



Forbs

Northwest Indian paintbrush | *Castilleja angustifolia*

Hunt's bumblebee | *Bombus huntii*



What is a Forb?

Plants that lack woody stems and are not grasses, sedges, or rushes, are forbs.

For identification purposes, plants are often categorized into functional groups based on their physical growth form. Forbs are plants with soft, flexible, aboveground structures that lack woody tissues; in other words, they are herbaceous. Forbs include all herbaceous species that do not exhibit a grass-like growth form and are often referred to as wildflowers or herbs.

Forbs can exhibit a range of life history strategies, which can often serve as identification characteristics. Annuals must establish from seed every year, perennials can resprout from roots, and biennials complete their life cycle over two growing seasons. Other physical characteristics commonly used for identification include the size and shape of the plant, the shape and arrangement of the flowers, the shape and arrangement of the leaves, the color and number of various flower parts, the shape and size of the fruit, and the texture and distribution of the roots.

Field Notes



COMMON NAME

Hooker's onion

FAMILY

Lily (*Liliaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are attached to distinct stalks (pedicels) that are fused at a single point to form a terminal cluster in an umbel arrangement. The petals and sepals are indistinguishable from one another (tepals), are different lengths, and are rose-purple. Each umbel has 10-30 flowers.

Fruits: Are dry containers that split open (capsules) with rough-surfaced seeds.

Leaves: Are long, thin, and linear with 2-4 per plant, and typically wither away once individuals begin to bloom (anthesis).

Roots: Are smooth yellow-brown coated bulbs between 1-1.5 cm in diameter, and have a distinct square-like honeycomb pattern in cross-section.

Plants: Are 20-35 cm tall, bloom May to June, and emit a distinctive onion odor.

SITE AND HABITAT

Found on the southern and eastern portions of the INL Site in medium to coarse textured soils around basalt outcroppings.

NOT TO BE MISTAKEN FOR

ALTE: Flowers are usually white with a pink to reddish midrib, smooth-surfaced seeds, and bulbs are wrapped in a net-like or burlap outer covering.

AKA: *Allium acuminatum* var. *cuspidatum*

Fun Facts: While wild onions (*Allium* sp.) are edible and can be used to flavor food, be careful because their bulbs appear similar to poisonous death camas (*Zigadenous* sp.). All edible *Allium* species produce an aromatic onion smell when cut open but *Zigadenous* species will be odorless.

**COMMON NAME**

desert alyssum

FAMILYMustard (*Brassicaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are on the ends of distinct stalks (pedicel) along the main flowering stalk in a raceme arrangement with 4 yellow petals, 6 stamens, and lack tiny leaves beneath each flower (bracts).

Fruits: Are round pods that have a central partition (silicle), mostly hairless, and the central septum remains throughout the summer. Each pod produces 1-2 seeds.

Leaves: Are lance shaped, have smooth edges, and are covered in star-like hairs (stellate).

Plants: Are 3-20 cm tall and bloom from April to July.

SITE AND HABITAT

Widespread across the INL Site, but more so in disturbed areas in clayey soils.

NOT TO BE MISTAKEN FOR

LEDE: Fruit pods are oblong and have notched tips. **ALSI:** Fruit pods are densely covered with stellate hairs.

AKA: *Alyssum minimum*, *A. sartorii*, *Psilomema minimum*

Fun Facts: All individuals in the mustard family have a distinct stamen pattern known as tetradynamous where 4 stamens are long and 2 stamens are short.



COMMON NAME

sand gilia

FAMILY

Phlox (*Polemoniaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have 5 fused petals shaped like a funnel (funnellform). The petal lobes have a toothed tip and are white on top with lavender undersides. The fused petal funnel is yellow and is exerted from the 5 fused sepals (calyx). The flowers are attached to distinct stalks (pedicels) and form solitary terminal blooms on laterally branching stems (panicle).

Fruits: Are dry containers that split open (capsules) and are round. Capsules have 3 cavities (locules) with 8-12 seeds per locule that are not mucilaginous.

Stems: Are covered in glandular hairs.

Leaves: Have edges lobed at 1 level (pinnatifid), with glandular hairs on the upper surface, and form a basal rosette.

Plants: Are 5-20 cm tall and bloom from April to June.

SITE AND HABITAT

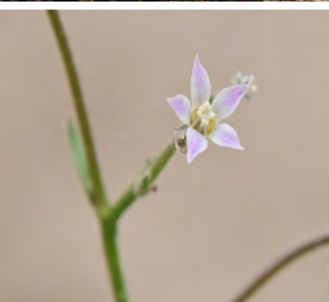
Found in central to western areas of the INL Site in dry, open, sandy washes.

NOT TO BE MISTAKEN FOR

ALLO: Petal lobes have tapered tips and the upper leaf surface is shiny. **GITW, GIIN, GIBR, & GIMO:** Petal lobes have rounded tips and stems are covered in a tangled mess of cobwebby hairs (arachnoid). **GISI:** Stem covered with white coating (glaucous). **IPMI:** Plants lack a basal rosette of leaves.

AKA: *Gilia leptomeria*

Fun Facts: This genus is named after Alice Eastwood, the California Academy of Science herbarium founder.

**COMMON NAME**

Lott's gilia

FAMILYPhlox (*Polemoniaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have 5 fused petals shaped like a funnel (funnelform). The petal lobes are acutely tipped, are pale pink on top with purple undersides; the fused petal funnel is yellow and is exerted from the 5 fused sepals (calyx). Flowers are attached to distinct stalks (pedicels) and form solitary terminal blooms on laterally branching stems in a panicle arrangement.

Fruits: Are dry containers that split open (capsules) and are round. Capsules have 3 cavities (locules) with 10 seeds per locule that are not mucilaginous.

Leaves: Form robust basal rosettes that have shiny, hairless upper surfaces, and have edges lobed at 1 level (pinnatifid).

Stems: Are covered in glandular hairs.

Plants: Grow up to 40 cm tall and bloom from April to July.

SITE AND HABITAT

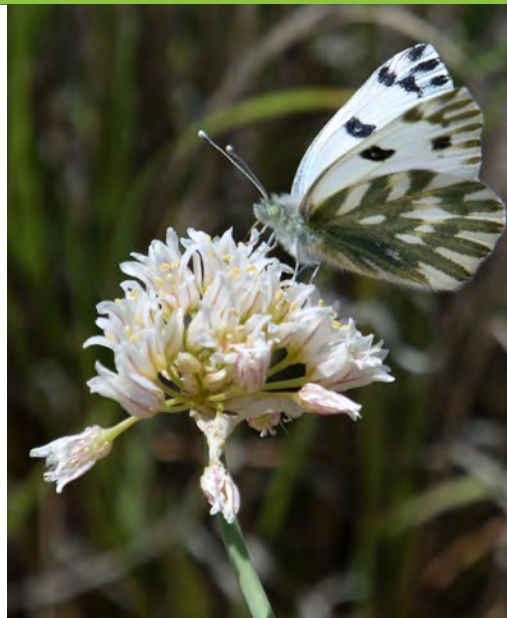
Found in central to western areas of the INL Site in dry, open, sandy washes.

NOT TO BE MISTAKEN FOR

ALLE: Petal lobes have toothed tips and upper leaf surface is hairy. **GITW, GIIN, GIBR, & GIMO:** Petal lobes have rounded tips and stems are covered in a tangled mess of cobwebby hairs (arachnoid). **GISI:** Stems covered with white, waxy coating (glaucous). **IPMI:** Plants lack a basal rosette of leaves.

AKA: *Gilia lottiae*

Fun Facts: The Phlox family characteristics are opposite or alternate leaves with distinctive tubular flowers with 5 fused petals, 5 fused sepals, 5 stamens, and pistils that have 3 lobes.



COMMON NAME

textile onion

FAMILY

Lily (*Liliaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are attached to distinct stalks (pedicels) that are fused at a single point to form a terminal cluster in an umbel arrangement. The petals and sepals are indistinguishable (tepals), are equal in length, and are white with a pink midrib. Each umbel has 15-30 flowers.

Fruits: Are dry containers that split open (capsules) with smooth-surfaced seeds.

Leaves: Are long, linear, occur in pairs, and typically remain on the flower stalk throughout flowering (anthesis).

Roots: Are cloth covered bulbs and are 1.5-2.5 cm in diameter.

Plants: Are 5-25 cm tall, bloom May to June, and emit a distinctive onion odor.

SITE AND HABITAT

Widespread across the INL Site and occurs in a range of soil types.

NOT TO BE MISTAKEN FOR

ALGE: Plants have 3-5 leaves, tepals lack pink midrib, and seeds have a rough surface.

ALAC: Plants have 2 leaves that wither at anthesis, tepals are rose to purple and differ in length.

AKA: *Allium aridum*, *A. geyeri* var. *textile*, *A. reticulatum*, *A. r.* var. *playanum*.

Fun Facts: While wild onions (*Allium* sp.) are edible and can be used to flavor food, be careful because their bulbs appear similar to poisonous death camas (*Zigadenous* sp.). All edible *Allium* species produce an aromatic onion smell when cut open but *Zigadenous* species will be odorless.

**COMMON NAME**

sagebrush rockcress

FAMILYMustard (*Brassicaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have distinct stalks (pedicels) that grow along the main flowering stalk in a raceme arrangement. There are 4 purple petals, 4 green sepals, and 6 stamens.

Fruits: Are elongated tube-like pods that split open along a central partition (silique), are thin, curved, and stick out at sporadic angles midway up the stem.

Leaves: Occur around the base and along the stem; basal leaves form rosette and are lance shaped while stem leaves are arranged alternately, have a clasping lobed base (auriculate), and are attached directly to the stem (sessile).

Stems: Branch near the ground from a base that persists to the following year (caudex) and are covered in small, frayed hairs (stellate) with 5-8 strands.

Plants: Are 50-80 cm tall and bloom from May to June.

SITE AND HABITAT

Found across the INL Site in sagebrush stands with sandy soils around basalt outcroppings.

NOT TO BE MISTAKEN FOR

ARLI: Fruits are curved semi-circles, and stems do not branch from the base. **ARHO:** Fruits dangle downward.

AKA: *Boechera cobrensis*

Fun Facts: Each species in the mustard family has one of two pod types; a circular disc-shaped pod is a silicle, while an elongated tube-like pod is a silique. Both pod types distally split open along a central partition.



COMMON NAME

Franklin's sandwort

FAMILY

Pink (*Caryophyllaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are on highly branched elongating shoots that grow distal flower clusters in a cyme arrangement. The flowers have 5 white petals, 5 light green fused sepals (calyx), and 10 stamens. The petals are not fused to each other (apopetalous), are linear with round tips, and are enclosed within the calyx. The sepals are sharply pointed, equal or longer than the petals, 5-12 mm long, and have green mid-ribs.

Leaves: Are opposite, small, sharply lance shaped, and attach directly to the stem (sessile). Leaves easily fall off plants after flowering (anthesis).

Stems: Form a low-growing, dense, mat and have a base that is woody and persists into the next year (caudex).

Plants: Are 5 cm tall by 5-10 cm in diameter and bloom from June to July.

SITE AND HABITAT

Commonly found in the central areas of the INL Site growing in sandy soils but can occur across a range of soils.

NOT TO BE MISTAKEN FOR

PHHO: Petals are fused, trumpet shaped, extend out of the calyx, bear 5 stamens, and leaves remain attached to the plant after anthesis. **LIWA:** Flowers have 6 petals.

AKA: *Eremogone franklinii*

Fun Facts: Flowers are dehiscent meaning they easily fall off the plant.



COMMON NAME

Holboell's rockcress

FAMILY

Mustard (*Brassicaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have distinct stalks (pedicels) that grow along the main flowering stalk in a raceme arrangement. There are 4 white petals, 4 green sepals, and 6 stamens.

Fruits: Are elongated tube-like pods that split open along a central partition (silique), are thin, straight, and dangle downwards.

Leaves: Occur around the base and along the stem; basal leaves form a rosette and are lance shaped while stem leaves are alternately arranged, have a clasping lobed base (auriculate), and are attached directly to the stem (sessile).

Stems: Often single and arising from a base that persists to the following year (caudex) and covered in small, frayed hairs (stellate) with 5-8 strands.

Plants: Are 10-90 cm tall and bloom from April to June.

SITE AND HABITAT

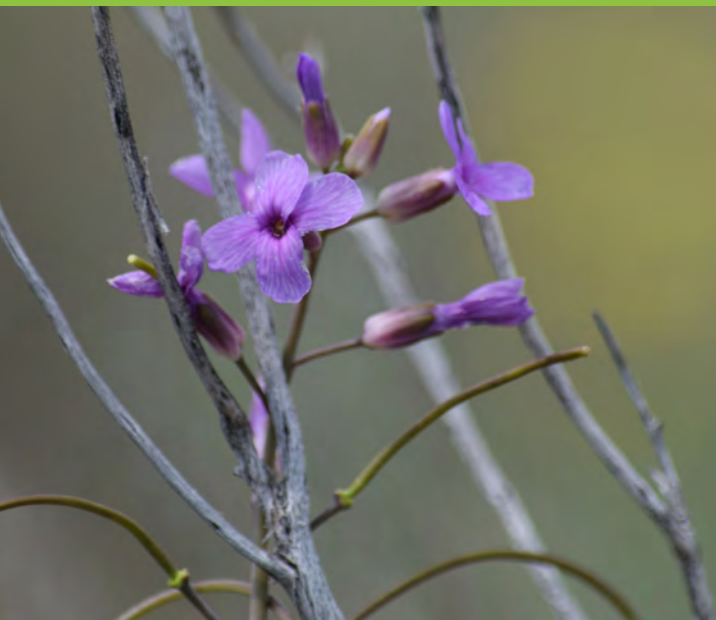
Found across the INL Site in shrublands and grasslands on medium to coarse textured and sometimes gravelly soils.

