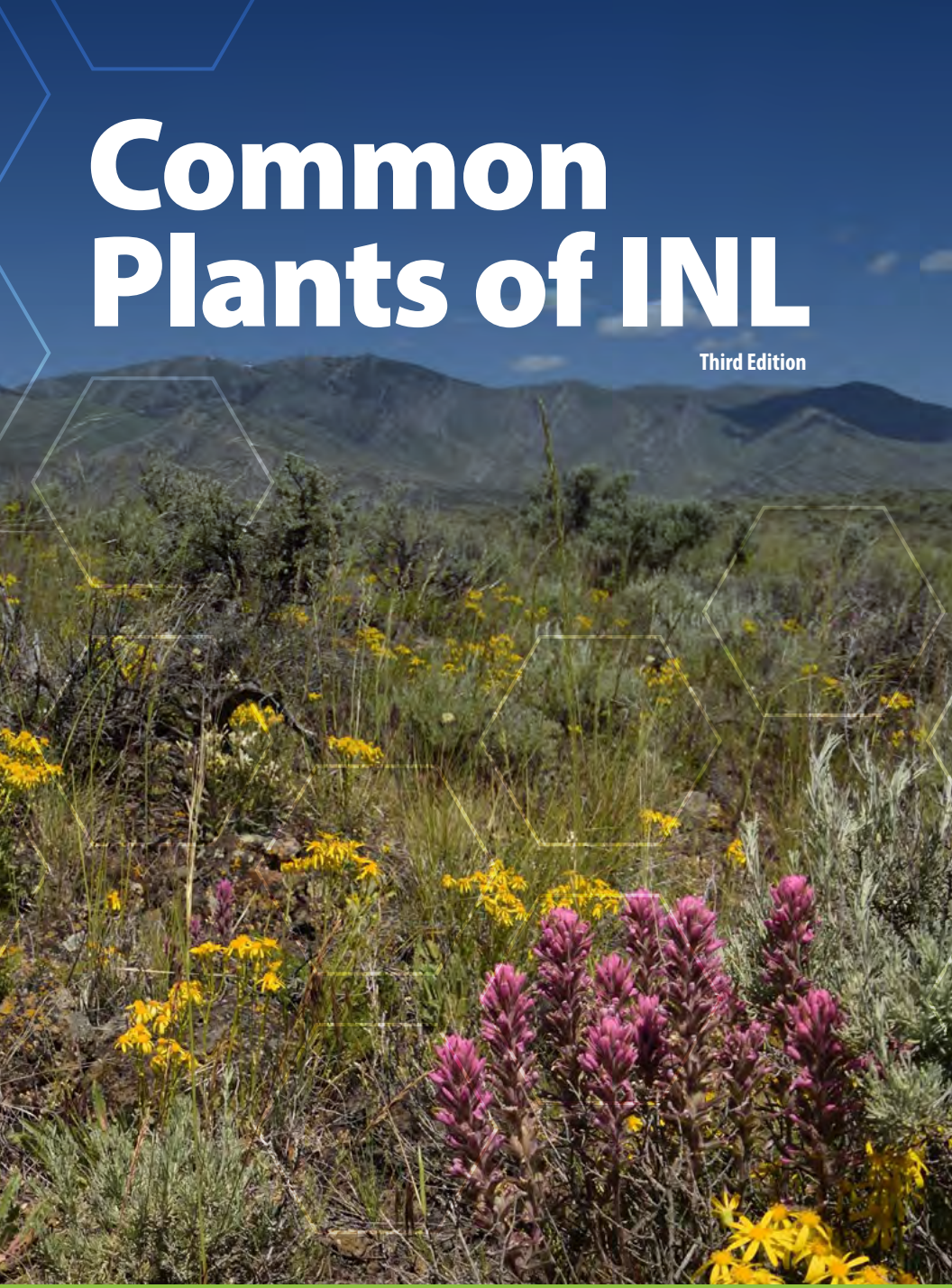
Common Plants of INL

Third Edition



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INL
Idaho National Laboratory

This book belongs to:

Name: _____

Contact: _____

Credits

Graphic design by Dallas M. McCary.

Line drawings by Jackie R. Hafla.

Featured plant photographs by Kristin N. Kaser.

A sincere thank you to the Natural Resources Group for their advice that kept this guidebook focused on practical field use by a variety of non-technical users.

Although this third edition represents a substantial revision to previous editions, the previous editions established the value of a site-specific guide that translates botanical taxonomic information into a plant identification resource that can be used to facilitate undergraduate training in ecological monitoring at the INL Site. We thank the interns who have used earlier editions of this guidebook and provided valuable feedback for the improvements in the current edition.

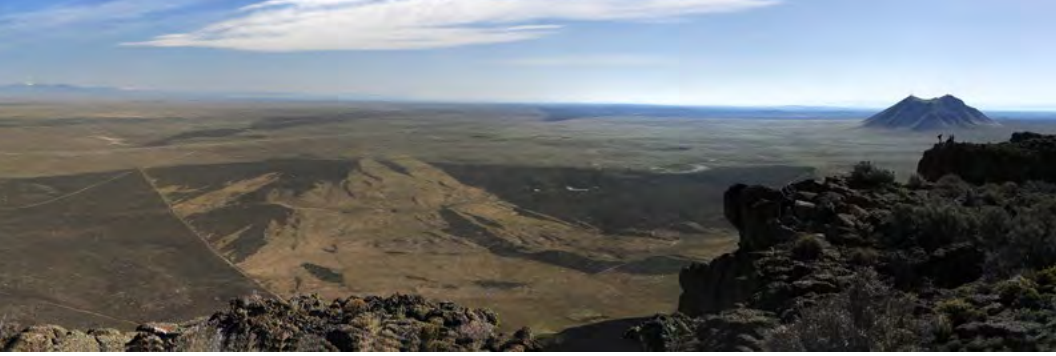
PHOTO BY NINA KECK

How to Use This Book

Although we sincerely hope this field guide will appeal to a broad audience, the authors specifically designed it to support ecological monitoring on the INL (Idaho National Laboratory) Site. Because it is used to facilitate site-specific monitoring, it is organized differently from traditional field guides. Plant species are organized into functional groups based on their physical growth form. The primary functional groups are forbs, graminoids, shrubs, and trees. Within each functional group, species are listed alphabetically by a unique INL plant code. Species are identified by matching the identifying characteristics and associated photographs from a species description page to the plant observed in the field. Each plant description page notes whether the species is native (N) or introduced (I) and whether it is an annual (A), biennial (B), or perennial (P). Nativity and duration are indicated in parentheses at the top of each species description page. A red corner label on the species description page designates the species as noxious within the State of Idaho. Plants are identified as important pollinator species with a bee symbol in the top banner near the INL plant code (pollinators defined using USDA NRCS 2011).

There are three indices in the back of the field guidebook to assist users who are familiar with either the common name or family in finding the INL plant code. Each index will provide the INL plant code and corresponding page number(s).

Nomenclature follows the USDA Plants Database (2023). Identification, taxonomy, and synonyms follow Flora of the Pacific Northwest (Hitchcock and Cronquist 2018) and the online Flora of North America Editorial Committee, eds. (1993+).



What are INL Plant Codes?

Assigning unique codes to each species is a common approach for expediting vegetation sampling and the INL plant codes used throughout this guide ensure consistency among INL-specific datasets. INL plant codes are typically derived from the first two letters of the genus and the first two letters of the specific epithet. For example, *Artemisia tridentata* is assigned ARTR. When two species share the same code, at least one of the species is assigned a number. For example, *Ericameria nauseosa* is assigned the code ERNA and *Ericameria nana* is assigned the code ERNA2. Although the codes used in this book generally follow national codes assigned by the USDA Plants National Database, the number at the end of the code is specific to the INL and is related to the abundance of that species. There are a few INL plant codes that do not follow this convention but have been retained to maintain consistency with existing long-term datasets. For example, *Artemisia tripartita* was assigned the INL plant code ARTP instead of ARTR, followed by a number.

