecosystem. It is a food source for large game animals during winter. When it flowers in the spring, its bright yellow flowers, which are strongly fragrant, make the shrubs conspicuous.

Rubiaceae

General Family Characteristics: Leaves opposite or whorled; flowers usually bisexual and radial, often with different-sized styles; sepals usually 4 or 5; petals usually 4 or 5; stamens usually 4 or 5; carpels usually 2 (5); ovary inferior with usually axile placentation; fruit a loculicidal to septicidal capsule, berry, drupe, schizocarp, or indehiscent pod

Galium bifolium

Twinleaf Bedstraw



Vivian Parker

Plant Characteristics: Annual, 0.5-2 dm tall, erect and glabrous

Flowers: Solitary on 5-30 cm long stalks, with white corollas

Leaves: Whorled in groups of 2-4, 1-2.5 cm long and 1-5 mm wide, linear elliptic

Fruit: 2.5-3.5 mm thick, with hairs that are hooked at the tips

Where Found: Sagebrush to ponderosa pine

Notes:

Other *Galium* species in the park:

Galium aparine (Sticky bedstraw) is 1-20 dm tall or more, with leaves , in whorls of 6-8, 2-5 cm long and 2-7 cm wide, linear to oblanceolate, and 1-3 flowers with white to greenish-white corolla that occur in bundles in upper leaf axils,.

Galium boreale (Northern bedstraw) is 2-8 dm tall, with leaves in whorls of 4 (leaves 1-6.5 cm long and 2-12 mm wide), mainly linear, and several flowers, in bundles terminating the stems, with white to cream corollas, 3-7 mm wide.

Galium multiflorum (Shrubby bedstraw) is clump-forming, with leaves in whorls of 4, (leaves 5-20 mm long and 1-8 mm wide), linear to ovate, and flowers imperfect with greenish yellow 4 mm wide corollas.

Galium trifidum (Threepetal bedstraw) is a perennial, 0.5-3 dm long or more, with leaves in whorls of 4-6 (leaves 3-15 mm long and 0.8-3 mm wide), and axillary flowers, in groups of 1-3, with white to green corollas.

Santalaceae

General Family Characteristics: Leaves simple and entire; flowers 1-several and axillary, regular; stamens as many as tepals and opposite them; pistils 3-5; ovules 1-3, basal placentation; fruit drupe-like; often parasitic.

Comandra umbellata

Bastard Toadflax



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Plant Characteristics: Perennial, erect stems 0.8-3.4 dm tall, simple or branched

Flowers: Arranged in clusters at the stem tips, each flower is star-shaped, sepals 2.5-5 mm long and oblong, white to cream

Leaves: 1-3.3 cm long and 1-10 mm wide, linear to lanceolate, pale green

Fruit: Drupe 6-9 mm thick and somewhat fleshy

Where Found: Widespread

Saxifragaceae

General Family Characteristics: Leaves usually alternate and spiral, sometimes in a basal rosette; flowers bisexual to unisexual; sepals usually 4 or 5; petals usually 4 or 5, often clawed, stamens usually 3-10; carpels 2; ovary superior to inferior; fruit a septicidal capsule or follicle

Lithophragma parviflorum

Smallflowered Woodland Star



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Plant Characteristics: Perennial, mostly glandular-pubescent, generally 10-40 cm tall from thin rhizomes; may be rough to the touch; flowers from April to July

Flowers: In groups of 3-11 in elongating clusters; calyx 6-10 mm and vase-shaped; petals white to pink and generally 3-lobed; flowers are star-like, with 5 sides, 12-15 mm wide

Leaves: Mainly basal; palmately divided into 5 wedge-like sections, which may be lobed; entire leaf is strongly pubescent on the lower surface; basal leaves long-stalked and stem leaves without a stock and much smaller