NOT TO BE MISTAKEN FOR

ARLI: Fruits are curved semi-circles. **ARCO:** Fruits stick out at sporadic angles from the mid-point of the flower stalk to the tip-top.

AKA: *Boechera holboellii*

Fun Facts: The Arabis genus complex is undergoing substantial taxonomic revision because species readily hybridize with one another due to multiple sets of chromosomes (polyploidy), unbalanced number of chromosomes (aneuploidy), and asexual production of seeds (apomixis), leading to overlapping morphological traits that complicate species identification.



COMMON NAME

woody-branched rockcress

FAMILY

Mustard (Brassicaceae)

IDENTIFYING CHARACTERISTICS

Flowers: Have distinct stalks (pedicels) that grow along the main flowering stalk in a raceme arrangement. There are 4 lavender petals, 4 green sepals, and 6 stamens.

Fruits: Are elongated tube-like pods that split open along a central partition (silique), and are thin, curved semi-circles.

Leaves: Occur around the base and along the stem; basal leaves form a rosette and are lance shaped, while stem leaves are alternately arranged, have a clasping lobed shaped base (auriculate), and are attach directly to the stem (sessile).

Stems: Often branch near the ground from a base that persists to the following year (caudex) and are covered in small, frayed hairs (stellate) with 4-7 strands.

Plants: Are 50-80 cm tall and bloom from April to June.

SITE AND HABITAT

Found across the INL Site in protected microsites within sagebrush stands in a range of medium to coarse textured soils.

NOT TO BE MISTAKEN FOR

ARHO: Fruits dangle downwards. **ARCO:** Fruits stick out at sporadic angles beginning midway up the stem.

AKA: *Boechera lignifera*

Fun Facts: In 2004, the *Arabis* genus was reclassified into the *Boechera* genus. However, this guidebook follows the USDA Plants Database, which takes a slower, more calculated approach to nomenclature revisions.



COMMON NAME

Torrey's milkvetch

FAMILY

Pea (*Fabaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have an upper petal (banner), a lower projecting keel-like petal (keel), and two wing-like petals (wing), resembling a butterfly (papilionaceous). The banners are lavender, the keels are purple, and the wings are pink to white.

Fruits: Are two chambered pods that are laterally flattened (compressed). They are oblong, curved, and covered with coarse hairs.

Leaves: Are divided at 1 level (pinnate) and bear small leaflets that have a single terminal leaflet (odd-pinnate). Leaflets occur in groups of 3-7 per leaf, have rounded tips, and are clustered near the leaf apex. The leaflets appear silvery because of stiff, straight hairs that lay flat in the same direction.

Plants: Are 5-10 cm tall, are tufted, and bloom from April to June.

SITE AND HABITAT

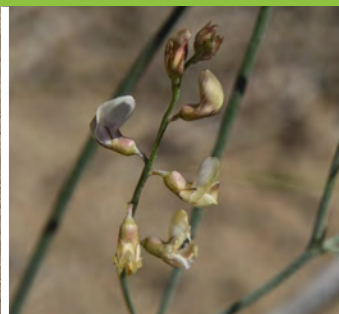
Found across the INL Site on basalt outcroppings and in playas.

NOT TO BE MISTAKEN FOR

ASPU: Pods are single chambered and covered in fluffy hairs resembling a cotton ball; leaflets have multi-directional hairs and are not clustered near the leaf apex.

AKA: None

Fun Facts: The genus Astragalus is derived from 'astragalos' meaning 'ankle bone' possibly referring to the shape of the leaves or pods.



COMMON NAME

painted milkvetch

FAMILY

Pea (*Fabaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have an upper petal (banner), a lower projecting keel-like petal (keel), and two wing-like petals (wing), resembling a butterfly (papilionaceous). The banners and wings are light purple to cream and the keels have a purple tip.

Fruits: Are single chamber pods that are inflated, oval, and mottled red.

Leaves: Are slender, thread-like, and range between 1-12 cm in length.

Stems: Are covered in soft hairs (pubescent).

Plants: Are 2-17 cm tall, with an outstretched, dainty growth habit, and bloom from May to August.

SITE AND HABITAT

Found in the center of the INL Site to the western borders in sandy soils.

NOT TO BE MISTAKEN FOR

ASCO: Pods are laterally flattened (compressed), linear, and ash-colored from fine white hairs (cinereous).

AKA: None

Fun Facts: Only the variety A. c. var. apus has been documented to occur within the INL Site. It is endemic to Idaho and Montana and is designated as a vulnerable subspecies both globally and in the State of Idaho.



COMMON NAME

curvepod milkvetch

FAMILY

Pea (*Fabaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have an upper petal (banner), a lower projecting keel-like petal (keel), and two wing-like petals (wing), resembling a butterfly (papilionaceous). The banner, keel, and wing petals are off-white to yellow cream. The banners are > 15 cm long.

Fruits: Are single chambered pods, are laterally flattened (compressed), and are curved into coiled loops.

Leaves: Are divided divided at 1 level (pinnate) and bear small leaflets that have a single terminal leaflet (odd-pinnate). There are 7-21 green leaflets per leaf; leaflets range in shape from oblong to elliptic and can have notched tips.

Plants: Are 10-40 cm tall, vary in growth habits from sprawling, to nodding, to ascending, and bloom from May to July.

SITE AND HABITAT

Found across the INL Site on medium to coarse textured soils of dry, hillsides and rocky basalt outcroppings.

NOT TO BE MISTAKEN FOR

ASLE: Pods are inflated, have two chambers, and do not coil. The keels are often purple.

ASGE: Pods are inflated and do not coil.

AKA: None

Fun Facts: How does an ecology intern ask a question to a botanist? "May I ASCU a plant question?"



COMMON NAME

basalt milkvetch

FAMILY

Pea (*Fabaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have an upper petal (banner), a lower projecting keel-like petal (keel), and two wing-like petals (wing), resembling a butterfly (papilionaceous). The banners, keels, and wings are white to cream.

Fruits: Are single chambered pods, are laterally flattened (compressed), and are straight to slightly bowed.

Leaves: Are divided at 1 level (pinnate) and bear small leaflets that have a single terminal leaflet (odd-pinnate). The leaflets are linear, 1-2 mm wide, and 10-20 mm long.

Plants: Grow up to 80 cm tall, have a densely bushy, unkempt growth habit, and bloom from May to June.

SITE AND HABITAT

Found across the INL Site on medium to coarse textured soils and basalt outcroppings.

NOT TO BE MISTAKEN FOR

ASCU2: Pods are inflated. **ASCO:** Pods have coarse hairs and plants have an outstretched, dainty growth habit. **ASCE:** Pods are inflated and have a mottled red coloration, and the plants have an outstretched, dainty growth habit.

AKA: None

Fun Facts: Astragalus species enrich the ecosystem by fixing nitrogen.

**COMMON NAME**

freckled milkvetch

FAMILYPea (*Fabaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have an upper petal (banner), a lower projecting keel-like petal (keel), and two wing-like petals (wing), resembling a butterfly (papilionaceous). The banners are cream to yellow and the keels have a purple tip.

Fruits: Are two chambered pods. They are inflated and are green to yellow.

Leaves: Are divided at 1 level (pinnate) and bear small leaflets that have a single terminal leaflet (odd-pinnate). There are 11-27 leaflets per leaf; leaflets are egg-shaped, are slightly hairy, and can have notched tips.

Plants: Are 10-30 cm tall, ascending in growth form, and bloom from May to June.

SITE AND HABITAT

Found across the INL Site on a wide range of soils including coarse textured materials.

NOT TO BE MISTAKEN FOR

ASCU: Pods have a single chamber, are distinctly coiled, and are flattened laterally (compressed). **ASGE:** Pods have a single chamber.

AKA: None

Fun Facts: There are 35 subspecies of Astragalus lentiginosus, and the three variants are present on the INL Site are A. lentiginosus var. platyphyllidius, A. l. var. salinus, and A. l. var. lentiginosus.



COMMON NAME

woollypod milkvetch

FAMILY

Pea (*Fabaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have an upper petal (banner), a lower projecting keel-like petal (keel), and two wing-like petals (wing), resembling a butterfly (papilionaceous). The banners are off-white, pink, or purple and the keels have a purple tip.

Fruits: Are single chambered pods. They resemble cotton balls as they are inflated and covered in white, interwoven woolly hairs (lanate).

Leaves: Are divided at 1 level (pinnate) and bear small leaflets that have a single terminal leaflet (odd-pinnate). There are 5-17 leaflets per leaf; leaflets are dispersed along the leaf and range in shape from obtuse to acute. They have fuzzy, multi-directional hairs.

Plants: Grow up to 5 cm tall, are tufted to spreading in growth habit, and bloom from April to June.

SITE AND HABITAT

Abundant across the INL Site in medium to coarse textured substrates, especially in shallow soils.

NOT TO BE MISTAKEN FOR

ASCA: Pods are two chambered. Leaves have hairs that are stiff, bristly, and lie in one direction. Leaflets are clustered at the leaf apex.

AKA: None

Fun Facts: There are five subspecies of *A. purshii*. Pictured above is *A. purshii* var. *purshii*, marked by off-white banners and purple keels.



COMMON NAME

arrowleaf balsamroot

FAMILY

Sunflower (*Asteraceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are densely clustered in a flower head (capitulum). There are flowers with 5-lobed tubes (discs) encircled by flowers with long tongue-like lobes (rays) in each capitulum (radiate). Capitula have many yellow disc flowers and 8-25 yellow ray flowers. A flowering stalk often has a terminal capitulum (solitary) but occasionally may have up to 3 capitula.

Fruits: Are hard, sealed hulls with one seed (achene), are smooth, and hairless.

Leaves: Are arrowhead shaped (sagittate); are covered in short, soft, matted hairs (tomentose); form basally; and are generally absent on flowering stalks.

Roots: Are taproots up to 3 m deep, with lateral roots extending up to 1 m.

Plants: Are 20-80 cm tall and bloom from April to July.

SITE AND HABITAT

Found in the western and southern areas of the INL Site on fine to medium textured soils, and typically occupy open hillsides with deeper soils.

NOT TO BE MISTAKEN FOR

BAHO: Leaf edge lobes do not fully extend down to the main midvein (pinnatifid). **HEAN:** Leaves and flowers are attached along the flowering stalks.

AKA: None

Fun Facts: This plant has been used medicinally as an antibacterial and the seeds were a staple in the diet of many Native American tribes. It is used in restoration work for its fire tolerance and visual appeal.

**COMMON NAME**

kochia

FAMILYGoosefoot (*Chenopodiaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Attach directly to the flowering stalk in a spike arrangement and are alternately arranged. The flowers develop from the angle formed at the leaf and stem (axillary). Flowers are not showy because they lack petals and are often hidden by 5 triangular green sepals.

Leaves: Are alternate, are lance shaped, have 3-5 distinct veins, have smooth edges, and are sparsely covered in soft, flexible hairs (villous).

Stems: Are highly branched. Immature stems are light green and often turn red at the base as they age.

Plants: Are 20-200 cm tall and bloom from May to October.

SITE AND HABITAT

Widespread across the INL Site, especially in disturbed areas and roadside.

NOT TO BE MISTAKEN FOR

CORA: Flowers have yellow petals and leaves are purple and thread-like. **SATR:** Stems have red stripes and leaves lack distinct veins. **HAGL:** Leaf tips bear a single bristle-like hair (aristulate). **GNPA:** Plants are densely covered in a tangled mat of soft woolly hairs (lanate).

AKA: *Kochia scoparia*

Fun Facts: This species is native to central and eastern Europe and Asia. It has many ethnobotanical uses but due to its adaptations to semiarid regions throughout the western U.S., it has escaped cultivation and is a common weed in agricultural fields and home gardens.

**COMMON NAME**

northwest Indian paintbrush

FAMILYFigwort (*Scrophulariaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have petals that are hidden by fused sepals (calyx) and are subtended by leaves (bracts). The calyx and bracts are often a showy magenta.

Fruits: Are dry containers that split open (capsule). The capsules are robust, off-white, and remain attached through the following growing season.

Leaves: Of the lower stem section are linear with smooth edges. Leaves of the upper stem section have 3-5 linear, spreading lobes.

Stems: Are gray to purple, hairy, and attach underground to a host plant.

Plants: Are 10-40 cm tall and bloom from May to June.

SITE AND HABITAT

Found throughout the INL Site in medium textured soils and occurs commonly with sagebrush, rabbitbrush, and bunchgrasses.

NOT TO BE MISTAKEN FOR

CAPA: Calyx and bracts are yellow to white. **CAHI:** Calyx and bracts are deep red.

AKA: None

Fun Facts: This genus is hemiparasitic meaning plants collect some of their energy from a nearby host plant and photosynthesize the rest.

**COMMON NAME**

Bruneau mariposa lily

FAMILYLily (*Liliaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have showy white to lavender petals. Near the base of each petal, there is a reddish-purple spot above a sparsely hairy, yellow gland. Petals have a green stripe on their underside. There are 3 petals, 3 sepals, and 6 stamens. Sepals are shorter than the petals and are narrowly pointed. Stamen pollen sacs (anthers) may be yellow, blue, or reddish-brown.

Leaves: Are grass-like, v-shaped in cross section, have a white powdery coating (glaucous), and 10-15 cm long.

Roots: Are bulbs.

Plants: Are 20-40 cm tall and bloom from May to July.

SITE AND HABITAT

Found scattered throughout the INL Site growing in open grasslands and sagebrush communities, especially in rocky areas.

NOT TO BE MISTAKEN FOR

CAMA: Sepals are longer than the petals. *Calochortus nuttallii*: Petals lack a vertical green stripe on their underside.

AKA: None

Fun Facts: In Greek, 'kalo' means beautiful and 'chortos' means grass.

**COMMON NAME**

small evening primrose

FAMILYEvening-primrose (*Onagraceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have 4 petals and 4 sepals. Petals are white to pinkish, fading to red, and are 0.8-1.3 mm long.