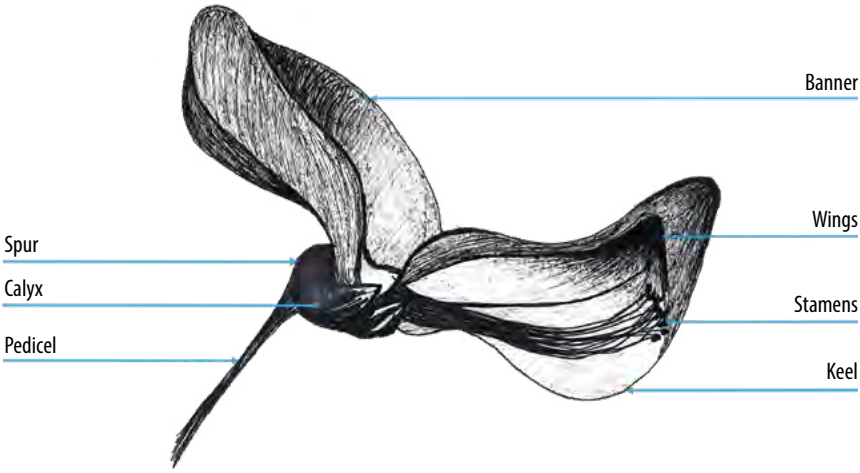
This field guidebook is the third edition of a living document that will continue to change as its utility is assessed and tested through use in the field. For the most current version of this document and for additional INL ecological resources see https://inl.gov/natural-resources/.