Fruit: Capsules 3-beaked, with smooth to slightly wrinkled seeds

Where Found: Sagebrush deserts and grasslands to lower mountains

Notes: *Lithophragma tenellum* and *L. parviflorum* are similar and can be mistaken for one another. The main differences are in the flowers. *Lithophragma tenellum* has smaller flowers (6-10 mm) than *L. parviflorum* (12-15 mm), and the calyxes are different in shape: the calyx of *L. tenellum* is bell-shaped and smaller (3.5-5 mm) and that of *L. parviflorum* is vase-shaped and larger (6-10 mm)

Lithophragma tenellum

Slender Woodland Star



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Plant Characteristics: Perennial, mostly glandular-pubescent, 10-30 cm tall, from thin rhizomes

Flowers: 6-11 flowers per plant, in racemes; bell-shaped calyx 3.5-5 mm long when flower is full; petals white to pink and 5-7 lobed, forming a star-like flower, 6-10 mm wide

Leaves: Mainly basal; palmately divided into 5 wedge-like sections, which may be lobed; leaves strongly pubescent on the lower surface; basal leaves long-stalked and stem leaves without a stock and much smaller

Fruit: 3-beaked capsule, with smooth or slightly wrinkled seeds

Where Found: Sagebrush desert to ponderosa pine

Notes: *Lithophragma glabra* (Smooth woodlandstar) is 5-35 cm tall, with leaves on stems that are 1.2-4.8 cm long and leaf blades 5-24 mm long x 8-48 mm wide and partly or wholly divided 3 times, with the main divisions lobed; and flowers with petals that are pinkish, white, or lavender, 4-7 mm long and 3-5 times lobed.

Heuchera parvifolia (Littleleaf alumroot) is very different from the other saxifrages in the park. It has a mat of basal leaves that are palmately lobed 3-7 times, with blades 1.5-6.5 cm wide, and flowers in clusters, with white petals ca. 2 mm long.

Scrophulariaceae

General Family Characteristics: Leaves alternate and spiral or opposite; flowers bisexual and bilateral to nearly radial; sepals usually 3-5; petals 4 or 5; stamens 5, 4, or 2; carpels 2; ovary superior with axile placentation; fruit a septicidal capsule or a schizocarp of 2 achenes

Castilleja chromosa

Desert Indian Paintbrush



Huntly Lab

Plant Characteristics: Perennial, 2-3.5 dm tall, with several stems in a cluster; covered with long hairs making the plant look grayish; flowers from April to June

Flowers: Bracts and calyx (20-26 mm) segments may be bright red, scarlet, orange, or yellow; calyx may be more deeply cleft in back than in front, and segments are round to obtuse; galea 10-18 mm long, corolla 21-30 mm long

Leaves: Lower are long and undivided, upper are divided into 3-5 linear segments, linear to linear-lanceolate

Fruit: Capsules with numerous seeds

Where Found: Sagebrush hills and plains

Notes: *Castilleja angustifolia* (Northernwestern Indian paintbrush) is similar, but the bracts and calyx are purplish, with galea only 6-12 long, calyx 17-21 mm long, and corolla 20-25 mm long.

Castilleja miniata (Scarlet Indian paintbrush) and *Castilleja rhexifolia* (Splitleaf Indian paintbrush) are also similar to *C. chromosa*, but their leaves are not segmented. To distinguish *C. miniata* and *C. rhexifolia*, pay close attention to the inflorescence color. *C. miniata* ranges from **reddish to yellow**, and *C. rhexifolia* is **purplish**.

Castilleja applegatei (Pine Indian paintbrush) is also similar to these species, but is very glandular-pubescent below the inflorescence; the other species are not.

Castilleja pallescens

Pale Indian Paintbrush

Unable to Locate Photo

Plant Characteristics: Perennial, 2- to several-stemmed, 1-2.5 dm tall

Flowers: Bracts 3 or more lobed; galea short, 4-6 mm; corolla tube 8-19 mm, with a long (3-7.5 mm) lower lip; calyx 1-4 mm and lanceolate to triangular

Leaves: Alternate and entire or the upper ones sometimes with a pair of narrow lateral lobes

Fruit: Capsule with numerous seeds

Where Found: Throughout sagebrush steppe

Notes: *Castilleja cusickii* (Cusick's Indian paintbrush) is similar to *C. pallescens*, but the calyx segments are more rounded and the corolla 20-26 mm long, calyx 23-28 mm long, and entire plant 1.5-3 dm tall.