Fruits: Are dry containers that split open (*capsule*). The capsules are 2- to 4-parted, are curled to straight, are cylindrical, and are 0.8-1.2 mm in diameter.

Leaves: Occur basally and along the stems. Leaves are larger and more abundant near the base of plants and become reduced in size and frequency towards the tips of stems. Leaves are alternate and oval- to lance-shaped and have smooth to slightly toothed edges.

Stems: Are slender, hairy, and glandular.

Plants: Are 3-30 cm tall and bloom at dusk from May to June.

SITE AND HABITAT

Found across the INL Site often near old ant mounds or in loess soils in rocky areas.

NOT TO BE MISTAKEN FOR

CABO: Petals are 4-9 mm long. **CAAN2:** Petals are yellow and plants lack basal leaves.

CACO: Petals are yellow and leaves are lance shaped.

AKA: *Eremothera minor*, *Oenothera minor*

Fun Facts: Evening-primrose species often have flowers with 4 petals, 4 sepals, and 4-lobed stigmas. Their delicate flowers fall off quickly, but robust 2- to 4-parted capsules remain attached even after the plants die.



COMMON NAME

musk thistle

FAMILY

Sunflower (*Asteraceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are densely clustered in a flower head (capitulum). Only flowers with 5-lobed tubes (disc) occur in the capitula (discoid) and disc flowers are purple. Capitula are 2-5 cm wide and tilted or nodding. The leaves that are appressed to the capitulum (phyllaries) are 2-7 mm wide, triangular, flat, splayed, and prickly.

Fruits: Are hard, sealed hulls with one seed (achene) and have a crown of modified sepals (pappus) that are coarse bristles with barbs.

Leaves: Attach directly to the stem (sessile), are 6-20 cm long, have edges lobed at 1 level (pinnatifid), and are spiny.

Plants: Are 1-2 m tall, typically have a basal rosette of leaves in their first year and grow flowering stalks in their second year; they bloom from June to August.

SITE AND HABITAT

Found across the INL Site as scattered individuals to dense stands, but highly dense populations are generally restricted to disturbed or heavily grazed areas.

NOT TO BE MISTAKEN FOR

CIVU & CIAR: Pappus lacks barbs and phyllaries are < 1 mm wide. **ONAC:** Phyllaries are < 1 mm wide and stems are spiny-winged. **CISU:** Phyllaries are < 1 mm wide and disc flowers are white.

AKA: *Carduus macrocephalus*

Fun Facts: The word "Carduus" means thistle in Latin.

**COMMON NAME**

Douglas' dustymaiden

FAMILYSunflower (*Asteraceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are densely clustered in a flower head (capitulum). Only flowers with 5-lobed tubes (disc) occur in the capitulum (discoïd). The disc flowers are white with pink stamens. The flower stalks are highly branched with the youngest capitula growing at the tips of elongating branches in a cyme arrangement. The leaves that are appressed to the capitulum (phyllaries) may have sticky glands.

Fruits: Are hard, sealed hulls with one seed (achene) and bear a crown of modified sepals (pappus) that are paper-like, oblong scales.

Leaves: Grow along the stem and around the base, have edges lobed at 2 levels (bipinnatifid), and have short, soft, matted hairs (tomentose).

Plants: Are 1-50 cm tall, often have a basal rosette of leaves in their first year, grow flowering stalks in their second year, and bloom from June to July.

SITE AND HABITAT

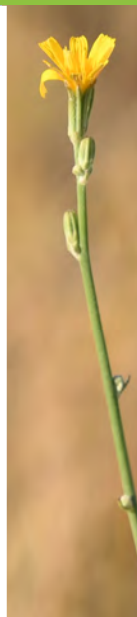
Widespread across on the INL Site in medium to coarse textured soils such as rocky or sandy areas.

NOT TO BE MISTAKEN FOR

ACMI: Capitula have flowers with long tongue-like lobe (ray) and disc flowers (radiate), have white petals, and the achenes lack pappi.

AKA: *C. angustifolia*, *C. pedicularia*, *C. pumila*, *C. ramosa*

Fun Facts: Ethnobotanical uses include treating minor swelling and headaches.

**COMMON NAME**

rush skeletonweed

FAMILYSunflower (*Asteraceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are densely clustered in a flower head (capitulum). Only flowers with long tongue-like lobes (ray) are found in the capitulum (ligulate). Capitula have 9-12 yellow ray flowers and are scattered along the flowering stem.

Fruits: Are hard, sealed hulls with one seed (achene), are round to cylindrical, and have a thin stalk (beak) with a tuft of modified sepals (pappus) that are soft, white bristles.

Leaves: Have irregularly lobed edges with spinless midribs and are mostly basal. They are 4-12 cm long by 2-5 cm wide and whither at flowering (anthesis). Stem leaves are reduced to scale-like attachments.

Stems: Are slender, flexible, and highly branched. The base is covered in stiff hairs.

Plants: Are 50-100 cm tall, have milky sap (lactiferous), and bloom July to October.

SITE AND HABITAT

Found scattered throughout the south and central portions of the INL Site.

NOT TO BE MISTAKEN FOR

PLSP: Flowers have pink petals, stems are spine-tipped, and basal leaves are absent.

SIAL: Plants are not lactiferous, do not have capitula, and flowers have 4 separate petals.

LASE: Leaf midribs have spines. ***Lactuca biennis*, LAVI, & LATA:** Achenes are flat.

AKA: None

Fun Facts: Rush skeletonweed can reproduce new plants vegetatively from either root buds or from root fragments (adventitious) and populations typically expand by this underground regeneration process.

**COMMON NAME**

narrowleaf goosefoot

FAMILY

Goosefoot (*Chenopodiaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are tightly packed into bundles (glomerules) which attach to distinct stalks (pedicels) to form solitary terminal glomerules on laterally branching stems (panicle). Glomerules develop from the angle formed at the leaf and stem (axillary) and are inconspicuous.

Fruits: Are smooth to slightly wrinkly. They are 0.8-1.1 mm long.

Leaves: Have a single vein, are slim, lance shaped, and 5-30 mm long, with smooth edges. The undersides of the leaves are covered in small, white particles (farinose) that shimmer in the sunlight.

Plants: Are 10-80 cm tall and bloom from July to August.

SITE AND HABITAT

Found sparsely dispersed across the INL Site often in open, sandy soils.

NOT TO BE MISTAKEN FOR

CHAL: Leaf edges have goose foot-like lobes (pedate) and are > 30 mm long. **CHFR:**

Leaves are 3-veined and pedate. **CHBE:** Leaves are 3-veined and are > 30 mm long.

CHSU: Leaves lack farinose undersides.

AKA: *Chenopodium album* var. *leptophyllum*

Fun Facts: In Greek, the specific epithet (*lepto-phyllum*) means "narrow-leaf".

**COMMON NAME**

Canada thistle

FAMILYSunflower (*Asteraceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are densely clustered in a flower head (capitulum). Only flowers with 5-lobed tubes (disc) occur in the capitulum (discoid). The disc flowers are typically purple but can be white. All the capitula are < 2 cm tall by 2 cm wide. The flowering stalks can bear many capitula but can have 1 capitulum (solitary). The leaves that are appressed to the capitulum (phyllaries) are thin.

Fruits: Are hard, sealed hulls with one seed (achene), have a crown of modified sepals (pappus) that are stiff, white hairs.

Leaves: Have spineless upper surfaces and have edges lobed irregularly with many yellow spines. The basal rosettes wither and fall off at flowering (anthesis).

Stems: Are branched, creep underground (rhizomatous), and upper stem sections lack internodal spiny wing-like connective tissues (spiny-winged).

Plants: Are 50-150 cm tall and bloom from July to August.

SITE AND HABITAT

Found throughout the INL Site but more often in disturbed areas.

NOT TO BE MISTAKEN FOR

CIVU: Upper leaf surfaces are covered in spines and stems are spiny-winged. **ONAC:** Stems are spiny-winged. **CANU:** Flower stalks bear solitary capitulum, and phyllaries are > 2 mm wide. **CISU:** Disc flowers are white and capitula are > 2 cm wide.

AKA: *Cirsium incanum*

Fun Facts: This Mediterranean species has been used as a medicinal herb for centuries.

**COMMON NAME**

Jackson Hole thistle

FAMILYSunflower (*Asteraceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are densely clustered in a flower head (capitulum). Only flowers with 5-lobed tubes (disc) occur in the capitulum (discoid). The disc flowers are white to lavender. Capitula are 2.5-5 cm wide by 2-3 cm tall. The leaves that are appressed to the capitulum (phyllaries) are 2-6 mm long, tapered, and spiny.

Fruits: Are hard, sealed hulls with one seed (achene) and have a crown of modified sepals (pappus) that are coarse bristles with barbs.

Leaves: Attach directly to the stem (sessile), have spines along the leaf edge, and have edges lobed at 1 level (pinnatifid).

Stems: Lack spiny connective tissues (spiny-winged) between the leaf attachment points (node) and along the stem sections in between (internode).

Plants: Are 30-100 cm tall, typically have a basal rosettes of leaves in their first year, grow flowering stalks in their second year, and bloom from June to August.

SITE AND HABITAT

Found scattered across the INL Site on basalt or rocky outcroppings.

NOT TO BE MISTAKEN FOR

CIVU, ONAC, CIAR, CANU: Disc flowers are purple. **CIVU:** Upper leaf surfaces are spiny. **ONAC:** Stems are spiny-winged. **CIAR:** Capitula are < 2 cm wide. **CANU:** Phyllaries are flat, broad, and splayed.

AKA: *Cirsium inamoenum*, *Carduus nevadensis*, *C. davisii*, *C. humboldtense*

Fun Facts: Native thistles do not have spiny-winged stems.

**COMMON NAME**

bushy bird's beak

FAMILYFigwort (*Scrophulariaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have yellow petals that are hidden by maroon-colored fused sepals (calyx) and are subtended by leaves (bracts). The flower heads are attached directly to the flower stalk in a spike arrangement and there are multiple flowering spikes forming a compound spike arrangement.

Leaves: Are alternately arranged along the stem. The upper stem leaves are more crowded compared to the lower stem leaves. Each leaf has 1 to 3 deep, linear, thread-like lobes and blades are covered in soft hairs, lack distinct leaf venation, and are maroon to yellow-green.

Stems: Often branch above the base.

Plants: Are 10-60 cm tall and bloom from June to August.

SITE AND HABITAT

Found widespread across the INL Site in dry, open sagebrush plant communities.

NOT TO BE MISTAKEN FOR

BASC: Flowers are not showy and grow from the angle formed at the leaf and stem (axillary). Leaves are green, are lance shaped, are not lobed, and blades have 3-5 distinct midveins.

AKA: None

Fun Facts: This species is hemiparasitic, meaning it generates some of its energy from photosynthesis and takes the rest from the host plant. It has been documented as a hemostatic by several Native American tribes.

**COMMON NAME**

bastard toadflax

FAMILYSandalwood (*Santalaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Lack petals but instead have showy sepals that resemble petals and are white to pink. Highly branched elongating shoots grow new distal flower clusters in a cyme arrangement.

Fruits: Are hard, dry, and stone-like (drupe), and range from blue to brown.

Leaves: Are alternate, entire, lance shaped, leathery, and covered in a white, waxy coating (glaucous).

Stems: Creep underground (rhizomatous)

Roots: Have a blue pigmented endodermis.

Plants: Are 5-40 cm tall and bloom from April to June.

SITE AND HABITAT

Widespread across the INL Site in sandy, well-draining soils.

NOT TO BE MISTAKEN FOR

IVAX: Flowers grow from the angle formed at the leaf and stem (axillary), petals are white, and leaves are hairy.

AKA: None

Fun Facts: This is a hemiparasitic plant, meaning it generates some of its energy from photosynthesis and takes the rest from a host plant. It is the only species in this genus (monotypic).



COMMON NAME

tapertip hawkbeard

FAMILY

Sunflower (*Asteraceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are densely clustered in a flower head (capitulum). Only flowers with a long tongue-like lobe (ray) occur in the capitulum (ligulate). There are 5-10 yellow ray flowers per capitulum. The leaves that are appressed to the capitulum (phyllaries) are nearly hairless and are 2-3 mm wide. Plants have 30-100 capitula per flower stalk.

Leaves: Have tapered tips. The basal leaves have edges lobed at 1 level (pinnatifid) and are covered in short, soft, matted hairs (tomentose). The stem leaves are reduced to scale-like attachments as they ascend the stem.

Plants: Are 20-60 cm tall, have milky sap (lactiferous), and bloom from May to July.

SITE AND HABITAT

Widespread across the INL Site and common in a range of soil types.

NOT TO BE MISTAKEN FOR

CROC: Phyllaries are 5-10 mm wide and have gray tomentose hairs. **CRAT:** Leaves are divided at 1 level (pinnate). **CRRU:** Phyllaries are 8-12 mm wide and basal leaves are hairless (glabrous). **CRMO:** Phyllaries have white to black tomentose hairs. **CRIN2:** Phyllaries have tomentose hairs.

AKA: None

Fun Facts: This plant is reported to be an important forage for sage-grouse (Centrocercus urophasianus) and attracts both generalist and specialized pollinators.

**COMMON NAME**

cushion cryptantha

FAMILYForget-me-not (*Boraginaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have fused petals shaped like a funnel (funnelform) with 5 lobes that are small and white to pale yellow. Flowers attach directly to the flowering stalk (sessile) from the angle formed at the leaf and stem (axillary). The elongating flower shoots grow new distal flower clusters in a cyme arrangement.

Fruits: Are dry containers that split open (capsules). They have 3-4 small raindrop shaped nuts (nutlets) and the nutletshells are rough.

Leaves: Are 0.5-1.5 mm wide and are sessile.