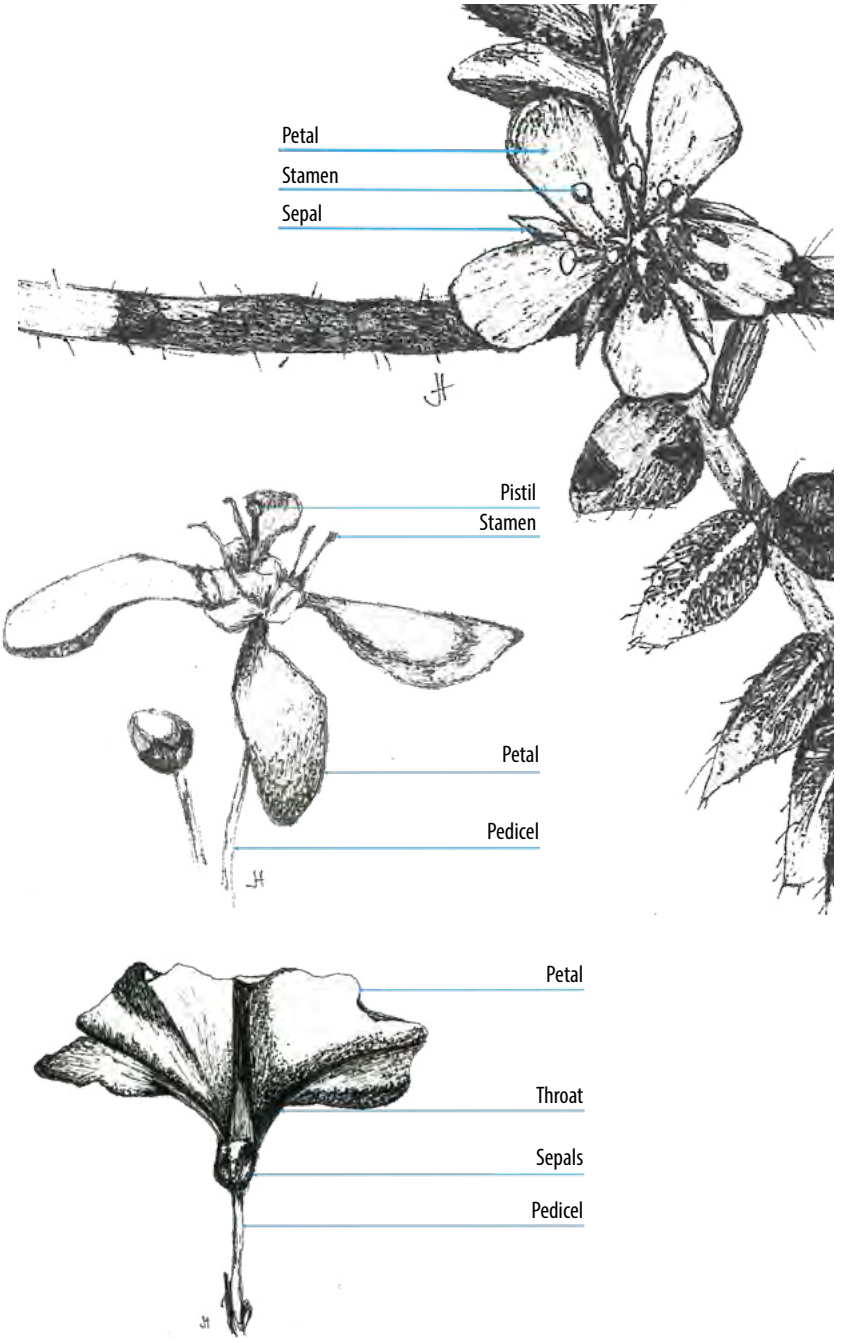
Table of Contents

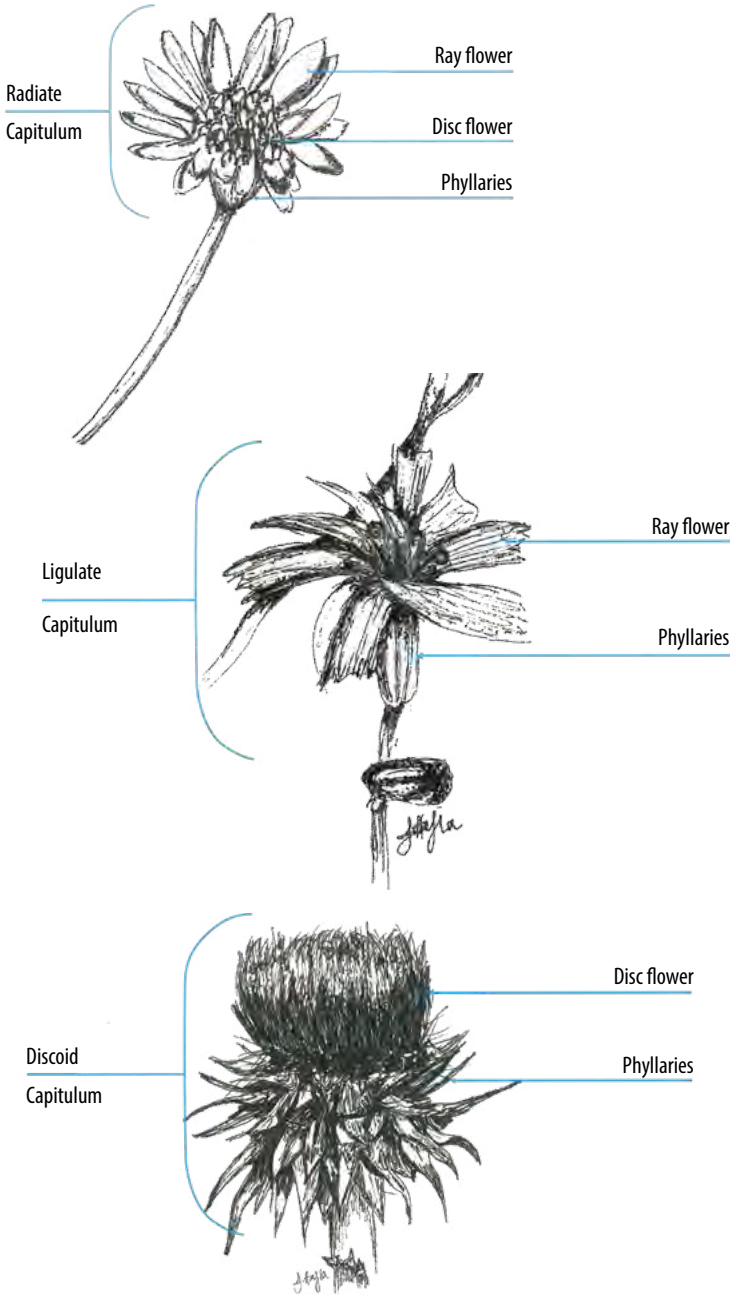
Terminology

Anderson's larkspur | *Delphinium andersonii*

Flower Anatomy




Petal
Stamen
Sepal
Pistil
Stamen
Petal
Pedicel
Petal
Throat
Sepals
Pedicel

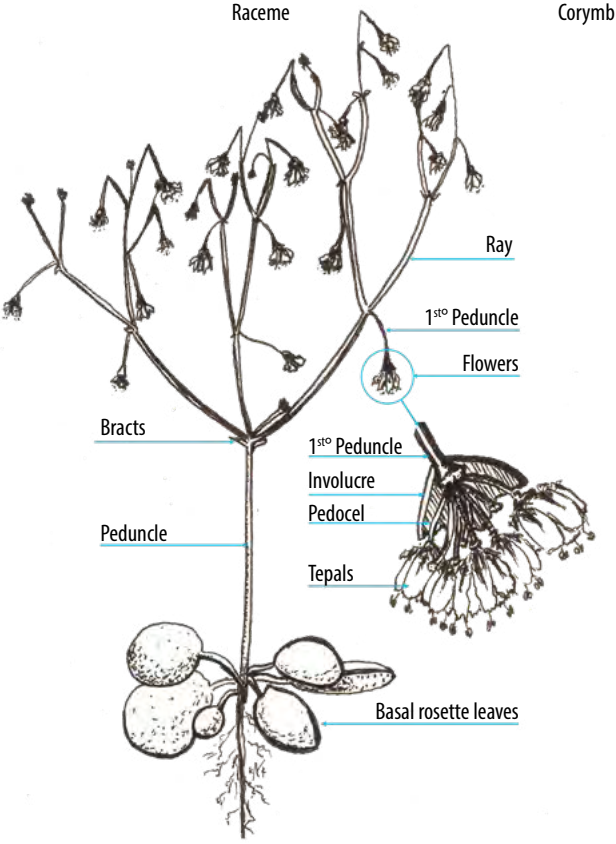

Radiate
Capitulum
Ray flower
Disc flower
Phyllaries
Ligulate
Capitulum
Ray flower
Phyllaries
Discoid
Capitulum
Disc flower
Phyllaries