Castilleja pilosa (Longspike Indian paintbrush) is a perennial, 1.5-3 dm tall, with leaves similar to *C. pallescens*, flowers yellowish-green to purplish, and corolla 16-24 mm long, lower lip 3-5 mm long, and calyx 14-23 mm long.

Castilleja flava (Yellow Indian paintbrush) is a perennial, 8-42 cm tall, with several stems in a cluster; leaves 1.6-6.7 cm long and linear, the lower leaves entire and upper leaves with a pair of lateral lobes; hairy flowers in yellow inflorescences, the corolla 15-22 mm long, with galea shorter than the tube, and calyx 12-19 mm long. The yellow inflorescence helps to distinguish this species from the others.

Collinsia parviflora

Blue-eyed Mary



Gerald and Buff Corsi © California Academy of Sciences

Plant Characteristics: Annual from small taproots, with slender stems, around 5-30 cm tall and often branching; flowering from April-July

Flowers: Corolla 4-7 mm, 2-lipped, with upper lip 2-lobed and lower lip 3-lobed, blue with white on upper lip; corolla tube bent at a slanting angle to the calyx

Leaves: Opposite, linear to ovate, ca. 1-4 cm long; lower leaves can be broader and upper leaves nearer the flowers more in whorl of 3-5 leaves

Fruit: Oval capsule, 3-5 mm long, containing 2-4 flat oval seeds with thick edges

Where Found: Moist to dry areas in foothills to mountains

Notes:

Mimulus suksdorfii

Suksdorf's Monkeyflower



Steve Schoenig

Plant Characteristics: Nonrhizomatous annual

Flowers: Corollas yellow, often marked with red, 4-8 mm long, and only slightly two-lipped, with the lower lip barely larger than the upper

Leaves: Opposite, linear to narrowly oblong or oblanceolate, tapered to the petiole

Fruit: Capsules that split down each locule, with numerous seeds

Where Found: Open, moist to dry places at various elevations

Notes: This tiny plant can be overlooked easily. *Mimulus nanus* (Dwarf monkeyflower), which is also found in the park, has larger (10-50 mm) purple to red corollas.

Penstemon cyananthus

Wasatch Penstemon



Huntly Lab

Plant Characteristics: Perennial, 0.6-9 dm tall and glabrous, stems erect

Flowers: In groups of 1 to 7; blue corolla, 15-32 mm long and glabrous; calyx 3-8.5 mm long

Leaves: Clasping, 2.5-10 cm long and entire, lanceolate

Fruit: 2-valved capsule

Where Found: Mountain brush and sagebrush communities

Notes: *Penstemon cyaneus* (Blue beardtongue) is a perennial from a woody base, with leaves almost always entire and relatively narrow (less than 2.5 cm wide), and the corolla 25-38 mm long and blue to purple. *Penstemon cyaneus* and *P. cyananthus* are similar and hard to distinguish, with the main difference the corolla size.

Penstemon deustus

Hot-rock Penstemon



Huntly Lab

Plant Characteristics: Stems in clusters from a woody base; 20-60 cm tall; flowering from May to July,

Flowers: Bilaterally symmetrical; in several whorls; corolla white or whitish with purple guide-lines inside, 8-20 mm long, upper corolla lip with 2 round lobes bent upwards, lower corolla lip with 3 lobes bent downwards

Leaves: Opposite, 6 cm long x 2.5 cm wide, ovate and sharply toothed

Fruit: Capsule with numerous wingless seeds

Where Found: Dry, open, rocky places, from lowlands to mid-mountains

Notes: *Penstemon acuminatus* is also found in sagebrush steppe, but the flowers are not whitish and the corolla is 18-38 mm long. *P. acuminatus* grows mainly in sand dunes.