Stems: Branch at the soil surface forming low growing cushion plants and are rigid, rough, and never succulent-like.

Plants: Are covered in stiff, glass-like hairs (hispid), are 1-6 cm tall, lack a primary flower stalk (sympodial), and bloom from April to May.

SITE AND HABITAT

Found in the interior of the INL Site in dry, open places with sandy soils. They are often associated with the coarse material around ant mounds.

NOT TO BE MISTAKEN FOR

CRKE: Leaves are 5-10 mm wide and plants are 10-35 cm tall. **NADE:** Stem bases are succulent-like and plants are covered in long, soft shaggy hairs (villous).

AKA: *Greeneocharis circumscissa*

Fun Facts: The slender taproot of mature plants can develop a deep red to purple pigment.



COMMON NAME

Elko cryptantha

FAMILY

Forget-Me-Not (*Boraginaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have fused petals shaped like a funnel (funnelform) with 5 white lobes that are 4-8 mm wide, and the funnelform throat is yellow. The elongating spiral flower shoots grow new distal flower clusters in a helicoid cyme arrangement.

Fruits: Are dry containers that split open (capsules). They have 4 small raindrop shaped nuts (nutlets) that are equal in size with rough nutletshells.

Leaves: Have stiff, glass-like hairs (hispid), are up to 8 mm wide by 60 mm long, are shaped like a canoe, and form basal tufts. Stem leaves are alternate and become sparse at the stem apex.

Stems: Branch from a base that persists to the following year (caudex).

Plants: Are covered in hispid hairs, are 15-40 cm tall, and bloom from May to July.

SITE AND HABITAT

Found widespread on the INL Site in open, dry places with sandy to rocky soils.

NOT TO BE MISTAKEN FOR

CRSC: Plants are annual, form low growing cushions, and leaves are < 1.5 mm wide.

CRKE: Leaves are 10-20 mm long and nutlets are unequal in size.

AKA: *Cryptantha spiculifera*, *Oreocarya spiculifera*

Fun Facts: The Forget-Me-Not family is distinguished by alternate leaves that often have hispid hairs and flowers that have 5 petals, 5 sepals, 5 stamens, and a pistil with 2 lobes.

**COMMON NAME**

desert cryptantha

FAMILYForget-Me-Not (*Boraginaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have fused petals shaped like a funnel (funnelform) with 5 white lobes that are 0.5-2.5 mm wide. The elongating spiral flower shoots grow new distal flower clusters in a helicoid cyme arrangement.

Fruits: Are dry containers that split open (capsules). They have 4 small raindrop shaped nuts (nutlets) with tapered tips.

Leaves: Are linear, 1-3 mm wide, have stiff, glass-like hairs (hispid) with bulbous bases. Stem leaves are alternate and become sparse at the stem apex.

Plants: Are covered in hispid hairs, are 10-35 cm tall, and bloom from May to July.

SITE AND HABITAT

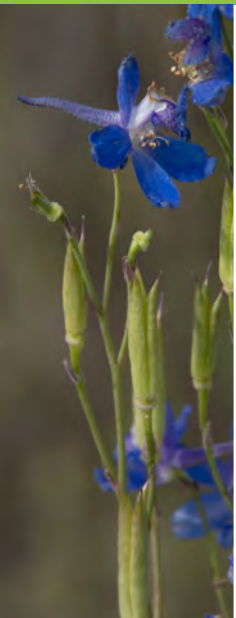
Found across the INL Site in shrubland and juniper woodland communities with sandy to rocky soils.

NOT TO BE MISTAKEN FOR

CRTO, CRAM, CRWA & CRFE: Nutlets are smooth. **CRKE:** Leaves are 5-10 mm wide and nutlets are unequal in size. **CRCI:** Plants are 1-6 cm tall. **CRIN:** Plants are perennial and petal lobes are 4-8 mm wide.

AKA: None

Fun Facts: The name 'crypt-antha' roughly translates from Greek to 'hidden-flower' referring to the capability of some species in this genus to self-fertilize.



COMMON NAME

Anderson's larkspur

FAMILY

Buttercup (*Ranunculaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are attached to distinct stalks (pedicels) that grow from the main flowering stalk in a raceme arrangement. The pedicels are s-shaped. The 5 sepals are hairless (glabrous), blue, egg-shaped, and have a 12-18 mm long spur. The 4 cryptic interior petals have purple to blue veins. The upper pair of petals are slightly notched and are white to purple while the bottom pair of petals are deeply notched, hairy, and are purple to blue.

Fruits: Are pods that split open from their sides (follicle), are glabrous, are in groups of 3, and are 17-30 mm long.

Leaves: Form distinct basal rosettes. The stem leaves become smaller and sparser as they ascend the flowering stem. Leaves have edges that are cleaved into 5 lobes (palmatifid), are dark green with a red tinge, and wither soon after flowering (anthesis).

Plants: Are 10-60 cm tall and bloom from May to June.

SITE AND HABITAT

Widespread across the INL Site in coarse textured soils.

NOT TO BE MISTAKEN FOR

DENU: Pedicels are nearly straight and the sepals are hairy. **DEBI:** Sepals are orb-shaped and are hairy, and follicles are hairy. **DEGL:** Sepal spurs are 9-13 mm long and the fruit follicles are hairy.

AKA: *Delphinium cognatum*, *D. scaposum* var. *andersonii*

Fun Facts: All species in this genus have toxic alkaloids.

**COMMON NAME**

western tansymustard

FAMILYMustard (*Brassicaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Attach to distinct stalks (pedicel) that grow from the main flowering stalk in a raceme arrangement. They have 4 off-white to yellow petals, 4 green sepals, and 6 stamens.

Fruits: Are elongated tube-like pods that split open along a central partition (silique), are 4-15 mm long, and are attached to 10-20 mm long pedicels.

Leaves: Are alternately arranged, have edges lobed at 2 levels (bipinnatifid), are glandular, and are green.

Plants: Are 5-80 cm tall and bloom from April to June.

SITE AND HABITAT

Found across the INL Site in dry soils within the sagebrush steppe.

NOT TO BE MISTAKEN FOR

DESO: Pods are 15-30 mm long, pedicels are 8-14 mm long, leaves have edges lobed at 3 levels (tripinnatifid), and are grey. **SCLI:** Pods are 2-6.5 cm long and leaf edges are entire or occasionally toothed. **SIAL:** Leaves form a distinct basal rosette and pods are 6-12 cm long.

AKA: None

Fun Facts: This species complex has five recognized subspecies and it is a host plant for many butterfly species.



COMMON NAME

herb Sophia

FAMILY

Mustard (*Brassicaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Attach to distinct stalks (pedicel) that grow from the main flowering stalks in a raceme arrangement. They have 4 light yellow petals, 4 green sepals, and 6 stamens.

Fruits: Are linear pods that have a central, thin partition (silique), are 15-30 mm long, and are attached to ascending pedicels that are 8-14 mm long.

Leaves: Are alternate, have edges lobed at 3 levels (tripinnatifid); they appear fern-like and often have a greyish appearance from minute stellate hairs.

Plants: Are 20-100 cm tall and bloom from May to June.

SITE AND HABITAT

Commonly occur in disturbed soils of facilities, roadsides, and agricultural fields.

NOT TO BE MISTAKEN FOR

DEPI: Fruit pods are 4-15 mm long, pedicels are 10-20 mm long, leaves have edges lobed at 2 levels (bipinnatifid), have glands, and are green. **SCLI:** Fruit pods are 2-6.5 cm long and leaf edges are smooth to occasionally toothed. **SIAL:** Fruit pods are 6-12 cm long and plants form distinct basal rosettes that wither at flowering (anthesis).

AKA: *Sisymbrium sophia*

Fun Facts: The genus is named after French botanist, Francois Descurain (1658-1740).

**COMMON NAME**

nodding buckwheat

FAMILYBuckwheat (*Polygonaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Occur in clusters inside a whorl of fused leaves (involucre) on a highly branched primary flowering stalk (peduncle) and are in a pedunculate arrangement. The involucres are tiny, dangling like chandeliers from the first degree peduncles up to 2.5 cm long but involucres can also be directly attached to the stem (sessile). The sepals and petals are indistinguishable (tepals), are white to pinkish rose or red, are 1.5-2 mm long, and have ruffled edges.

Leaves: Form a small basal rosette that is 1-3 cm tall by 2-8 cm in diameter. The flat, fan shaped leaves are attached to distinct stalks (petioles) that are 3-25 mm long and are covered in short, soft, matted hairs (tomentose).

Stems: Are dark brown to red, and hairless (glabrous).

Plants: Are 5-15 cm in height and bloom from July to August.

SITE AND HABITAT

Widespread across the INL Site in medium to coarse textured soils.

NOT TO BE MISTAKEN FOR

ERHO: Involucres are strictly sessile. ***Eriogonum baileyi* var. *baileyi*:** Involucres stand upright and stems are hairy. **OXDE:** Involucres have thin needle-like extensions (awns) and basal leaves are thin and narrow.

AKA: *Eriogonum cernuum* ssp. *viminale*, *E. c.* ssp. *tenue*, *E. c.* ssp. *cernuum*

Fun Facts: The Buckwheat family is identified by alternate leaves and flowers with 5-6 tepals, 6-9 stamens, and a pistil with 2-3 lobes.

**COMMON NAME**

cushion buckwheat

FAMILYBuckwheat (*Polygonaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Occur in clusters in a whorl of fused leaves (involucre). Flowers are fused together at a single point in an umbel arrangement on a primary flowering stalk (peduncle) that is leafless. Involucres are often hidden, covered in delicate woolly hairs (floccose) and have erect teeth. The sepals and petals are indistinguishable (tepals) and are white to yellow or pinkish to reddish.

Leaves: Form a basal rosette that is 5-10 cm tall with oval to slightly elongated leaves that are 2-60 mm long by 2-15 mm wide, and are floccose.

Stems: Grow from a base that persists into the next growing season (caudex).

Plants: Are 10-30 cm tall, tufted, and bloom from April to August.

SITE AND HABITAT

Found across the INL Site on medium to coarse textured soils and on rock outcroppings.

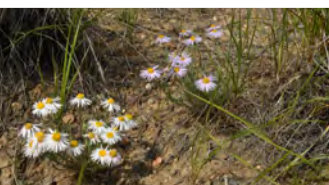
NOT TO BE MISTAKEN FOR

ERUM: Involucres are distinctly showy and plants have a sprawling appearance.

ERHE: Peduncles have whorls of leaves. **ERCA3:** Involucres have reflexed teeth.

AKA: None

Fun Facts: Subspecies often differ in petal color. In general, *E. o. var. ovalifolium* has yellow petals, *E. o. var. pansum* has white petals, and *E. o. var. purpureum* has white, rose, or purple petals.

**COMMON NAME**

shaggy fleabane

FAMILYSunflower (*Asteraceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are densely clustered in a flower head (capitulum). There are flowers with 5-lobed tubes (disc) encircled by flowers with a long tongue-like lobe (ray) in each capitulum (radiate). Capitula are 4-7 mm wide, have many yellow disc flowers, and have 50-100 lavender to white ray flowers. The flowering stalks bear 1-5 capitula.

Fruits: Are hard, sealed hulls with one seed (achene) and have double crowns of modified sepals (pappus) that are bristly.

Leaves: Occur basally and alternately up the stem, and are covered in stiff hairs (hirsute). Leaves have 1 vein, are 20-80 mm long by 1-4 mm wide, and have entire margins.

Stems: Are upright, glandular, hispid, and occasionally branch.

Plants: Are 5-30 cm tall, form dense basal tufts, and bloom in June.

SITE AND HABITAT

Common across the INL Site in medium to coarse textured soils.

NOT TO BE MISTAKEN FOR

ERFI: Stems lack glands and plants have stiff hairs that lie flat (strigose). **TOFL:** Capitula are 16-20 mm wide, ray flower petals are pink to white, and leaves are spatula shaped.

AKA: None

Fun Facts: This species typically has white to pink ray petals but the rare lavender variant is found across on the INL into the surrounding landscape.



COMMON NAME

Wilcox's woollystar

FAMILY

Phlox (*Polemoniaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have fused petals shaped like a funnel (funnelform) and have 5 distinct petal lobes that are light blue to lavender but fade to white, are 9-12 mm long, and have tapered tips. The funnelform flower emerges from a whorl of small leaves (bracts) that are covered in short, soft, matted hairs (tomentose). The flowering stalks can have a single terminal flower (solitary) or are highly branched elongating flower shoots that grow new distal flower clusters in a cyme arrangement to form a rounded terminal cluster.

Leaves: Are alternate, linear, and thread-like with 3-5 lobes. They are covered in delicate, removable woolly hairs (floccose). They do not emit a pungent odor when crushed.

Plants: Are 1-20 cm tall and bloom from May to June.

SITE AND HABITAT

Found across the INL Site in coarse soils, like sand or rocky outcrops, in sagebrush steppe communities.

NOT TO BE MISTAKEN FOR

IPCO: Petals are white, 3-5 mm long, and crushed leaves typically emit a pungent odor.

***Eriastrum signatum*:** Petals have a maroon spot and leaves lack lobes.

AKA: *Eriastrum sparsiflorum* var. *wilcoxii*

**COMMON NAME**

spreading groundsmoke

FAMILYEvening-primrose (*Onagraceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Grow on distinct stalks (pedicels) that ascend from branching lateral stems in a panicle arrangement, which are spreading to open, each with a solitary terminal flower (solitary). The flowers are small and have 4 white to pink petals that are 1-8 mm long.

Fruits: Are hard, dry containers that split open (capsules), are 4-parted, are 3-15 mm long, and are on ascending pedicels.

Leaves: Are linear, alternate, bright green, and have smooth edges.

Stems: Are highly branched above the base, dainty, spreading, and red.

Plants: May reach 10-50 cm tall and bloom from June through August.