Flower Arrangements

Spike

Raceme

Corymb



Pedunculate

Panicle

Umbel

Cyme

Helicoid Cyme

Spike

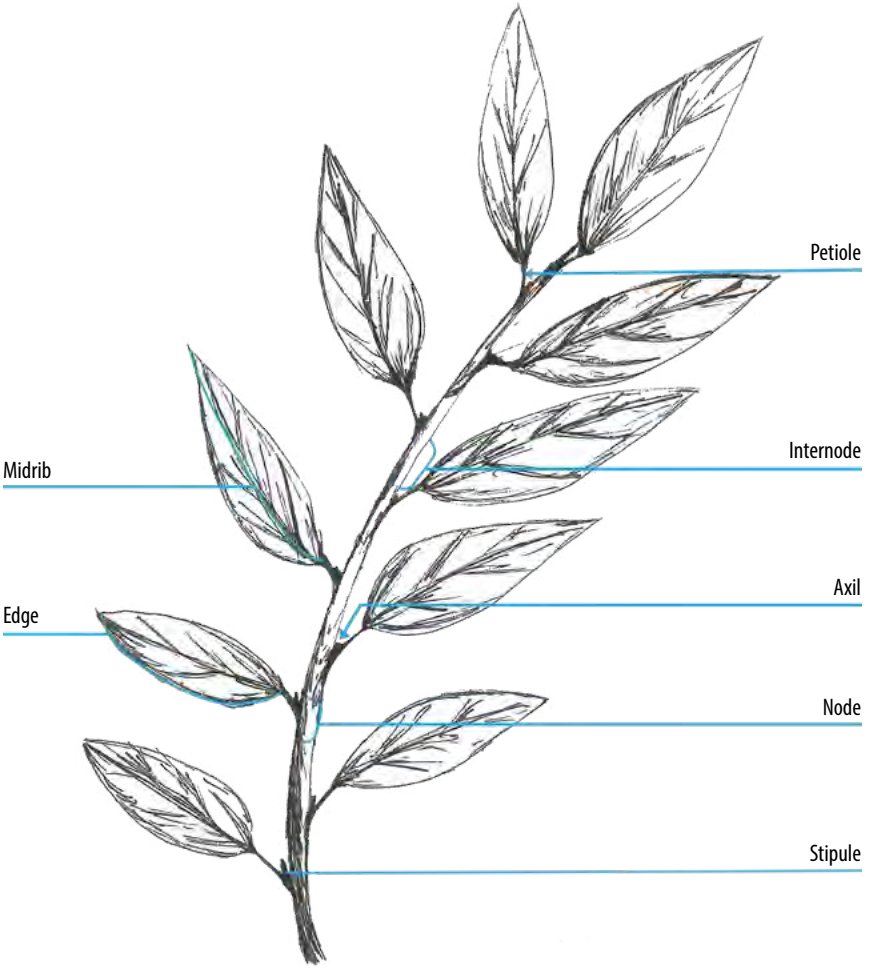
Corymb

Panicle

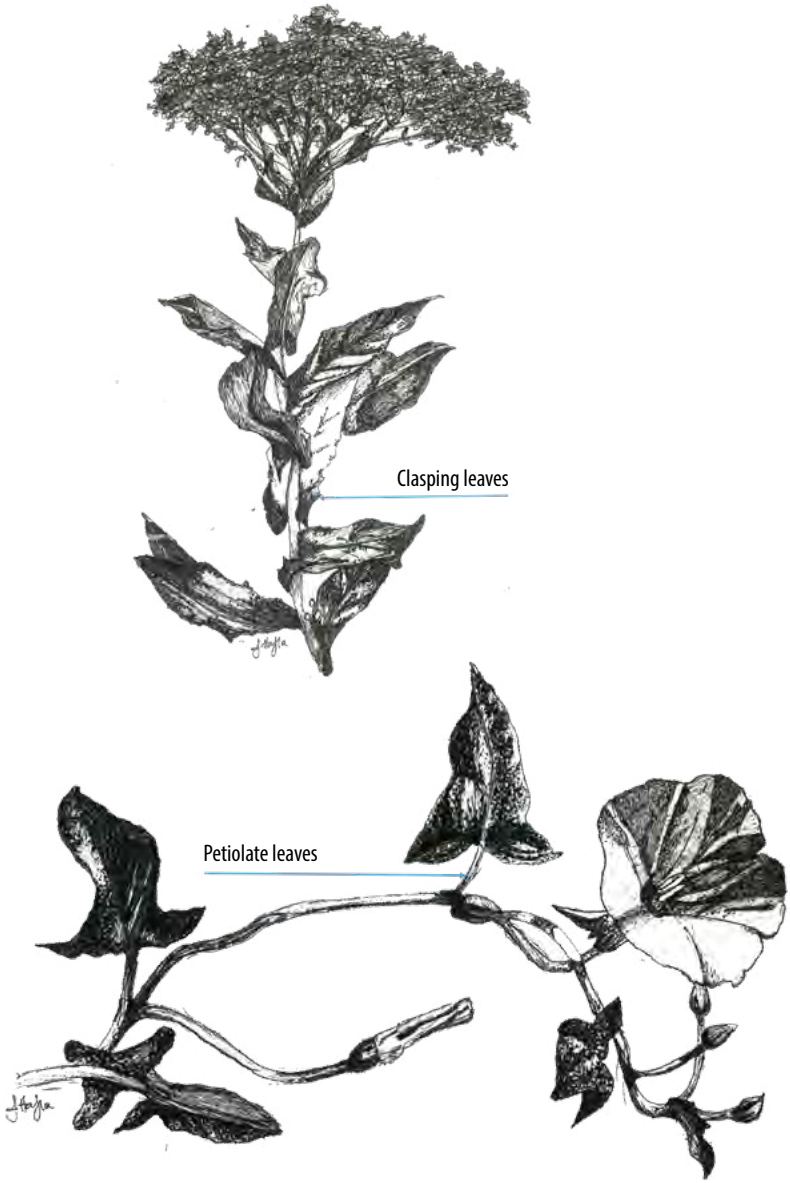
Cyme

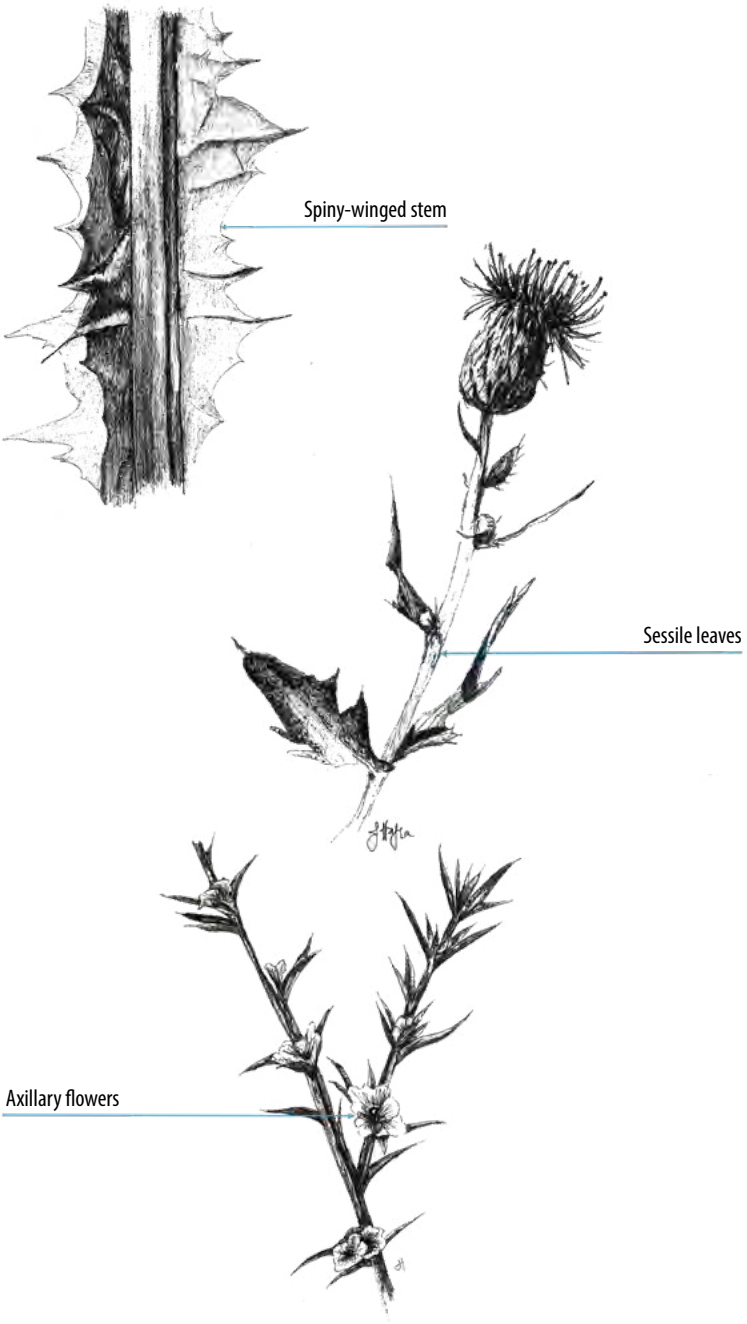
Solitary

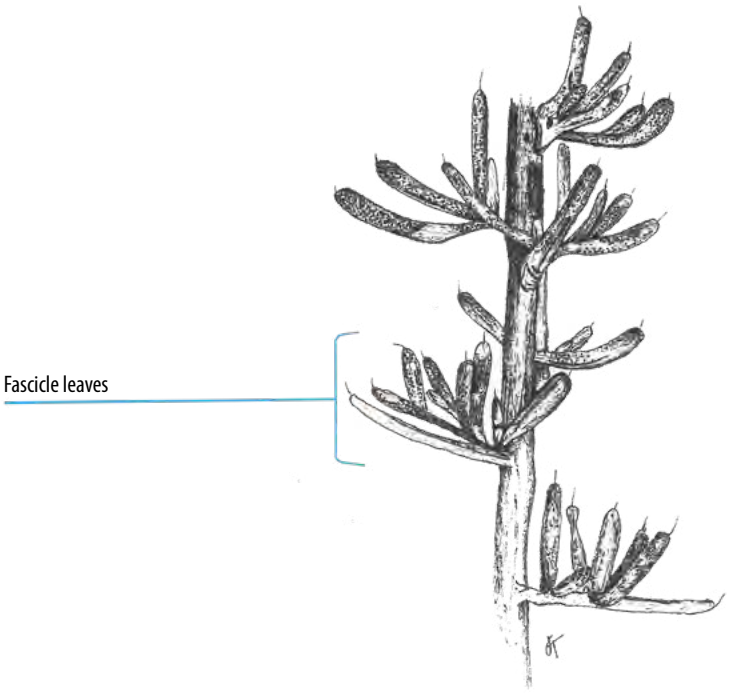
Leaf Anatomy

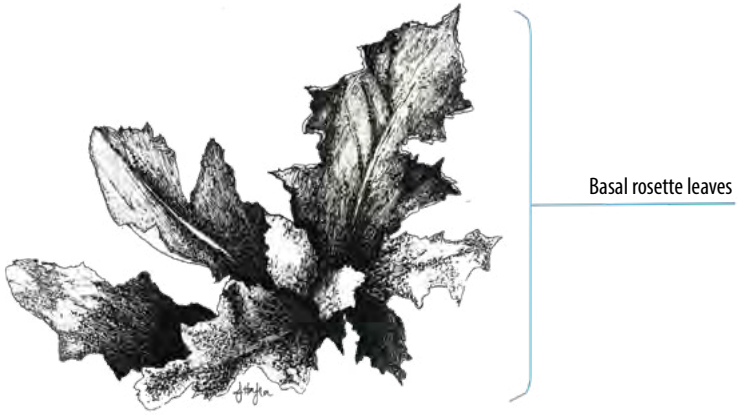


Structural Attachment Types




Spiny-winged stem
Sessile leaves
Axillary flowers


Fascicle leaves

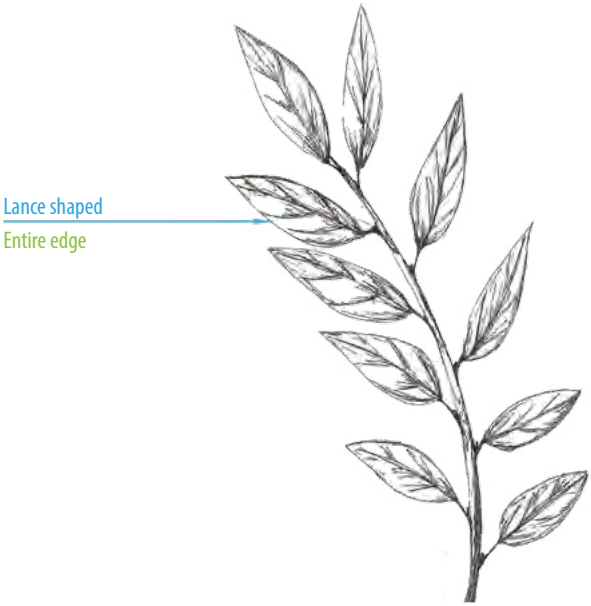

Basal rosette leaves

Leaf Architecture

Legend

Leaf Shape

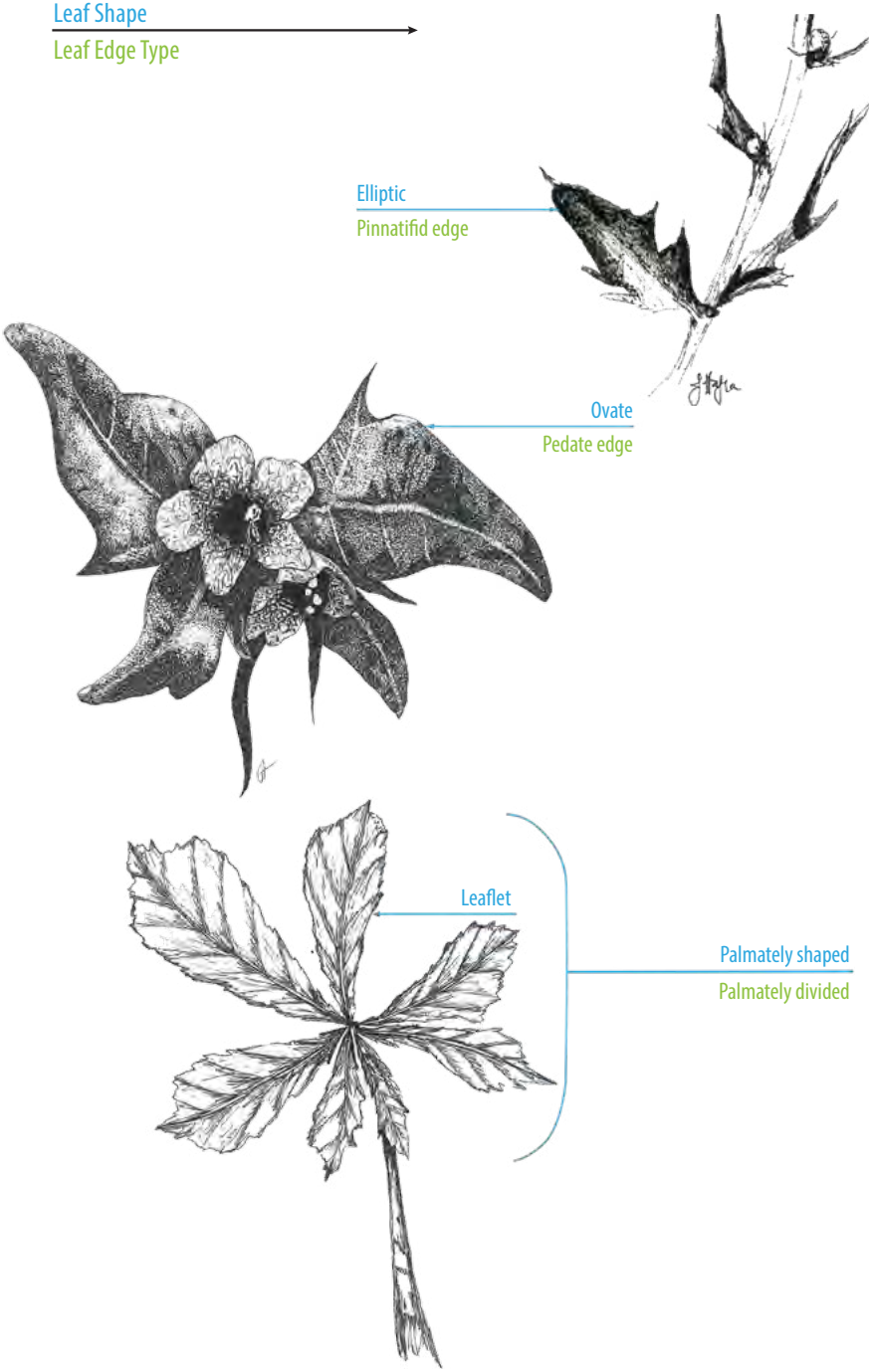