Penstemon pumilus

Dwarf or Salmon River Beardtongue

Unable to locate a photo

Plant Characteristics: Perennial, 2 dm or less, may be mat forming

Flowers: Corolla glabrous and 12-20 mm long with a blue violet throat (or tube) and blue lobes

Leaves: Grayish due to many small hairs, all or mostly alternate and narrow, generally 1-5 pairs less than 6 mm wide, bases may join around the stem

Fruit: Capsules with numerous seeds

Where Found: Dry valleys of central Idaho

Notes:

Other *Penstemon* species in the park:

Penstemon barbatus (Beardlip beardtongue) is a perennial, 3-11 dm tall, from a woody base, leaves entire, 2-10 cm long x 1-20 mm wide, glabrous, lower leaves spatula shaped and upper ones more linear, flowers in groups of 1, 2, or sometimes 4, corolla 25-35 mm long and **scarlet**.

Penstemon cusickii (Cusick's beardtongue) is a perennial that is 1.5-4 dm tall, leaves are all on the stems and entire 10 mm wide, flowers blue-lavender to **light purplish**, corolla 15-24 mm.

Penstemon eatonii (Eaton's beardtongue) is a perennial, 2.5-10 dm tall and very robust, with few to many stems; leaves entire, lower 3-19 cm long and 8-40 mm wide, lanceolate, upper 1.5-11 cm long and 8-40 mm wide, clasping to the stem; flowers in groups of 1-3 or sometimes 6, corolla 20-30 mm long and **red**, tube 2.8-3.5 mm in diameter.

Penstemon humilis (Low beardtongue) is a perennial 0.7-3.5 dm tall, with entire basal and lower leaves that may be toothed (1-9 cm long x 2-20 mm wide); stem leaves are 0.8-5.5 cm long x 2-12 mm wide and more ovate; corolla 8-19 mm long with a **violet** tube.

Penstemon palmeri (Palmer's beardtongue) is a robust perennial, erect from a clustered woody base, leaves 2-13 cm long and 5-48 mm wide, very thick and glabrous, usually sharply serrated, flowers in clusters of 1-3 or sometimes 5, corolla 24-37 mm long **creamy white to pink**, externally and **dark rosy pink** internally.

Penstemon radicosus (Matroot beardtongue) is a perennial 2-4 dm tall with slender erect stems from a woody base, covered with curved hairs, leaves are all found on the stems, 1.5-5.5 cm long and 1.5-11 mm wide, elliptic in shape, flowers in groups of 1 to a few, corolla 18-21 mm long and **blue to blue violet** with whitish ridges.

Penstemon speciosus (Royal beardtongue) is a perennial 15-25 cm tall with several stems, leaves are entire and rounded 1.5-7 cm long and 1-12 mm wide, leaves are often folded, flowers are in crowded clusters, corolla 23-35 mm long and **light blue**.

Other genera of this family in the park include *Cordylanthus*, *Linaria*, *Orthocarpus*, and *Verbascum*.

Cordylanthus capitatus (Yakima bird's-beak) is an annual, 1-6 dm tall, with leaves on the stems, alternate, entire, and dissected, flowers in small heads, purplish corolla 10-15 mm long, flowers made up of a corolla tube.

Cordylanthus ramosus (Muchbranched bird's-beak) is an annual, 8-27 cm tall, with branching stems; leaves 1-3.5 cm long, entire or dissected into threadlike segments; flowers in a head-like spike of 1-5 flowers; corolla 10-21 mm long and a dull yellow, with a lower lip that may be purple.

Linaria genistifolia (Dalmatian toadflax) (**NOXIOUS**) is a perennial with a stout stem, 3.2-11.7 dm tall, oval leaves 1.4-3.2 cm long that may be clasping the stem, corolla 1.2-2.3 cm long and yellow with a spur, the spur 1-1.7 cm long.