SITE AND HABITAT

Scattered throughout the INL Site on dry, coarse-textured soils in sagebrush steppe communities.

NOT TO BE MISTAKEN FOR

GARA: Flowers lack pedicels and fruit capsules are 15-20 mm long. **GARA2:** Pedicels dangle downwards.

AKA: None

Fun Facts: This genus is named after the French botanist, Claude Gay (1800-1873), who conducted scientific surveys for the Chilean government and gained Chilean citizenship after authoring 'La Historia Física y Política de Chile' (1854). He traveled extensively across Chile and Peru, as well as vast regions in western Europe and northern China.



COMMON NAME

shy gilia

FAMILY

Phlox (*Polemoniaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have fused petals shaped like a funnel (funnelform), with 5 distinct petal lobes that are purple to lavender, are 6-12 mm long, and have rounded tips. The fused petal funnel is yellow and is exerted from the 5 fused sepals (calyx). The flowers attach to distinct stalks (pedicels) and form solitary terminal blooms on laterally branching stems in a panicle arrangement.

Fruits: Are seed containers that split open (capsules) with 3 cavities (locules). There are 4-8 seeds per locule and seeds are mucilaginous.

Leaves: Form a weak basal rosette and stem leaves are smaller. Leaves have edges lobed at 2 levels (bipinnatifid) and grow a tangled mess of cobwebby hairs (arachnoid).

Stem: Bases have arachnoid hairs, while the upper portions have glandular hairs.

Plants: Are 5-40 cm tall and bloom from May to June.

SITE AND HABITAT

Found in the center to western areas of the INL Site in open, dry, well-drained soils.

NOT TO BE MISTAKEN FOR

ALLE, ALLO, GISI: Stems lack arachnoid hairs. **GITW:** Funnelform flowers are included within the calyx. **GIBR & GIMO:** Petal funnel is purple. **IPMI:** Basal rosette is absent.

AKA: *Gilia inconspicua* var. *inconspicua*

Fun Facts: This genus was named after Felipe Luis Gil (1756-1821), a Spanish botanist.

**COMMON NAME**

Tweedy's gilia

FAMILYPhlox (*Polemoniaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have fused petals shaped like a funnel (funnelform), have 5 distinct petal lobes that are blue to lavender, are 3-6 mm long, and have rounded tips. The fused petal funnel is yellow to white and is included within the 5 fused sepals (calyx). The flowers attach to distinct stalks (pedicels) and form solitary terminal blooms on laterally branching stems in a panicle arrangement.

Fruits: Are hard, dry containers that split open (capsules) with 3 cavities (locules). There are 2-4 seeds per locule and seeds are mucilaginous.

Leaves: Form a weak basal rosette and larger than stem leaves. Leaves have edges lobed at 2 levels (bipinnatifid) and grow a tangled mess of cobwebby hairs (arachnoid).

Stem: Bases are covered in arachnoid hairs and upper portions have glandular hairs.

Plants: Are 5-35 cm tall and bloom from May through June.

SITE AND HABITAT

Found on the western INL Site boundary in ephemerally wet, well-draining soils.

NOT TO BE MISTAKEN FOR

ALLE, ALLO, & GISI: Flowers are exerted from the calyx and leaves lack arachnoid hairs.

GIIN, GIBR, & GIMO: Flowers are exerted from the calyx. **IPMI:** Plants lack a basal rosette.

AKA: *Gilia sinuata* var. *tweedyi*, *G. inconspicua* var. *tweedyi*



COMMON NAME

curlycup gumweed

FAMILY

Sunflower (*Asteraceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are densely clustered in a flower head (*capitulum*). There are flowers with 5-lobed tubes (*disc*) encircled by flowers with long tongue-like lobes (*ray*) in each capitulum (*radiate*). A capitulum has many yellow disc flowers and 25-40 yellow ray flowers. Each flowering stalk has a solitary terminal capitulum on laterally branching stems in a panicle arrangement that are open. The leaves that are appressed to the capitulum (*phyllaries*) are sticky, green, and recurved.

Leaves: Are alternate, egg-shaped (*obovate*), and have bluntly serrated edges. Each serrated tooth tip has a rounded resinous bump.

Plants: Are 10-100 cm tall and bloom from July to September.

SITE AND HABITAT

Found across the INL Site along roadsides and in other disturbed soils.

NOT TO BE MISTAKEN FOR

GRHO: Leaves have serrated edges that are tipped with a spine.

AKA: *Grindelia squarrosa* var. *serrulata*

Fun Facts: This species blooms late into the fall, making it a valuable late season resource for many pollinators, especially for bees. It has been reported to be consumed by sage-grouse chicks and has been used to treat asthma, bronchitis, common cold, skin irritations, and sores.

**COMMON NAME**

halogeton

FAMILYGoosefoot (*Chenopodiaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are tightly packed into bundles (glomerule) that attach directly to the flowering stalk in a spike arrangement from the angle formed at the leaf and stem (axillary). Flowers lack true petals but consist of small leaves (bracts) that appear petal-like and are cream with pink centers.

Leaves: Are axillary and alternate, are succulent-like fleshy cylinders, are < 1 cm long, are blue-green, have a white waxy coating (glaucous), and are tipped with a bendable thread-like hair (aristulate), but otherwise lack hairs (glabrous).

Stems: Mature to mottled, striped, or solid red, are glabrous, and can be glaucous.

Plants: Are 5-30 cm tall and bloom from July to August.

SITE AND HABITAT

Found across the INL Site but generally near roadsides, disturbed soils, overgrazed areas, and lands in poor ecological condition.

NOT TO BE MISTAKEN FOR

BASC: Leaves are flat with 3-5 veins and have a coat of soft hairs. **SATR:** Leaves are tapered to a spiny tip and are long, linear, and thread-like.

AKA: None

Fun Facts: This is a poisonous weed that was introduced to North America in the early 1900s. It spreads easily within overgrazed and degraded areas but is a poor competitor within healthy native plant communities.



COMMON NAME

lava aster

FAMILY

Sunflower (*Asteraceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are densely clustered in a flower head (*capitulum*). There are many yellow flowers with 5-lobed tubes (*disc*) encircled by 12-18 blue, purple, or white flowers that have long tongue-like lobes (*ray*) in each capitulum (*radiate*). The flower stalks have a single terminal capitulum (*solitary*).

Leaves: Are alternate, are attach directly to the stem (*sessile*), have smooth edges, are linear, are covered in small bristly hairs (*scabrous*), and are 4-15 mm long.

Stems: Ascend from a sprawling base that is typically woody and persists into the next year (*caudex*).

Plants: Form loose mats, are 5-15 cm tall, and bloom from May to June.

SITE AND HABITAT

Found in the center to the southern portions of the INL Site in shallow sandy to hard packed clayey soils.

NOT TO BE MISTAKEN FOR

MACA: Leaf edges are toothed and plants lack a caudex.

AKA: *Aster scopulorum*, *Chrysopsis aster*

Fun Facts: The holotype was collected in a dry prairie by the Flathead River of Montana in 1897 by explorer Nathaniel Wyeth (1802 -1856) for botanist Thomas Nuttall (1786-1859).

**COMMON NAME**

ballhead gilia

FAMILYPhlox (*Polemoniaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have fused petals shaped like a funnel (funnelform) that have 5 white distinct petal lobes with rounded tips and are 3-5 mm long. The flowers are attached to distinct stalks (pedicels) on highly branched elongating flower shoots that grow new distal flower clusters in a cyme arrangement to form rounded top.

Leaves: Are alternate, blue-green, have edges lobed at 2 levels (bipinnatifid), are often covered in short, soft, matted hairs (tomentose), and can be pungent when crushed.

Stems: Are maroon to purple, typically tomentose, and spreading branches ascend from a base that is woody and persists into the next year (caudex).

Plants: Are tufted to upright, 5-50 cm tall, and bloom from May to July.

SITE AND HABITAT

Found across the INL Site on a large range of soils.

NOT TO BE MISTAKEN FOR

ERWI: Petals are light blue to lavender, taper to a point, and crushed leaves lack a pungent odor. **CRIN:** Leaves have stiff, glass-like hairs (hispid), leaf edges are smooth, and plants lacks a pungent odor when crushed.

AKA: None

Fun Facts: This species is highly polymorphic with four different variations across the northwest, and of these, *I. c. ssp crebrifolia*, is recognized as a rare plant in Idaho.

**COMMON NAME**

small-flowered gilia

FAMILYPhlox (*Polemoniaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have fused petals shaped like a funnel (funnelform) that have 5 white to pale blue distinct petal lobes and are 4-7 mm long. The flowers are attached to distinct stalks (pedicel), growing from multiple orders of branches along the main flower stalk in a compound raceme arrangement.

Fruits: Are dry containers that split open (capsules) with 3 cavities (locules) and there is 1 seed per locule.

Leaves: Are alternate, covered in glands, and lack a basal rosette. Lower stem leaves may have three finger-like lobes that are < 3 cm long, while upper stem leaves are much smaller and are not lobed.

Plants: Are 10-40 cm tall and bloom from May to June.

SITE AND HABITAT

Dispersed throughout the INL Site, predominately on dry, fine textured soils or near the base of ant mounds.

NOT TO BE MISTAKEN FOR

ALLE, ALLO, GIIN, GISI, GIMO, GIBR, GITW: Funnelform flower tubes are yellow and the leaves form a basal rosette.

AKA: *Gilia minutiflora*, *Microgilia minutiflora*

Fun Facts: This genus is named after the Ipomoea genus in the Morning-glory family (Convolvulaceae).

**COMMON NAME**

povertyweed

FAMILYSunflower (*Asteraceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are densely clustered in a flower head (capitulum). Only flowers with 5-lobed tubes (disc) occur in each capitulum (discoid). White disc flowers are concealed by green leaves that are appressed to the capitulum (phyllaries). Each capitulum grows from stalks inside the angle formed by the leaf and stem (axillary). Flowers nod.

Fruits: Are hard, sealed hulls with one seed (achene), and lack hairs.

Leaves: Typically attach directly to the stem (sessile), are alternate on the upper stem but opposite towards the lower stem, are oblong to broadly linear, are 1-5 cm long, have smooth edges, and are covered in stiff, flatten hairs (strigose).

Stems: Branch above the base, creep underground (rhizomatous), and are yellow.

Plants: Are 10-50 cm tall and bloom from June to August.

SITE AND HABITAT

Found along the Big Lost River in seasonally wet areas with fine, saline soils.

NOT TO BE MISTAKEN FOR

COUM: Flowering stalks produce new distal clusters of flowers on elongating shoots (cyme), flowers lack petals, and the leaves have a white, waxy coating (glaucous).

AKA: *Iva axillaris* ssp. *robustior*

Fun Facts: This plant was first collected in 1814 by botanist John Bradburry (1768-1823).

**COMMON NAME**

flatspine stickseed

FAMILYForget-me-not (*Boraginaceae*)**IDENTIFYING CHARACTERISTICS**

Flower: Have fused petals shaped like a funnel (funnelform) with 5 blue to white distinct petal lobes and petal funnel throats are occasionally yellow. Flower stalks can produce highly branched structures without a primary stalk (sympodial) that grow new distal flower clusters in a cyme arrangement.

Fruits: Are dry containers that split open (capsules) and have 4 small raindrop shaped nuts (nutlet). Each nutlet rim is crowned with a single row of prickles that attach directly to the nutletshell and never fuse with other prickles.

Leaves: Are alternately arranged, lance shaped, hairy, and have smooth edges.

Plants: Are 5-40 cm tall and bloom from May to June.

SITE AND HABITAT

Widespread across the INL Site as an understory species in sagebrush dominated plant communities and often abundant in disturbed soils.

NOT TO BE MISTAKEN FOR

LASQ: Nutlet rims have 2 rows of concentric prickles. ***Lappula montana* & *Lappula desertorum*:** Nutlet prickles are basally fused to resemble webbed digits.

AKA: *Lappula redowskii* var. *cupulata*

Fun Facts: Although this species was first collected in the early 1800s, a holotype specimen was collected from Idaho Falls, ID along the shores of the Snake River in 1937 by Wyoming State University botanist Aven Nelson (1859-1952).

**COMMON NAME**

prickly lettuce

FAMILYSunflower (*Asteraceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are densely clustered in a flower head (capitulum). Only flowers with a long tongue-like lobe (ray) are found in a capitulum (ligulate). There are 12-20 yellow ray flowers per capitulum.

Fruits: Are hard, sealed hulls with one seed (achene). Hulls are flat, grey to tannish brown, have 5-9 nerves, and have a thin stalk (beak) with a tuft of modified sepals (pappus).

Leaves: Are alternately arranged, have edges lobed at 1 level (pinnatifid), have spined edges and midribs, and have milky sap (lactiferous).

Plants: Are 10-150 cm tall and bloom from July to August.

SITE AND HABITAT

Dispersed across the INL Site in native plant communities and disturbed soils.

NOT TO BE MISTAKEN FOR

LATA: Petals are blue and leaves lack spined midribs. **LAVI:** Achenes have purplish-black hulls: **CHJU:** Leaves lack spined midribs and achenes are cylindrical. ***Lactuca biennis:*** Leaf edges lack spines.

AKA: *Lactuca scariola*

Fun Facts: Each flower in a capitulum has 5 fused petals, 5 stamens, and a pistil with 2 lobes. Flowers with a fused floral tube tipped with five equal-sized lobes are disc flowers, while flowers with a fused floral tube tipped with a single tongue-like lobe are ray flowers. The combination of ray and disc flowers in the capitulum determines the capitulum type. Discoid capitula have only disc flowers, ligulate capitula have only ray flowers, and radiate capitula have a ring of ray flowers encircling an interior of disc flowers.



COMMON NAME

fernleaf biscuitroot

FAMILY

Carrot (*Apiaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have five, tiny, recurved purple to red petals that are clustered at the end of stalks which are fused at a single point at two different levels in a compound double umbel arrangement. Double umbels are subtended by narrow, small leaves (bracts) on otherwise leafless flowering stalks (pseudoscape).