Leaf Edge Type

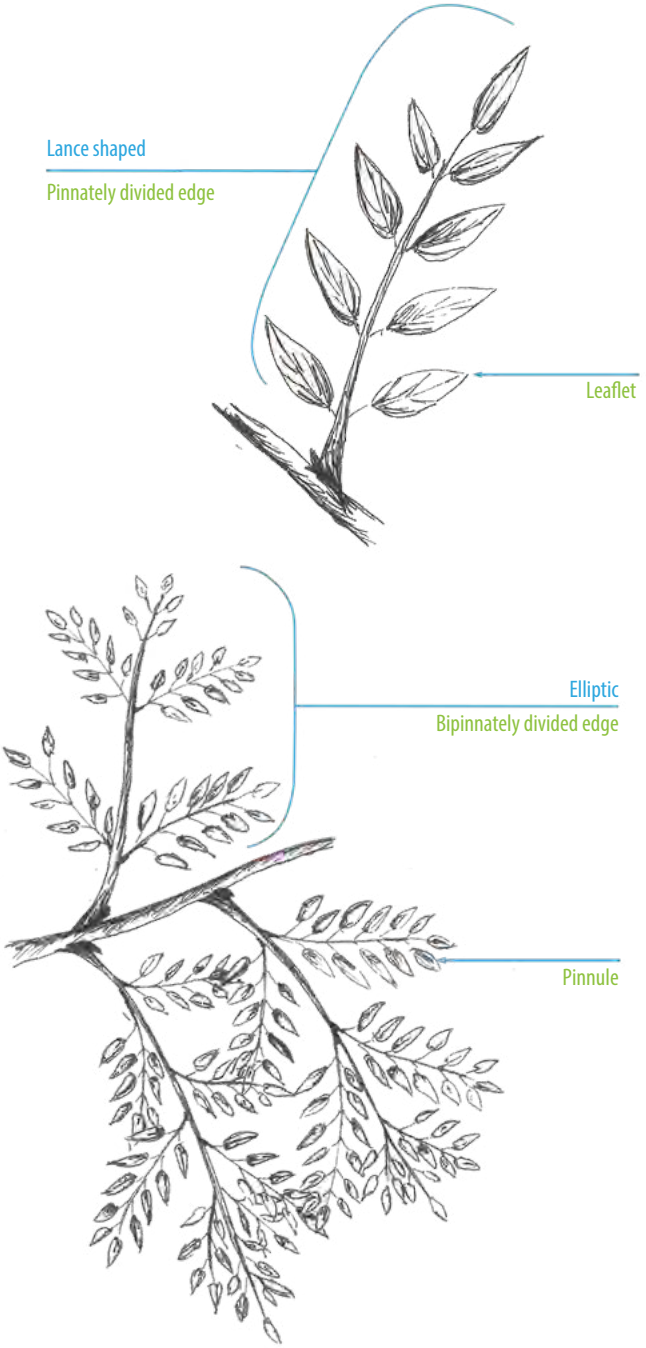


Legend

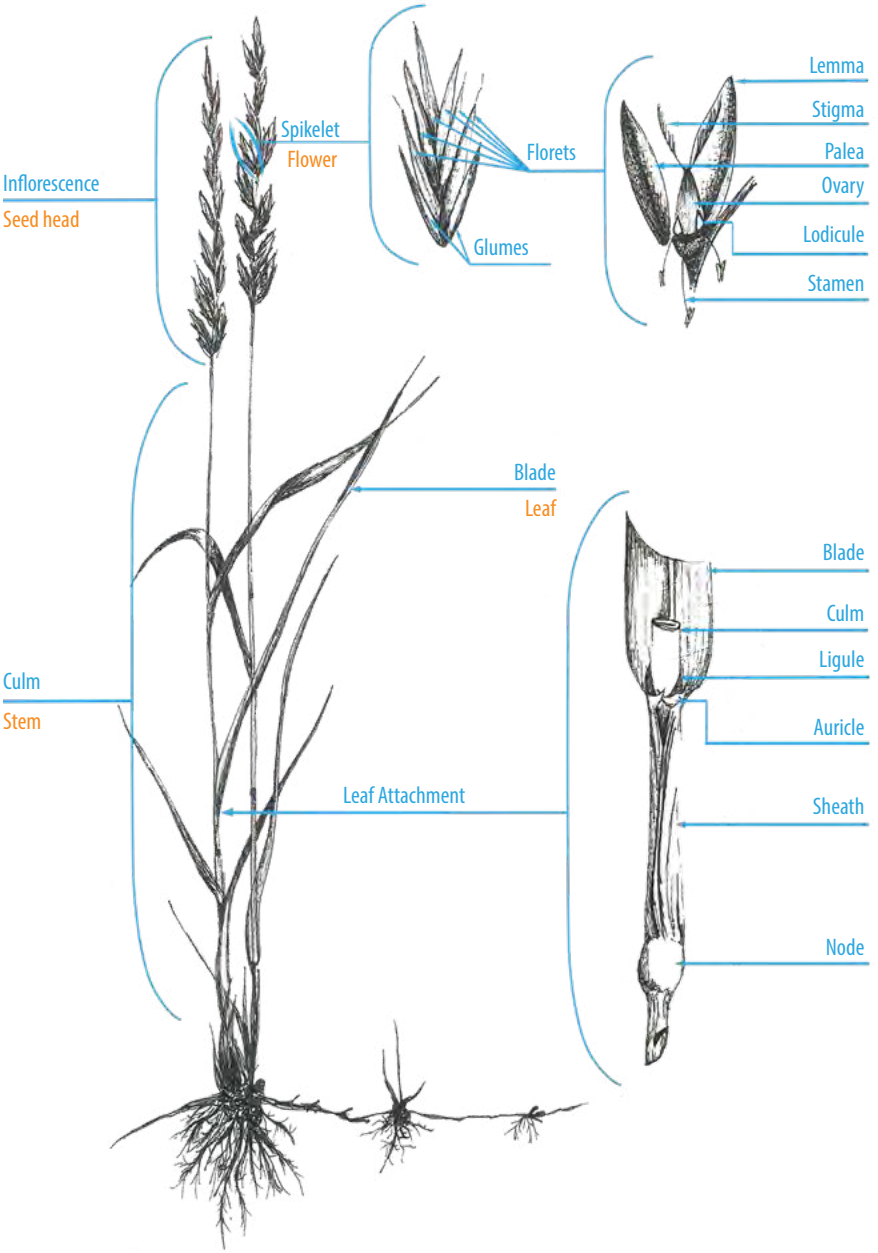
Leaf Shape

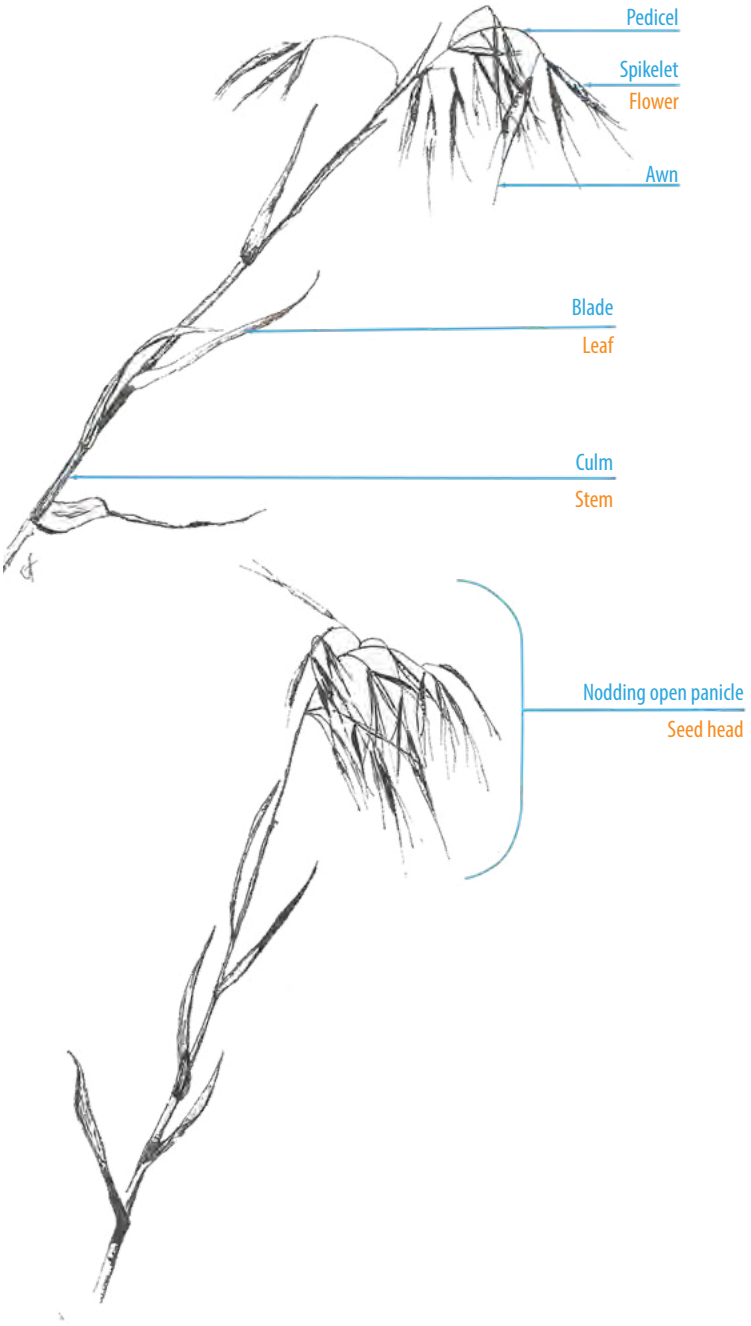
Leaf Edge Type



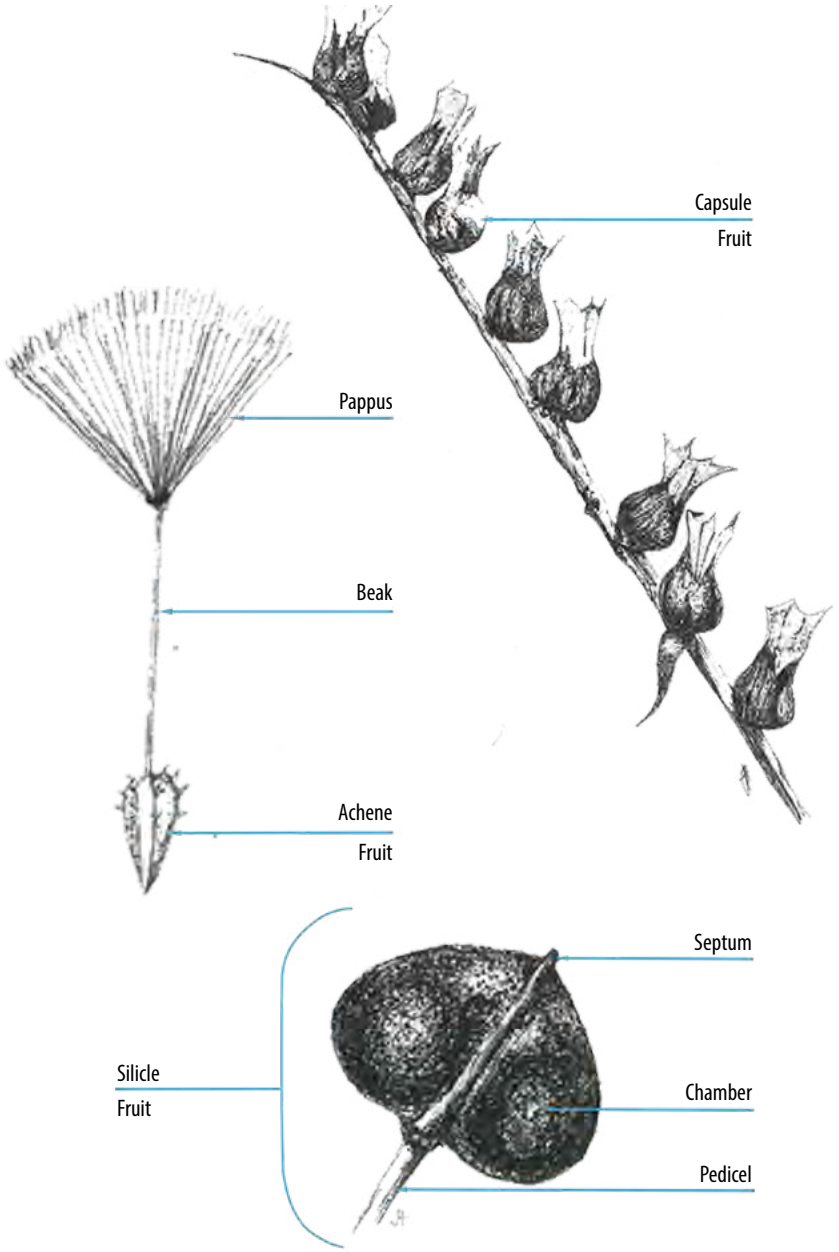

Lance shaped
Pinnately divided edge
Leaflet
Elliptic
Bipinnately divided edge
Pinnule

Grass Anatomy




Pedicel
Spikelet
Flower
Awn
Blade
Leaf
Culm
Stem
Nodding open panicle
Seed head

Fruits


Capsule
Fruit
Pappus
Beak
Achene
Fruit
Septum
Silicle
Fruit
Chamber
Pedicel

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.

NATIVE

ALDE (IA) *Alyssum desertorum*

COMMON NAME
desert alyssum

FAMILY
Mustard (*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.

INTRODUCED



COMMON NAME
sand gilia

FAMILY
Phlox (*Polemoniaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have 5 fused petals shaped like a funnel (funnelform). 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.

ALLO (NA) *Aliciella lottiae*

COMMON NAME
Lott's gilia

FAMILY
Phlox (*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.

NATIVE

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 are1.5-2.5 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.