Orthocarpus luteus (Yellow owl's-clover) is an annual, with stems 1-4 dm tall and erect; leaves 1-4 cm long and linear, mostly entire; flowers arranged in narrow spikes; and corollas 9-12 mm long and a golden yellow.

Verbascum blattaria (Moth mullein) is a biennial, with stems 4-12 dm tall and erect, stem leaves 1.5-15 cm long glabrous and toothed, and corolla 25-30 mm wide and yellow.

Verbascum thapsus (Miner's candle) is a non-native biennial with a stout stem, 5-15 dm tall or more; basal leaves in a rosette and oval shaped, 6-50 cm long; stem leaves elliptical and smaller than basal leaves; flowers in dense clusters up to 3 dm long and with corollas 15-30 mm wide, mostly yellow. The plant is densely covered with hairs, giving it a woolly look.

Solanaceae

General Family Characteristics: Leaves alternate; flowers bisexual and generally 5-merous; corolla generally regular; stamens alternate with corolla lobes; ovary superior with axile placentation; fruit a capsule or berry. Three genera are found in the park.

Hyoscyamus, Nicotiana, and Solanum

One species of each genus occurs in the park:

Hyoscyamus niger (Black henbane) (**NOXIOUS**) is 3-15 dm tall and very hairy, with oval leaves, 6-20 cm long, that may be irregularly lobed to pinnatifid and may be clasping to the stem, and corolla ca. 1.5-2 cm long.

Nicotiana attenuata (Coyote tobacco) is an annual that is 3-16 dm tall, with leaves 5-15 cm long and ovate, and flowers in clusters, with white corollas that are 2.5-3 cm long and ca.1 cm wide.

Solanum triflorum (Cutleaf nightshade) is a tap-rooted annual that is 1-6 dm tall, with leaves evidently pinnate and lobed, 2-5 cm long and 1-3 cm wide, and flowers with white or faintly bluish corollas that are 5-10 mm wide when expanded.

Urticaceae

General Family Characteristics: Leaves simple opposite or alternate; juice watery; flowers unisexual or bisexual; stamens 4 opposite tepals; pistil 1; ovary superior; fruit an achene.

Urtica dioica

Stinging Nettle



Tony Morosco

Plant Characteristics: Perennial, rhizomatous, 1-3 m; stems are square and armed with stinging hairs; flowers from April to September

Flowers: In hanging clusters, unisexual or bisexual, greenish or tinged pink, 1-2 mm long and inconspicuous, made up of 4 tiny sepals and no petals

Leaves: Lanceolate to ovate or heart shaped and coarsely serrate, 7-15 cm, stalk supporting leaf 5-15 mm long.

Fruit: Lens-shaped achenes 1-2 mm long

Where Found: Moist areas from sagebrush desert to deep woods

Notes: Stinging nettle can cause skin irritation and is painful to handle.

Verbenaceae

General Family Characteristics: Leaves opposite or occasionally whorled; flowers bisexual bilateral; sepals 5; petals 5; stamens 4; carpels 2; ovary superior; fruit a drupe with 2 or 4 pits

Verbena bracteata

Bigbract Verbena



Jasmine Watts

Plant Characteristics: Tap-rooted annual or perennial, generally prostrate or decumbent, 1-6 dm tall

Flowers: Terminal, often densely many-flowered, spikes; corolla inconspicuous; tube ca. 4 mm; limb 2-3 mm wide

Leaves: Deeply cleft, 2-5 cm long x 1-2.5 cm wide

Fruit: 4 linear-oblong nutlets

Where Found: Widespread native American weed

Violaceae

General Family Characteristics: Leaves alternate occasionally opposite or basal rosette, flowers usually bisexual; sepals 5; petals 5; stamens usually 5; carpels usually 3; ovary superior with parietal placentation; fruit usually a loculicidal capsule

Viola beckwithii

Beckwith's Violet



Steve Matson

Plant Characteristics: Perennial, 5-12.5 cm tall; flowers from March to May

Flowers: Lower 3 petals mauve to white, yellowish only at base; upper 2 reddish-purple