Fruits: Are flat, elliptic, 9-12 mm long with inflated wings, and split open at maturity to release multiple single-seeded subsections (schizocarp).

Leaves: Are hairless, have sheathed bases, are divided at 3 levels (tripinnate), and bear small leaflets. The terminal leaflets are 3-13 mm long and 0.1-1.5 mm wide.

Plants: Are 50-150 cm tall and bloom from April to May.

SITE AND HABITAT

Found across the INL Site in a wide range of soil textures.

NOT TO BE MISTAKEN FOR

LOFO: Plants are 5-25 cm tall. **LOMA:** Flowers are white and plants are 10-25 cm tall.

Lomatium simplex, LOTR: Leaves are divided at 2 levels (biternate). **PTTE:** Plants are 30-50 cm tall and crushed leaves smell like turpentine.

AKA: *Leptotaenia dissecta*, *Lomatium multifidum*

Fun Facts: This wildflower is culturally significant to various tribes in the west. Many pollinators and herbivores forage on this fast-growing early spring forb.

**COMMON NAME**

desert biscuitroot

FAMILYCarrot (*Apiaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are pink but age to a honey mustard yellow and are clustered at the end of stalks which are fused at a single point at two different levels in a double umbel arrangement. Double umbels are subtended by small leaves (bracts) on otherwise leafless flowering stalks (pseudoscape) that are upright to sprawling.

Fruits: Are round, 5-8 mm long, have 1-2 mm long paper wings that are flat, and split open at maturity to release multiple single-seeded subsections (schizocarp).

Leaves: Are hairy, have sheathed bases, are divided at 3 levels (tripinnate), and bear small leaflets. The terminal leaflets are 0.5-4 mm long by 1 mm wide.

Plants: Are 7-25 cm tall and bloom from April to June.

SITE AND HABITAT

Widespread within sagebrush communities in a wide range of soils.

NOT TO BE MISTAKEN FOR

LODI: Plants are 50-150 cm tall. **LOMA:** Flowers are white and fruits are 8-14 mm long. **Lomatium simplex**, **LOTR:** Leaves are divided at 3 levels (biternate). **PTTE:** Plants are 30-50 cm tall and their leaves smell like turpentine when crushed.

AKA: *Lomatium macdougalii*

Fun Facts: The subspecies common to the INL is L. foeniculaceum var. macdougalii.



COMMON NAME

silvery lupine

FAMILY

Pea (*Fabaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Attach to distinct stalks (pedicels) that grow from the main flowering stalk in a raceme arrangement. The flowers are bilaterally symmetrical, 5-8 mm long, are two toned from pale blue to pink-purple with white interior markings, and resemble a butterfly (papilionaceous). The sepals are fused (calyx) but do have a faint spur and often conceal hairs on the upper petal (banner); banners may be round or have a 1 mm cleft.

Fruits: Are single cavity pods that split open (legume) and have soft, silky hairs (sericeous).

Leaves: Are basal and alternate along the stem; basal leaves may wither at flowering (anthesis). Stem leaves are covered in silvery hairs and are divided down to the midvein (palmate) with 6-9 lance shaped leaflets.

Stems: Are attached to a base that persists into the following year (caudex).

Plants: Are 20-90 cm tall and bloom from June to October.

SITE AND HABITAT

Found scattered across the INL Site on a wide range of soils.

NOT TO BE MISTAKEN FOR

LUPU: Plants are annual, lack a caudex, and are 3-24 cm tall. **LUSE:** Flowers have strongly reflexed banners with a striking white center that is speckled with purple spots and fruit pods are densely covered in short hairs (pilose).

AKA: *Lupinus argenteus* var. *holosericeus*

Fun Facts: This genus is toxic due the presence of alkaloids. Idaho hosts many varieties of this species, with flower colors ranging from white and yellow to pink and blue.

**COMMON NAME**

largeflower skeletonplant

FAMILYSunflower (*Asteraceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are densely clustered in a flower head (capitulum). Only flowers with a long tongue-like lobe (ray) are found in a capitulum (ligulate). There are 5-6 ray flowers per capitulum; they are light pink to white and 2-4 cm long. Capitula grow from different points along the flower stalk and form loose clusters of terminal blossoms in a corymb arrangement. The leaves that are appressed to the capitulum (phyllaries) are each tipped with a tiny horn (corniculate).

Fruits: Are hard, sealed hulls with one seed (achene), are 10-19 mm long, and have a crown of modified sepals (pappus) of white hairs.

Leaves: Are alternately arranged, are linear, attach directly to the stem (sessile), are spineless, and reduce in size as they ascend the stem.

Stems: Are slender, ascending, pliable, and have milky sap (lactiferous).

Plants: Are 10-60 cm tall, have deep sprawling roots, and bloom from May to June.

SITE AND HABITAT

Scattered throughout the INL Site in coarse soils like gravel or sand.

NOT TO BE MISTAKEN FOR

PLSP: Stems are thorny, phyllaries are not corniculate, and achenes are 5-7 mm long.

AKA: *Lygodesmia dianthopsis*

Fun Facts: In Greek, lygodes means 'pliant twig' and desmos means 'bundle'.



COMMON NAME

hoary aster

FAMILY

Sunflower (*Asteraceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are densely clustered in a flower head (capitulum). There are flowers with 5-lobed tubes (disc) encircled by flowers with long tongue-like lobes (ray) in a capitulum (radiate). There are many yellow disc flowers and 8-25 purple ray flowers. Flowering stalks have many branching stems with solitary terminal capitula in a panicle arrangement.

Fruits: Are hard, sealed hulls with one seed (achene), 3-4 mm long, and crowned with modified sepals (pappus) that are barbed.

Leaves: Are basal and alternate along the stem, lance shaped, have smooth to irregularly toothed edges, are hairless to hairy, and wither at flowering (anthesis).

Plants: Are 10-50 cm tall, grow non-woody taproots, and bloom from July to October. Immature plants often grow a robust basal rosettes and only mature plants will produce flowering stalks.

SITE AND HABITAT

Found across the INL Site in a wide range of soils.

NOT TO BE MISTAKEN FOR

CEST: Capitula only have disc flowers (discoid) with light purple petals and leaves have edges lobed at 1 level (pinnatifid). **IOAL:** Plants have a base that is woody and persists into the next year (caudex), and the leaf edges are smooth.

AKA: *Dieteria canescens*

Fun Facts: This species has been used to treat headaches and throat and nose ailments.

**COMMON NAME**

whitestem blazingstar

FAMILYBlazing-star (*Loasaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are attached to distinct stalks (pedicels) that grow from the main flowering stalk in a raceme arrangement. Flowers have 5 yellow petals, often with orange centers, that are 3-7 mm long, have 5 sepals, and have 5 or more stamens with 1 pistil. The small leaves subtending the sepals (bracts) are green, linear to oval shaped, and have smooth edges.

Fruits: Are dry containers that split open (capsules) and are hairy.

Leaves: Can be basal and arranged opposite or alternately along the stem, have edges lobed at 1 level (pinnatifid), are lance shaped, and lack glands.

Stems: Are hollow, highly branched, and become white and brittle as they age.

Plants: Are 2-40 cm tall, have Velcro®-like hairs, and bloom from April to June.

SITE AND HABITAT

Found in the center to western areas of the INL Site in sandy soils.

NOT TO BE MISTAKEN FOR

PHGL, ALLE, ALLO, IPMI, GIIN, GISI, GITW, GIBR, GIMO: Plants have glandular hairs that are never Velcro®-like. **MELA:** Flower petals are 2-4 cm long and plants are 20-100 cm tall. **Mentzelia montana:** Bracts have lobed edges with white bases.

AKA: *Acolasia albicaulis*

Fun Facts: This genus was named after German botanist, Christian Mentzel (1622-1701).

**COMMON NAME**

tufted evening-primrose

FAMILYEvening-primrose (*Onagraceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Grow on an elongated floral tube attached directly to the base of plant (sessile). Flowers have 4 white petals, 4 sepals, and a 4 lobed stigma. Petals fade to pink with age and each are tipped with two lobes.

Fruits: Are dry containers that split open (capsules). The hard capsules are curved cylinders covered with warty nodules, and they may be hairless or hairy.

Leaves: Form a basal rosette, can have edges lobed at 1 level (pinnatifid) to entire, are lance shaped, are burgundy to light green, and are smooth to hairy.

Plants: Are tufts that average 20 cm in diameter by 5 cm tall and bloom from May to June.

SITE AND HABITAT

Found across the INL Site on basalt rock outcroppings.

NOT TO BE MISTAKEN FOR

***Oenothera flava*:** Petals are yellow. **OEPS:** Capsules lack warty nodules and plants are restricted to sand dune habitats. **OEPA:** Plants never form tufted basal rosettes.

AKA: *Oenothera caespitosa*

Fun Facts: Evening-primrose flowers bloom at sunset and wilt shortly after sunrise the following day. This species has pollen that fluoresces under ultraviolet light and moths are their most common herbivor.

**COMMON NAME**

pale evening-primrose

FAMILYEvening-primrose (*Onagraceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Grow on an elongated floral tube attached directly to the stem (sessile). Flowers have 4 white petals, 4 sepals, and a 4 lobed stigma. Petals fade to pink with age and each are tipped with two lobes.

Fruits: Are dry containers that split open (capsules). The capsules are hard cylinders that can be straight to slightly coiled.

Leaves: Are linear, are sessile, are lance shaped, have 1 edges lobed at 1 level (pinnatifid), are light green, and never form basal rosettes.

Stems: Creep underground (rhizomatous) and above ground stems are sprawling to upright.

Plants: Are 10-50 cm tall and bloom from May to July.

SITE AND HABITAT

Found across the INL Site on sandy soils and other well-draining soils.

NOT TO BE MISTAKEN FOR

***Oenothera flava*:** Petals are yellow. **OEPS, OECA:** Leaves form tufted basal rosettes.

AKA: None

Fun Facts: This genus, *Oenothera*, is distinguished from others within the Evening-primrose family by its large 4 lobed stigma.



COMMON NAME

woolly groundsel

FAMILY

Sunflower (*Asteraceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are densely clustered in a flower head (*capitulum*). There are flowers with 5-lobed tubes (*disc*) encircled by flowers with long tongue-like lobes (*ray*) in each capitulum (*radiate*). There are 8-10 yellow disc and 35-50 yellow ray flowers in a capitulum and 6-15 capitula that grow from different points along the flower stalk, forming loose clusters of terminal blossoms in a corymb arrangement. The leaves that are appressed to the capitulum (*phyllaries*) have tufted tips.

Leaves: Grow in basal clumps and alternate along the stem. Leaves are linear to ovate, have edges that are smooth to toothed, and are tapered to a distinct stalk (*petiole*) at their attachment point (*node*).

Stems: Attach to a base that is often woody and persists into the next year (*caudex*).

Plants: Are covered in short, soft, matted hairs (*tomentose*), typically produce many flowering stalks from the caudex, are 10-40 cm tall, and bloom from May to June.

SITE AND HABITAT

Scattered throughout the INL Site, especially in rocky areas.

NOT TO BE MISTAKEN FOR

SEIN: Phyllaries have black tips. ***Senecio jacobaea*:** Phyllaries lack hair tufts. ***Senecio triangularis*:** Leaves are triangular. **SEVU:** Capitulum only bear disc flowers (*discoïd*).

AKA: *Senecio canus*

Fun Facts: This genus is named after John G. Packer (1929-2019), a Canadian botanist who authored *Vascular Plants of Alberta* and specialized in the arctic and alpine flora.



COMMON NAME

blue penstemon

FAMILY

Plantain (*Plantaginaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Grow on distinct stalks (pedicels) in clusters of false whorls on an elongating flower stalk in a verticillaster arrangement. The fused flowers are 25-30 mm long with 2 upper and 3 lower blue petal lobes and a purple throat. The stamen beard is yellow and the anther sacs split open at the ends.

Leaves: Occur on the stem and basally; stem leaves are opposite and basal leaves are often larger. Leaves lack glands, are hairless, have smooth edges, and are lance shaped.

Plants: Grow 40-70 cm tall and bloom from June to July.

SITE AND HABITAT

Scattered throughout the INL Site in dry open areas in a variety of soils.

NOT TO BE MISTAKEN FOR

PERA: Flowers are 14-23 mm long and plants lack basal leaves. **PEHU:** Flowers are 7-11 mm long and plants are 5-35 cm tall. **PEDE:** Leaf edges are toothed. **PEPU:** Plants are 4-12 cm tall. **PEPA:** Plants are 50-140 cm tall and leaf edges are toothed. **PEER:** Plants are 8-35 cm tall and leaf edges are toothed.

AKA: None

Fun Facts: Penstemon species are popular in nativescaped gardens and ecological restoration projects. They exhibit a wide array of colors, thrive in some of the driest landscapes, and attract bumblebees, mason bees, and mining bees, which in turn provide food for birds and other animals.



COMMON NAME

hot rock penstemon

FAMILY

Plantain (*Plantaginaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Grow on distinct stalks (*pedicels*) in clusters of false whorls on an elongating flower stalk in a verticillaster arrangement. The fused flowers are 7-13 mm long with 2 upper and 3 lower white to pink petal lobes that typically have brilliant violet stripes and a white throat. The stamen beard is thin and the anther sacs split open along their full length.

Leaves: Occur on the stem and basally; stem leaves are opposite and basal leaves are often larger. Leaves are hairless, rigid, often covered in glands, have toothed edges, and are lance to oval shaped.

Plants: Are 10-40 cm tall and bloom from May to July.

SITE AND HABITAT

Found throughout the southern end of the INL Site on basalt outcroppings.

NOT TO BE MISTAKEN FOR

PECY, PERA, PEHU, PEPU: Leaf edges are smooth and petals are never white. **PEPA:** Plants are 50-140 cm tall. **PEER:** Leaves are soft, thin, and hairy, and petals are pale lavender to blue.