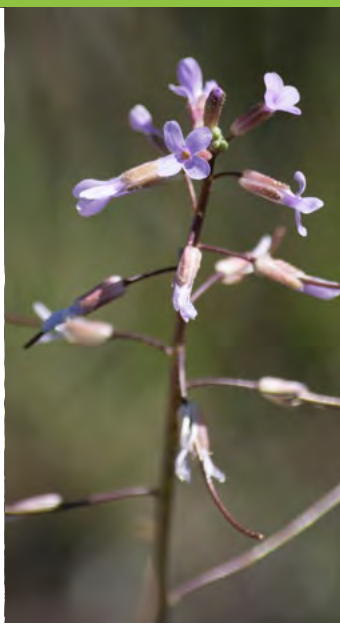
AKA: *Allium aridum, A. geyeri* var. *textile, A. reticulatum, A. r.* var. *playanum.*

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.

NATIVE

ARCO (NP) *Arabis cobrensis*





COMMON NAME
sagebrush 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 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.

NATIVE

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 eachother (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.

NATIVE

ARHO (NP) *Arabis holboellii*



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.

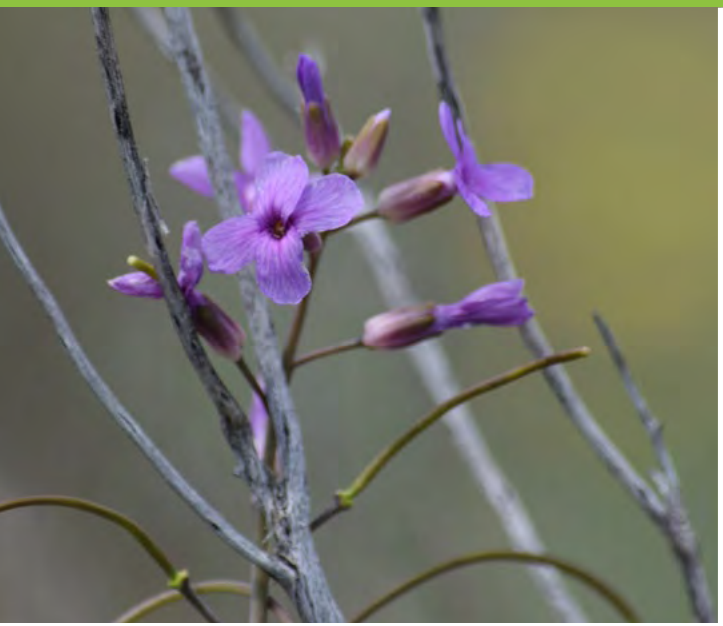
NOT TO BE MISTAKEN FOR

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.

NATIVE



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 (aruiculate), 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.

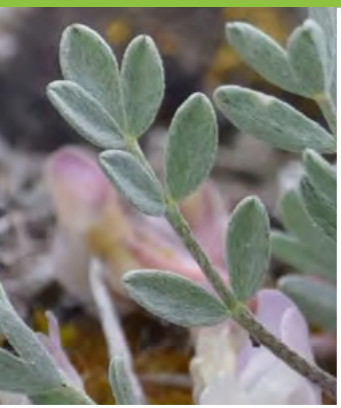
NOT TO BE MISTAKEN FOR

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.

NATIVE



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 tuffed, and bloom from April to June.

SITE AND HABITAT

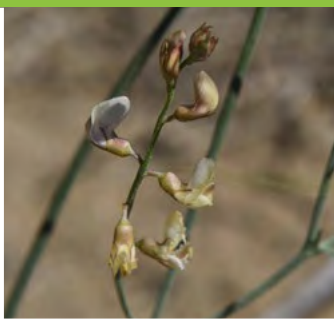
Found across the INL Site on basalt outcroppings and in playas.

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 boarders in sandy soils.

NOT TO BE MISTAKEN FOR

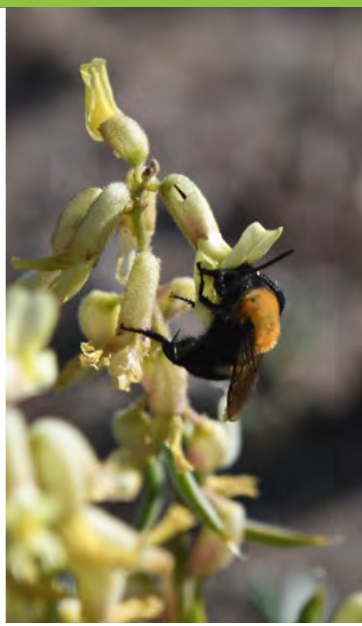
ASCO: Pods are laterally flattened (compressed), linear, and ash-colored from fine white hairs (cinereous).

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.

ASCU (NP) *Astragalus curvicarpus*





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 haibt. **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

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 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. platypphyllidius, A. l. var. salinus, and A. l. var. lentiginosus.

NATIVE

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.

NATIVE

BASA (NP) *Balsamorhiza sagittata*

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 attahced 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.

NATIVE

COMMON NAME
kochia

FAMILY
Goosefoot (*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 viens. **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.

INTRODUCED

CAAN (NP) *Castilleja angustifolia*

COMMON NAME
northwest Indian paintbrush

FAMILY
Figwort (*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.

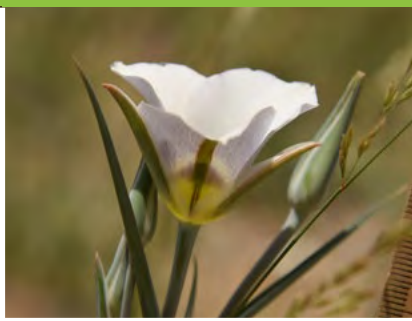
NOT TO BE MISTAKEN FOR

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.

NATIVE



COMMON NAME
Bruneau mariposa lily

FAMILY
Lily (*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.

CAMI (NA) *Camissonia minor*

COMMON NAME
small evening primrose

FAMILY
Evening-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.

NATIVE

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.

NOXIOUS




COMMON NAME
Douglas' dustymaiden

FAMILY
Sunflower (*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 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.

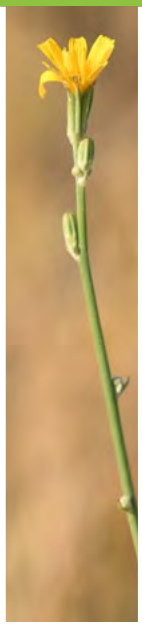
NOT TO BE MISTAKEN FOR

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.

NATIVE



COMMON NAME
rush skeletonweed

FAMILY
Sunflower (*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 attatchments.

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 vegetatitively from either root buds or from root fragments (adventitious) and populations typically expand by this underground regeneration process.

NOXIOUS

CHLE (NA) *Chenopodium leptophyllum*



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 inconspicious.

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 dispearsed 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".

NATIVE

COMMON NAME
Canada 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 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

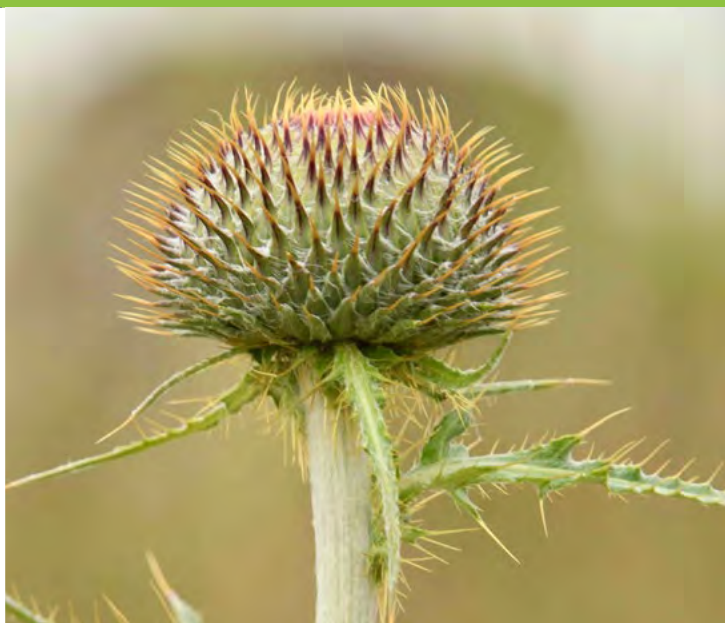
CIVU: Upper leaf surfaces are covered in spines and stems are spiny-winged. **ONAC:** Stems are spiny-winged. **CANU:** Flower stalks bear solitary capitulum, and phyllaries are > 2 mm wide. **CISU:** Disc flowers are white and capitula are > 2 cm wide.