Leaves: Blades 2.5 cm long, grayish green, 2-3 times pinnatifid, often pubescent, attached to a long stalk

Fruit: Capsule

Where Found: Sagebrush hills and ponderosa pine woodlands

Notes:

Viola nuttallii

Valley Violet



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Plant Characteristics: Perennial, 4-15 cm tall

Flowers: Petals partially to wholly yellow, each petal 5-15 mm long

Leaves: Basal and generally slightly to much longer than broad, 2-10 cm long x 1-5 cm wide, ovate to elliptic, finely obscurely serrate, not coarsely veined

Fruit: Capsules glabrous or with few short hairs

Where Found: Dry to moist areas within sagebrush steppe and Douglas firs

Notes: This violet spreads across the ground and may cover a large area.

Viola purpurea

Goosefoot Violet



Charles Webber © California Academy of Sciences

Plant Characteristics: Perennial; 5-15 cm tall; flowers from May to August

Flowers: Bilaterally symmetrical; 1.5-2 cm wide; petals partially to wholly yellow, with upper petals deep purple on back

Leaves: Generally slightly to much longer than broad, coarsely veined, generally not greater than 4 cm, coarsely few-toothed or lobed; leaf may resemble a goose's foot

Fruit: Capsules covered with minimal short hairs

Where Found: Lowland dry areas to high mountains, especially on open ridges or slopes

Notes:

Glossary

Definitions from Merriam-Webster Online

- Achene:** A small, dry indehiscent fruit with the seed distinct from the fruit wall
- Areoles:** A round or elongated often raised or depressed area on a cactus which is equivalent to a bud and from which spines, flowers, stems, or roots grow.
- Awn:** A slender bristlelike appendage found on the bracts of grasses
- Carpels:** A simple pistil or one element of a compound pistil
- Cymose:** Having a usually flat-topped flower cluster in which the main and branch stems each end in a flower that opens before those below it or to the side
- Dioecious:** Having separate female and male reproductive organs in separate plants
- Galea:** The upper lip or helmet-shaped part of a labiate flower
- Glume:** Small dry membranous bract found in inflorescences of Poaceae
- Inflorescence:** Arrangement of flowers on a stalk
- Involucral:** Possessing a whorl of bracts found below the flower
- Lanceolate:** Shape of a leaf, narrow and tapering to a pointed apex
- Leaflet:** Part of a compound leaf
- Lemma:** The lower and stouter of the two glumes immediately enclosing the floret in most Poaceae
- Ligule:** The thin projection from the upper end of the sheath of a leaf of grass
- Locules:** A small space within an organ such as the cavity of an ovary
- Loculicidal:** Seeds dehisce through the locule
- Nulet:** A small nut
- Ob lanceolate:** Leaf shaped rounded at the tip and tapering at the attachment
- Obovate:** Leaf shape, egg-shaped with the narrower end towards the base
- Palmate:** Leaf shape, divisions like fingers on a hand
- Paniculate:** A compound racemose inflorescence
- Pappus:** An appendage or tuft of appendages that crowns the ovary or fruit in various seed plants and functions in dispersal of the fruit
- Perianth:** The floral structure comprised of the calyx and corolla especially when the two whorls are fused
- Petiole:** A slender stem that supports the blade of a leaf
- Pinnate:** Resembling a feather especially in having similar parts arranged on opposite sides of an axis like barbs on the rachis of a feather
- Pistil:** A single carpel or group of fused carpels usually differentiated into an ovary, style, and stigma
- Placentation:** The arrangement of placentas and ovules in a plant ovary
- Pome:** A fleshy fruit consisting of an outer thickened fleshy layer and a central core with usually five seeds enclosed in a capsule
- Scarious:** Dry and membranous in texture
- Septicidal:** Dehiscent longitudinally at or along a septum
- Siliques:** A narrow elongated 2-valved usually many-seeded capsule that is characteristic of the mustard family, opens by sutures at either margin, and has two parietal placentas
- Spikelet:** One of the few-flowered bracted spikes that make up the compound inflorescence of a grass or sedge
- Stamens:** The pollen producing male organ of a flower that consists of an anther and a filament
- Stipules:** Either of a pair of appendages borne at the base of the petiole in many plants
- Stolons:** A horizontal branch from the base of a plant that produces new plants from buds at its tip or nod