AKA: None



COMMON NAME

low penstemon

FAMILY

Plantain (*Plantaginaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Grow on distinct stalks (pedicels) in clusters of false whorls on an elongating flower stalk in a verticillaster arrangement. The fused flowers are 7-11 mm long with 2 upper and 3 lower pale blueish purple petal lobes that have mauve stripes and a pale blueish throat. The stamen beard is thick with yellow to orange filaments and its anther sacs split open along their full length.

Leaves: Occur on the stem and basally; stem leaves are opposite, while rounded basal leaves form mats. Leaves are green, may be hairless or covered in fine, stiff hairs (pubescence), have smooth edges, and are linear to lance shaped.

Plants: Are 5-35 cm tall and bloom from late May to June.

SITE AND HABITAT

Found on the slopes of the Lost River Range on the north western boundary of the INL Site, often in gravel or talus.

NOT TO BE MISTAKEN FOR

PECY: Flowers are 25-30 mm long and plants are 40-70 cm tall. **PEDE:** Petals are white and leaf edges are toothed. **PERA:** Flowers are 14-23 mm long and plants lacks basal leaves. **PEPU:** Flowers are 15-20 mm long and leaves are linear and ash-colored. **PEPA:** Plants are 50-140 cm tall and leaf edges are toothed. **PEER:** Leaf edges are toothed.

AKA: None

Fun Facts: Thomas Nuttall (1786-1859) first collected this species along the Idaho and Wyoming border in 1834. The Latin word "humile" translates to "humble" or "low".



COMMON NAME

Salmon River beardtongue

FAMILY

Plantain (*Plantaginaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Grow on distinct stalks (*pedicels*) in clusters of false whorls on an elongating flower stalk in a verticillaster arrangement. The fused flowers are 15-20 mm long with 2 upper and 3 lower brilliant blue petal lobes and a two-toned throat of cobalt blue to violet. The stamen beard is thin and yellow and its anther sacs split open along their full length.

Leaves: Occur on the stem and basally; stem leaves are opposite and basal leaves often form tufts. Leaves appear ash-colored from fine white hairs (*cinereous*), have entire edges, and are linear in shape.

Plants: Are 4-12 cm tall and bloom from late May to June.

SITE AND HABITAT

Found in the northern areas of the INL Site in rocky soils to limestone outcrops.

NOT TO BE MISTAKEN FOR

PECY: Plants are 40-70 cm tall and flowers are 25-30 mm long. **PEDE:** Flowers are white and leaf edges are toothed. **PERA:** Plants lacks basal leaves and leaves are green. **PEHU:** Flowers are 7-11 mm long, leaves are green, and basal leaves are oval shaped. **PEPA:** Plants are 50-140 cm tall and leaf edges are toothed. **PEER:** Leaf edges are toothed.

AKA: None

Fun Facts: This is an Idaho endemic species; it occurs nowhere else in the world except for east central Idaho in Custer, Lemhi, Clark, and Butte counties. Among the many insects that frequent Penstemon species are wool carder bees (Anthidium spp.), whose genus name translates to 'little flower visitor'.



COMMON NAME
sagebrush phlox

FAMILY
Phlox (*Polemoniaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have 5 fused, flared, and flattened petals (salverform) that are white to pink and are 10-15 mm long. Flowers attach to short, distinct stalks (pedicels). Flowering stalks produce new distal clusters of flowers on elongating shoots in a cyme arrangement.

Leaves: Are opposite, linear, and 10-35 mm long by 0.5-1.5 mm wide.

Stems: Are numerous, are compact, form a loose, woody base, and persist into the next year (caudex). The leaf attachment points to the stem (node) are crowded together and nearly conceal the portion of stem in between the nodes (internode).

Plants: Are < 10 cm tall, tufted, and bloom from May to June.

SITE AND HABITAT

Scattered throughout the INL Site on coarse rocky and sandy soils.

NOT TO BE MISTAKEN FOR

PHHO: Leaves are 2-10 mm long. **PHLO:** Plants are 10-40 cm tall, the leaves are 15-80 mm long by 1-4 mm wide, and the stems have distinct internodes. **LIPU:** Leaves are alternate, petals are off-white, and plants are shrubs.

AKA: None

Fun Facts: There are more than 50 phlox species native to North America.



COMMON NAME
sticky phacelia

FAMILY
Waterleaf (*Hydrophyllaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are cup shaped (cupuliform) with 5 petal lobes that are 2-5 mm long and lavender. Flowering stalks produce new distal clusters of flowers on elongating spiral shoots in a helicoid cyme arrangement.

Leaves: Grow as a distinct basal rosette and occasionally along the stem. Leaf edges are distinctly lobed but do not fully extend down to the leaf midvein (pinnatifid), are oblong, and covered in soft glandular hairs.

Stems: Are ascending and branch above the base from a main stem.

Plants: Are 5-25 cm tall and bloom from May to June.

SITE AND HABITAT

Found in the southern portions of the INL Site in coarse sandy soils, often in protected openings within sagebrush communities.

NOT TO BE MISTAKEN FOR

MEAL: Petals are yellow and leaves have Velcro®-like hairs.

AKA: *Phacelia ivesiana* var. *glandulifera*

Fun Facts: You won't be-leaf how cute this plant is until you find it in the sagebrush steppe!



COMMON NAME

silverleaf phacelia

FAMILY

Waterleaf (*Hydrophyllaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are cup shaped (cupuliform) with 5 fused petals, lobes that are 4-7 mm long, and are white to lavender to bright purple. Stamens extend from the cupuliform flowers and the sepal edges are fringed with bristles (ciliate) that are densely crowded. Flowering stalks produce new distal clusters of flowers on elongating spiral shoots in a helicoid cyme arrangement.

Leaves: Are broadly lance shaped, alternately arranged, and tufted at the base. Leaves are prominently veined and can vary in appearance from silvery to pale green due to the variation of short, soft hairs. Basal leaves are often entire but can have a pair of lobes.

Stems: Range from solitary to many branches and attach to a base that persists into the next year (caudex).

Plants: Are 10-50 cm tall and bloom from June to July.

SITE AND HABITAT

Found across the INL Site in coarse-textured soils like rock, sand, or talus.

NOT TO BE MISTAKEN FOR

PHIN: Plants are annuals, lack a caudex, and stamens are included within the flower.

PHIN2: Plants are annuals, lack a caudex, have blue petals, have sparsely spaced ciliate bristles, and the basal leaves lack lobes. **PHHE:** Plants are 30-120 cm tall and strictly produce a single flowering stalk.

AKA: None

Fun Facts: This species complex has a high level of morphological variation across the Intermountain West.

**COMMON NAME**

Hood's phlox

FAMILYPhlox (*Polemoniaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have 5 fused, flared, and flattened petals (salverform) that are 4-14 mm long, exerted from 5 fused sepals (calyx), and are white, lavender, or bluish purple. Flowers are on distinct stalks (pedicels) which are considerably stunted. Flowering stalks produce new distal clusters of flowers on elongating shoots in a cyme arrangement.

Leaves: Are opposite and linear. The points where the leaves attach to the stem (nodes) strongly overlap and completely conceal the section of stem in between the nodes (internode). Leaves are 2-10 mm long and < 1 mm wide, stiff, covered in white hairs, and are ever so slightly spiny.

Plants: Are < 10 cm tall, form a dense mat, and bloom from April to June.

SITE AND HABITAT

Most abundant forb on the INL Site in coarse soils like sand and gravel.

NOT TO BE MISTAKEN FOR

PHAC: Leaves are 10-35 mm long. **PHLO:** Leaves are 15-80 mm long x 1-3 mm wide, stems internodes are > 5 mm long, and plants are 10-40 cm tall. **ARFR:** Petals are not fused to one another, and are nearly included within the calyx. **LIPU:** Plants are 10-60 cm tall, are shrubs, and stems have distinct internodes.

AKA: None

Fun Facts: This plant can produce a pleasant fragrance but the leaves can become pokey later in the season.

**COMMON NAME**

longleaf phlox

FAMILYPhlox (*Polemoniaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Have 5 fused, flared, and flattened petals (salverform) that are white to pink and 10-18 mm long. Flowering stalks produce new distal clusters of flowers on elongating shoots in a cyme arrangement.

Leaves: Are opposite and linear at 15-80 mm long by 1-4 mm wide.

Stems: Are loosely ascending and the lower portions of the herbaceous stems are smooth while the upper portions are covered in small glands. The points where the leaves attach to the stem (nodes) are separated by a section of stem (internode) which is always > 5 mm in length.

Plants: Are 10-40 cm tall and bloom from April to July.

SITE AND HABITAT

Scattered throughout the INL Site on coarse rocky, clayey loam, and sandy soils.

NOT TO BE MISTAKEN FOR

PHHO: Leaves are 2-10 mm long, nodes are closely crowded, and conceal the internode.

PHAC: Plants are < 10 cm tall, leaves are 10-35 mm long by 0.5-1.5 mm wide, and nodes are closely crowded and nearly conceal the internode.

AKA: None

Fun Facts: In Greek, 'phlox' means 'flame' describing many of the distinctly brightly colored flowers in this genus.



COMMON NAME

thorn skeletonweed

FAMILY

Sunflower (*Asteraceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are densely clustered in a flower head (*capitulum*). Only flowers with a long tongue-like lobe (*ray*) are found in each capitulum (*ligulate*). There are 3-5 ray flowers per capitulum that are pink to red-purple and rarely white. The flowering stalks have many branching stems with solitary terminal capitula in a panicle arrangement.

Fruits: Are hard, sealed hulls with one seed (*achene*), are 4-8 mm long, and have a double crown of minutely barbed hairs (*pappus*) of two lengths.

Leaves: Are alternate, are small scaly appendages 2-5 mm long, are linear, and attach directly to the stem (*sessile*).

Stems: Are highly branched, and have a base that is woody and persists into the next year (*caudex*). Stems taper to hard spines, have milky sap (*lactiferous*), and have brown hair puffs near the stem base.

Plants: Are 20-60 cm tall and bloom from July to August.

SITE AND HABITAT

Found near the center of the INL Site in coarse soils like sand and rocks.

NOT TO BE MISTAKEN FOR

LYGR: Stems are flexible, lack spines, lack hair puffs, and plants lack a caudex.

AKA: *Lygodesmia spinosa*

Fun Facts: This is the only species within this genus (*monotypic*).

**COMMON NAME**

lemon scurfpea

FAMILYPea (*Fabaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Attach to distinct stalks (pedicels) inside the angle formed by the leaf and stem (axillary) along the main flowering stalk in a raceme arrangement. Flowers are bilaterally symmetrical, 4-8 mm long, and have bluish purple with white to apricot-pink petals, and resemble a butterfly (papilionaceous).

Fruits: Are single cavity pods that split open (legume) and are round and hairy.

Leaves: Are shiny and yellow-green; leaves are covered in warty glands that produce a citrus-like odor when crushed. Leaves are divided down to the midvein (palmate), often have 3 leaflets, but may have up to 5 leaflets, and are obovate to linear.

Stems: Are ridged, erect, and highly branched.

Plants: Are 20-60 cm tall and bloom from May to June.

SITE AND HABITAT

Occurs in the center of the INL Site in patches of sandy soil.

NOT TO BE MISTAKEN FOR

MESA: Plants never smell like citrus and legumes are coiled fruits.

AKA: *Ladeania lanceolata*

Fun Facts: This plant can be burned to repel mosquitoes.



COMMON NAME

turpentine wavewing

FAMILY

Carrot (*Apiaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have bright yellow petals that are clustered at the end of stalks that are fused at a single point at two different levels in a compound umbel arrangement. Compound umbels are subtended by small leaves (bracts) on an otherwise leafless flowering stalk (pseudoscape).

Fruits: Are flatten tear drops with large greenish wavy wings, are loosely clustered, and split open at maturity to release multiple single seeded subsections (schizocarp).

Leaves: Are shiny green and are divided at 3 levels (tripinnate).

Stems: Are attached to a base that is woody and persists into the next year (caudex); the stems are generally at or above the soil.

Plants: Are 30-60 cm tall, have a turpentine-like odor, and bloom from May to June.

SITE AND HABITAT

Found on coarse soils like rocky basalt outcroppings and on well-drained slopes on the east, south, and western borders of the INL Site.

NOT TO BE MISTAKEN FOR

CYAC: Fruit clusters are tightly compact. **CYGL:** Fruit wings are purple to blue. **CYNI:** Flowers are white and leaves are grey. **LOFO:** Leaves are grey and fruit wings are flat.

AKA: *Cymopterus terebinthinus*

Fun Facts: Recent molecular taxonomic studies are expected to be used to reclassify many species in the genera *Lomatium*, *Cymopterus*, and this genus.



COMMON NAME

wild begonia

FAMILY

Buckwheat (*Polygonaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are attached to distinct stalks (pedicels) and flowering stalks have many branching stems with solitary terminal blooms in a panicle arrangement. The flowers have two sets of indistinguishable sepals and petals (tepals). The outer tepals are large, showy, triangular, and have smooth edges, ranging from pink to red.

Leaves: Are alternately arranged on the stem and never form basal rosettes. The ovately shaped leaves are leathery and turn a rich terracotta brown when they wither.

Stems: Creep underground (rhizomatous).

Plants: Are 10-40 cm tall, form rhizomatous colonies, above ground structures quickly senesce after flowering (anthesis), and bloom from April to June.

SITE AND HABITAT

Found in the central and eastern areas of the INL Site on sandy soils.

NOT TO BE MISTAKEN FOR

RUCR: Leaves are lance shaped. **RUMA:** Tepals are small, compact, and green. **RUSA:** Plants do not form rhizomatous colonies.

Fun Facts: This species was first collected in 1811 in North Dakota by botanist John Bradbury (1768-1823) but the species was described by Frederick Traugott Pursh (1774-1820) who Bradbury accused of taxonomic piracy. Pursh was in a race with Thomas Nuttall (1786-1859) to describe more new species from North America. When the War of 1812 stranded Bradbury in America, he sent his collection ahead to his son who then gave the collection to the Liverpool Botanic Garden. In a series of strange events, duplicates made their way into Pursh's possession who published 40 new species from the Bradbury collection; ultimately usurping taxonomic authority and profits from Bradbury. This misunderstanding was never resolved, and Bradbury ended his botanical career.



COMMON NAME

Russian thistle

FAMILY

Goosefoot (*Chenopodiaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are attached directly to the flowering stalk in a spike arrangement inside the angle formed by the leaf and stem (*axillary*), and are alternately arranged. Flowers are small, green to burgundy, and have two small spiny leaves beneath the head (*bracts*).

Leaves: Are alternate and lack distinct veins. Young leaves are soft, long, and string-like. Mature leaves are hardened, linear, and tipped with a single spine.

Stems: Are highly branched above the base and mature plants have obvious red stripes.

Plants: Are 10-80 cm tall. Immature and mature plants have distinctly different growth forms. Immature plants are soft and flexible, while mature plants develop stiff stems and rigid spines. Plants bloom from July to September.

SITE AND HABITAT

Found across the INL Site but typically more abundant in disturbed areas.

NOT TO BE MISTAKEN FOR

HAGL: Leaves are succulent-like fleshy cylinders that are tipped with a bendable thread-like hair (*aristulate*). **BASC:** Leaves are soft covered in fine hairs and have 3-5 distinct veins.

AKA: *Salsola kali*

Fun Facts: Seed from this plant was introduced in South Dakota in the 1870s as contaminant in flax seed imported from Europe. Today, this plant is a common weed found in disturbed areas, wastelands, and in agricultural fields, and it is a sign of poor ecological health.



COMMON NAME

flaxleaf plainsmustard

FAMILY

Mustard (*Brassicaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Attach to distinct stalks (pedicel) that grow from the main flowering stalk in a raceme arrangement. The flowers have 4 yellow petals, 4 sepals, and 6 stamens.

Fruits: Are elongated tube-like pods that split open along a central partition (silique) and are 2-6.5 cm long.

Leaves: Are linear, simple, and entire to occasionally toothed.

Stems: Creep underground (rhizomatous) and are typically hairless (glabrous) but can have sparse hairs near the base.

Plants: Are rhizomatous, 10-70 cm tall, and bloom from May to July.

SITE AND HABITAT

Common across the INL Site in a wide range of soils.

NOT TO BE MISTAKEN FOR

DESO: Leaves are grayish and have edges lobed at 3 levels (tripinnatifid). **DEPI:** Leaves have edges lobed at 2 levels (bipinnatifid). **SIAL:** Leaves form a basal rosette and have edges lobed at 1 level (pinnatifid), and its fruits are 6-12 cm long. **ERIN:** Stems are not rhizomatous.

AKA: *Sisymbrium linifolium*

Fun Facts: This species can be disfigured by a fungal infection stunting the growth and turning the leaves a bright green yellow color that appear as false flowers.

**COMMON NAME**

Jim Hill tumbled mustard

FAMILYMustard (*Brassicaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Attach to distinct stalks (pedicel) that grow from the main flowering stalk in a raceme arrangement. The flowers have 4 yellow petals, 4 sepals, and 6 stamens.

Fruits: Are elongated tube-like pods that split open along a central partition (silique), are 6-12 cm long, and are attached to 6-10 mm long pedicels.

Leaves: Form basal rosettes and basal leaf edges are lobed and do not fully extend down to the main midvein (pinnatifid), and wither during flowering (anthesis). The upper stem leaves are deeply clefted with thread-like lobes.

Plants: Are 20-100 cm tall and bloom from May to June.

SITE AND HABITAT

Widespread across the INL Site, often forming dense weedy patches.

NOT TO BE MISTAKEN FOR

DESO: Leaves do not form basal rosettes and have edges lobed at 3 levels (tripinnatifid).

DEPI: Leaves do not form basal rosettes and have edges lobed at 2 levels (bipinnatifid).

SCLI & ERIN: Leaf edges are entire or occasionally toothed.

AKA: *Norta altissimum*

Fun Facts: This weed introduced from Europe disperses seed by wind as individuals tumble across the landscape releasing seeds over many miles from fall to winter. The seeds are also mucilaginous and stick to animals.

**COMMON NAME**

Munro's globemallow

FAMILYMallow (*Malvaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Attach to distinct stalks (pedicel) that grow from the main flowering stalk in a raceme arrangement. Flowers have 5 showy apricot-pink to reddish-orange petals and stamen filaments are fused together into a bundle (monadelphous).

Leaves: Have edges with shallow, symmetrical, rounded tooth-like lobes that never reach the midvein (crenate) and appear greyish from a dense covering of star-shaped hairs (stellate).

Stems: Are highly branched and attached to a base that is woody and persists into the next year (caudex).

Plants: Are 20-80 cm tall and bloom from May to June.

SITE AND HABITAT

Common across the INL Site in a wide range of soil textures.

NOT TO BE MISTAKEN FOR

***Sphaeralcea coccinea*, SPGR:** Leaves have edges that are cleaved into 3-5 lobes (palmatifid).

AKA: *Malva munroana*, *Nuttallia munroana*, *Malvastrum munroana*, *Malveopsis munroana*

Fun Facts: This species is available commercially and is recommended for nativescaping to benefit many native pollinators such as bees. Some of these pollinator species, like the globemallow bee (*Diadasia diminuta*) are specialists and only visit orange globemallows. Terrestrial structures resembling turrets, made from mud, can indicate the presence of this insect.



COMMON NAME

stemless mock goldenweed

FAMILY

Sunflower (*Asteraceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are densely clustered in a flower head (*capitulum*). There are flowers with 5-lobed tubes (*disc*) encircled by flowers with long tongue-like lobes (*ray*) in each capitulum (*radiate*). There are many yellow disc flowers and 6-15 bright yellow ray flowers. The leafless flowering stalks bear a single terminal capitulum (*solitary*).

Leaves: Are strictly basal, 5 cm long, triple veined, bright green, ridged, and linear. The leaves from last season are grey, stiff, and sharp.

Plants: Are 2-15 cm tall, form cushion-like tufts, and bloom from May to July.

SITE AND HABITAT

Found in the northern portions of the INL Site on rocky hillsides to open areas with cobblestone to coarse textured soils.

NOT TO BE MISTAKEN FOR

ERNA2: Flowering stalks are leafy and have multiple terminal capitulum, leaves are 1-1.5 cm long, and plants are restricted to basalt outcroppings. **GUSA:** Flowering stalks are leafy, have multiple terminal capitula, and plants have an unkempt wiry growth shape.

AKA: *Haplopappus acaulis*, *Stenotus scaber*

Fun Facts: One of the first specimens collected was along the Little Lost River in 1910 by explorer Nathaniel Wyeth (1802 -1856).

**COMMON NAME**

prince's plume

FAMILYMustard (*Brassicaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Attach to distinct stalks (pedicel) that grow from the main flowering stalk in a raceme arrangement. There are 4 small yellow petals, 4 green sepals, and the stamens are extravagantly exerted past the flower.

Fruits: Are elongated tube-like pods that split open along a central partition (silique) and are thin, curved, and droop downward or are outstretched pedicels that are slightly arched.

Leaves: Are arranged in a basal rosette and attached to the stem by a stalk (petiole). Leaves are alternately arranged along the green stem, are lance shaped, have smooth edges, light green, rubbery, and hairless (glabrous).

Plants: Are 30-120 cm tall and bloom from May to July.

SITE AND HABITAT

Found across the INL Site on medium to fine soils around basalt outcroppings.

NOT TO BE MISTAKEN FOR

THLA: Leaves have edges lobed at 1 level (pinnatifid), and flower petals are purple or white.

THMI: Silique pedicels are abruptly curved upwards.

AKA: None

Fun Facts: This genus is named after Lord Edward Stanley (1775-1851), a British ornithologist.



COMMON NAME

common dandelion

FAMILY

Sunflower (*Asteraceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are densely clustered in a flower head (capitulum). Only flowers with a long tongue-like lobe (ray) are found in each capitulum (ligulate). The leafless flowering stalks bear 1 terminal capitulum (solitary) of 40-100 yellow ray flowers.

Fruits: Are hard, sealed hulls with one seed (achene), are olive brown, and have a thin stalk (beak) with a tuft of modified sepals (pappus) that are white bristle-like hairs.

Leaves: Form a basal rosette, are lance shaped, and have edges lobed at 1 level (pinntatifid).

Plants: Are 5-40 cm tall, have milky sap (lactiferous), and bloom from April to September.

SITE AND HABITAT

Primarily found near INL Site facilities in areas treated with supplemental water.

NOT TO BE MISTAKEN FOR

***Taraxacum laevigatum*:** Fruits are red- to purple-brown and leaves are divided divided at 1 level (pinnate).

AKA: *Taraxacum vulgare*, *Leontodon taraxacum*

Fun Facts: This plant is edible but harvest cautiously to avoid accidental consumption of toxic chemicals commonly used to destroy weedy plant species.

Fried Dandelion Blossoms Recipe:

Ingredients | Blooming blossoms, 1 c. milk, ½ tsp. salt, cooking oil, 1 egg, 1 cup flour.

Directions | Mix egg, milk, flour, and salt to make batter. Coat dandelion blossoms in batter and fry in hot oil until lightly browned.

**COMMON NAME**

showy Townsend daisy

FAMILYSunflower (*Asteraceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are densely clustered in a flower head (capitulum). There are flowers with 5-lobed tubes (disc) encircled by flowers with long tongue-like lobes (ray) in each capitulum (radiate). There are many yellow disc flowers and 15-35 pale pink to white ray flowers. Flowering stalks have a terminal capitulum and are sparsely leafy.

Fruits: Are hard, sealed hulls with one seed (achene), and are crowned with modified sepals (pappus).

Leaves: Form a tufted base and sparsely alternate up the stem, reducing in size. The spatula shaped leaves are covered in stiff, appressed hairs (strigose) giving them a silvery color.

Stems: Are ascending with several to many from the base and occasionally branch above the base.

Plants: Are 4-12 cm tall, short-lived perennials, and bloom from May to June.

SITE AND HABITAT

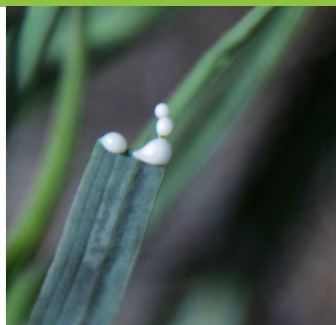
Common across the INL Site and often found in gravelly areas.

NOT TO BE MISTAKEN FOR

ERPU, ERFI: Ray flowers are purple and leaves are thread-like. **ERCA3:** Capitula have 30-100 white to blue ray flowers, and flowering stalks have many leaves.

AKA: *Townsendia florifer* var. *watsonii*, *T. florifera*

Fun Facts: This genus was named after botanist David Townsend (1787-1858) from West Chester, PA. This species was first collected by botanist David Douglas (1799-1834) near Priest's Rapids, WA in 1880.



COMMON NAME

yellow salsify

FAMILY

Sunflower (*Asteraceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are densely clustered in a flower head (capitulum). Only flowers with a long tongue-like lobe (ray) are found in each capitulum (ligulate). Flowering stalks often have a terminal capitulum (solitary). The leaves that are appressed to the capitulum (phyllaries) are green, hairless, and longer than the ray flowers.

Fruits: Are hard, sealed hulls with one seed (achene), and have a thin stalk (beak) with a tuft of modified sepals (pappus) that are white.

Leaves: Are long, narrow, straight, and have milky sap (lactiferous). First year leaves form basal rosettes. Second year leaves alternately ascend the flowering stalk. The base of the clasping leaves have delicate woolly hairs (floccose).

Plants: Are 40-80 cm tall and bloom from June to July.

SITE AND HABITAT

Scattered across the INL Site, but more common in roadsides and unused fields.

NOT TO BE MISTAKEN FOR

***Tragopogon pratensis*:** Phyllaries are shorter than the ray flowers, leaf tips are curled, and the base of clasping leaves lack hair. **ALTE, ALAC:** Plants are not lactiferous and have an onion odor. **TAOF, AGRE:** Leaf edges have lobes. **AGGL:** Phyllaries are hairy.

AKA: *Tragopogon major*

Fun Facts: This species is matutinal, meaning its flowers open early in the morning and close around noon. This is a weedy species in the Intermountain West originally from Eurasia.

**COMMON NAME**

panicked deathcamas

FAMILYLily (*Liliaceae*)**IDENTIFYING CHARACTERISTICS**

Flowers: Are attached to distinct stalks (pedicel) to form solitary terminal blooms on laterally branching stems in a panicle arrangement. Petals and sepals are indistinguishable (tepals), are white to pale yellow, are 4-5 mm long, outer tepals lack a flattened basal stalk (claw), and stamens extend past the tepals.

Leaves: Occur mostly basally and occasionally along the stem, but do not clasp around the flowering stalk. Leaves are 5-15 mm wide, linear, ridged, and canoe shaped.

Plants: Are 30-50 cm tall and bloom from May to June.

SITE AND HABITAT

Distributed across the INL Site in rocky areas.

NOT TO BE MISTAKEN FOR

ZIVE: Flower pedicels are attached to the main flowering stalk in a raceme arrangement, outer tepals have basal claws, stamens do not extend past the tepals, and the leaves are 3-6 mm wide.

AKA: *Melanthiaceae Toxicoscordion paniculatus*

Fun Facts: This species was first collected along the Camas River near Hamer, ID on 20 June 1833 by explorer Nathaniel Wyeth (1802 -1856).