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References

- Harris, J.G., M.W. Harris. 2001. Plant Identification Terminology: An Illustrated Glossary Second Edition. Spring Lake Publishing, Spring Lake, Utah.
- Hitchcock, C.L., A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press, Seattle, Washington.
- Kershaw, L., A. MacKinnon, J. Pojar. 1998. Plants of the Rocky Mountains. Lone Pine Publishing, Auburn, Washington.
- Popovich, S. J. October 15, 2006. Craters of the Moon Vascular Plant Checklist. 72 pp.
- Popovich, S. J. and N. D. Atwood. October 15, 2006. Craters of the Moon National Monument and Preserve Checklist of Vascular Plants. 23 pp.
- Rosentreter, R. 2005. Sagebrush Identification, Ecology, and Palatability Relative to Sage-Grouse. United States Department of Agriculture Rocky Mountain Research Station, Fort Collins, Colorado. 3-16 pp.
- Raven, P.H., Evert, R.F., Eichhorn, S.E. 1999. Biology of Plants, Sixth Edition. W.H. and Company Worth Publishers, New York, New York.
- Spelling, R. 2001. National Audubon Society Field Guide to North American Wildflowers: Western Region Revised Edition. Chanticleer Press Inc., New York, New York.
- Welsh, S.L., N.D. Atwood, L.C. Higgins, S. Goodrich. 1987. A Utah Flora: Great Basin Naturalist Memoir No. 9. Brigham Young University, Provo, Utah.
- Visalli, D., L. Walt, D. Ditchburn. 2005. Northwest Wildflowers Series: Northwest Dryland Wildflowers, Sagebrush-Ponderosa. Hancock House Publishers, Blaine, Washington.

References for Plant Identification

- Cronquist, A., A. H. Holmgren, N. H. Holmgren, and J. L. Reveal. 1972. Intermountain Flora, Vol. 1. Hafner Publishing Company, New York, New York. 270 pp.
- Cronquist, A., A. H. Holmgren, N. H. Holmgren, J. L. Reveal, and P.K. Holmgren. 1994. Intermountain Flora, Vol. 5. New York Botanical Garden, Bronx, New York. 496 pp.
- Cronquist, A., A. H. Holmgren, N. H. Holmgren, J. L. Reveal, and P. K. Holmgren. 1989. Intermountain Flora, Vol. 3, Part B. New York Botanical Garden, Bronx, New York. 279 pp.
- Cronquist, A., A. H. Holmgren, N. H. Holmgren, J. L. Reveal, and P. K. Holmgren. 1984. Intermountain Flora, Vol. 4. New York Botanical Garden, Bronx, New York. 573 pp.

- Cronquist, A., A. H. Holmgren, N. H. Holmgren, J.L. Reveal, and P.K. Holmgren. 1977. Intermountain Flora, Vol. 6. Columbia University Press, New York, New York. 584 pp.
- Cronquist, A., N. H. Holmgren, and P. K. Holmgren. 1997. Intermountain Flora, Vol. 3, Part A. New York Botanical Garden, Bronx, New York. 446 pp.
- Davis, C. 2006. Plants of Eastern Idaho. Bannock Ecological, Pocatello, Idaho. 35 pp.
- Davis, R. J. 1952. Flora of Idaho. Brigham Young University Press, Provo, Utah. 836 pp.
- Flora of North America Editorial Committee. 2002. Flora of North America North of Mexico, Volume 26 *Magnoliophyta: Liliidae: Liliales and Orchidales*. Oxford University Press, Oxford, New York. 723 pp.
- Flora of North America Editorial Committee. 2002. Flora of North America North of Mexico, Volume 23 *Magnoliophyta: Commelinidae (in part): Cyperaceae*. Oxford University Press, Oxford, New York. 608 pp.
- Flora of North America Editorial Committee. 2003. Flora of North America North of Mexico, Volume 4 Part 1 *Magnoliophyta: Caryophyllidae*. Oxford University Press, Oxford, New York. 559 pp.
- Flora of North America Editorial Committee. 2005. Flora of North America North of Mexico, Volume 5 Part 2 *Magnoliophyta: Caryophyllidae*. Oxford University Press, Oxford, New York. 656 pp.
- Harris, J.G. and Harris, M.W. Plant Identification Terminology, An Illustrated Glossary 2nd Edition. Spring Lake Publishing, Spring Lake, Utah.
- Hickman, C. 1993. The Jepson Manual Higher Plants of California. University of California Press, Berkeley and Los Angeles, California. 1400 pp.
- Hironaka, M., M. A. Fosberg, and A. H. Winward. 1983. Sagebrush-grass habitat types of southern Idaho. Forest, Wildlife and Range Experiment Station Bulletin Number 35, University of Idaho, Moscow, Idaho. 44 pp.
- Hitchcock, C. L., and A. Cronquist. 1973. Flora of the Pacific Northwest. University of Washington Press, Seattle, Washington. 730 pp.
- Hitchcock, C.L., A. Cronquist, M. Ownbey, J.W. Thompson. 1969. Vascular Plants of the Pacific Northwest, Part 1: Vascular Cryptogams, Gymnosperms, and Monocotyledons. University of Washington Press, Seattle and London. 914 pp.
- Hitchcock, C.L., A. Cronquist, M. Ownbey, J.W. Thompson. 1964. Vascular Plants of the Pacific Northwest, Part 2: Salicaceae to Saxifragaceae. University of Washington Press, Seattle and London. 597 pp.
- Hitchcock, C.L., A. Cronquist, M. Ownbey, J.W. Thompson. 1961. Vascular Plants of the Pacific Northwest, Part 3: Saxifragaceae to Ericaceae. University of Washington Press, Seattle and London. 614 pp.
- Hitchcock, C.L., A. Cronquist, M. Ownbey, J.W. Thompson. 1959. Vascular Plants of the Pacific Northwest, Part 4: Ericaceae through Campanulaceae. University of Washington Press, Seattle and London. 510 pp.

- Hitchcock, C.L., A. Cronquist, M. Ownbey, J.W. Thompson. 1955. Vascular Plants of the Pacific Northwest, Part 5: Compositae. University of Washington Press, Seattle and London. 343 pp.
- Holmgren, N. H., P. K. Holmgren, and A. Cronquist. 2005. Intermountain Flora, Vol. 2, Part B. New York Botanical Garden, Bronx, New York. 488 pp.
- Hurd, E.G., N.L. Shaw, J. Mastroguseppe, L.C. Smithman, S. Goodrich. 1998. Field Guide to Intermountain Sedges. United States Department of Agriculture Rocky Mountain Research Station, Ogden, Utah. 282 pp.
- Popovich, S. J. and N. D. Atwood. October 15, 2006. Craters of the Moon National Monument and Preserve Checklist of Vascular Plants. 23 pp.
- Rosentreter, R. 2005. Sagebrush Identification, Ecology, and Palatability Relative to Sage-Grouse. United States Department of Agriculture Rocky Mountain Research Station, Fort Collins, Colorado. 3-16 pp.
- USDA, NRCS. 2006. The PLANTS Database (<http://plants.usda.gov>, 16 June 2006). National Plant Data Center, Baton Rouge, LA 70874-4490 USA.
- Welsh, S.L., N.D. Atwood, S. Goodrich, and L.C. Higgins. 2003. A Utah Flora, 3rd Edition, revised. Brigham Young University, Provo, Utah. 912 pp.
- Winward, A.H. 2004. Sagebrush of Colorado. Colorado Division of Wildlife, Denver, Colorado. 46 pp.