AKA: *Cirsium incanum*

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

NOXIOUS

CISU (NB) *Cirsium subniveum*



COMMON NAME
Jackson Hole 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 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.

NATIVE



COMMON NAME
bushy bird's beak

FAMILY
Figwort (*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.

NATIVE

COUM (NP) *Comandra umbellata*

COMMON NAME
bastard toadflax

FAMILY
Sandalwood (*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).

NATIVE



COMMON NAME
tapertip hawksbeard

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 forb for sage-grouse (Centrocerus urophasianus) and attracts both generalist and specialized pollinators.

NATIVE

COMMON NAME
cushion cryptantha

FAMILY
Forget-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.

NATIVE

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

FAMILY
Forget-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.

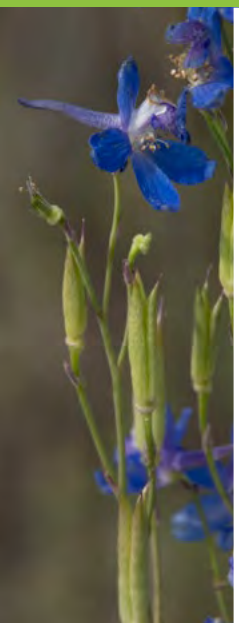
NOT TO BE MISTAKEN FOR

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.

NATIVE



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.

NATIVE

DEPI (NA) *Descurainia pinnata*

COMMON NAME
western tansymustard

FAMILY
Mustard (*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.

NATIVE

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.

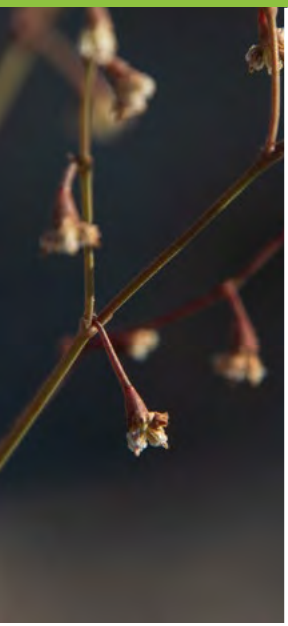
NOT TO BE MISTAKEN FOR

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).

INTRODUCED



COMMON NAME
nodding buckwheat

FAMILY
Buckwheat (*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.

NATIVE

COMMON NAME
cushion buckwheat

FAMILY
Buckwheat (*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.

NATIVE

COMMON NAME
shaggy fleabane

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 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.

NATIVE

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*

Fun Facts: In Greek, 'erion' translates to 'wool' and 'caster' translates to 'star.'

GADI (NA) *Gayophytum diffusum*

COMMON NAME
spreading groundsmoke

FAMILY
Evening-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 Fisica y Politica de Chile' (1854). He traveled extensively across Chile and Peru, as well as vast regions in western Europe and northern China.

NATIVE

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.

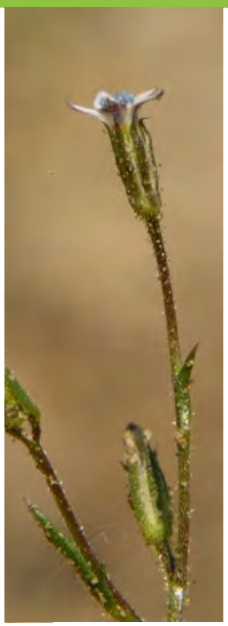
NOT TO BE MISTAKEN FOR

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.

NATIVE


COMMON NAME
Tweedy's gilia

FAMILY
Phlox (*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 rosettet.

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

Fun Facts: Plants are awesome and so are you!



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.

NATIVE

HAGL (IA) *Halogeton glomeratus*



COMMON NAME
halogeton

FAMILY
Goosefoot (*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.

INTRODUCED

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 Nuttle (1786-1859).

IPCO (NP) *Ipomopsis congesta*

COMMON NAME
ballhead gilia

FAMILY
Phlox (*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

FAMILY
Phlox (*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).

NATIVE

IVAX (NP) *Iva axillaris*

COMMON NAME
povertyweed

FAMILY
Sunflower (*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).

NATIVE

COMMON NAME
flatspine stickseed

FAMILY
Forget-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).

LASE (IA) *Lactuca serriola*

COMMON NAME
prickly lettuce

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 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.

INTRODUCED

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 divded 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.

NATIVE

LOFO (NP) *Lomatium foeniculaceum*

COMMON NAME
desert biscuitroot

FAMILY
Carrot (*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.

NATIVE



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.

NATIVE

LYGR (NP) *Lygodesmia grandiflora*

COMMON NAME
largeflower skeletonplant

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 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.'

NATIVE

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

FAMILY
Blazing-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: *Acrolasia albicaulis*

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

NATIVE

COMMON NAME
tufted evening-primrose

FAMILY
Evening-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 cespitosa*

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

FAMILY
Evening-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.

NATIVE

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 trianglular. **SEVU:** Capitulum only bear disc flowers (discoid).

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 artic and alpine flora.

NATIVE

PECY (NP) *Penstemon cyaneus*

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

Fun Facts: The INL Site has more than 500 documented vascular plant species.

PEHU (NP) *Penstemon humilis*

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.

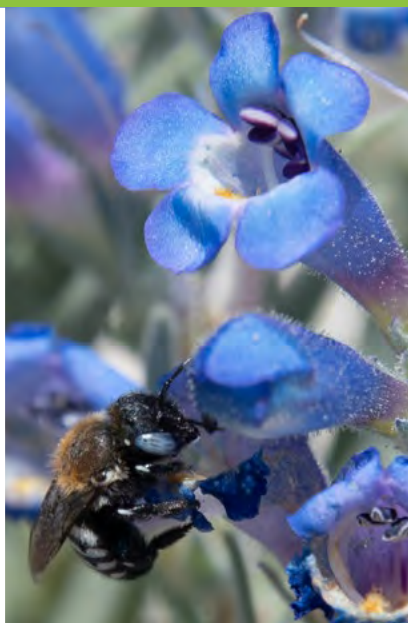
NOT TO BE MISTAKEN FOR

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 boarder in 1834. The Latin word "humile" translates to "humble" or "low".

NATIVE



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.'

PHAC (NP) *Phlox aculeata*

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.

NATIVE

COMMON NAME
Hood's phlox

FAMILY
Phlox (*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 discinct 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

FAMILY
Phlox (*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.

NATIVE

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).

NATIVE

PSLA (NP) *Psoralidium lanceolatum*

COMMON NAME
lemon scurfpea

FAMILY
Pea (*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.

NATIVE

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.

RUVE (NP) *Rumex venosus*

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.

NATIVE

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 a sign of poor ecological health.

INTRODUCED

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.

NATIVE

COMMON NAME
Jim Hill tumblemustard

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), 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.

INTRODUCED

COMMON NAME
Munro's globemallow

FAMILY
Mallow (*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.

NATIVE

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).

NATIVE

STVI (NP) *Stanleya viridiflora*

COMMON NAME
prince's plume

FAMILY
Mustard (*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.

INTRODUCED

COMMON NAME
showy Townsend daisy

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 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

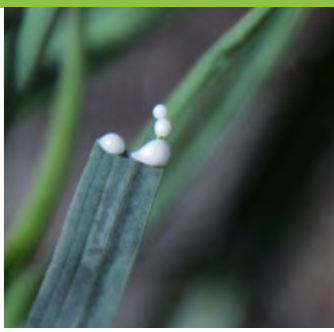
ERPU, ERFI: Ray flowers are purple and leaves are thread-like. **ERCA3:** Capitiula have 30-100 white to blue ray flowers, and flowering stalks have many leaves.

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.

NATIVE






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.

INTRODUCED

ZIPA (NP) *Zigadenus paniculatus*



COMMON NAME
panicled deathcamas

FAMILY
Lily (*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).

NATIVE

Graminoids

American Pronghorn | *Antilocapra americana*

What is a Graminoid?

Grasses, sedges, and rushes are collectively referred to as graminoids. They have long flat blades with parallel veins and cryptic flowers.

Grasses are the most abundant and widespread of the graminoids on the INL Site. Sedges and rushes tend to be restricted to specific and limited habitats, generally associated with increased soil moisture availability. These major graminoid groups can be distinguished from one another by their stem characteristics. Rushes have round pith-filled stems, sedges have triangular pith-filled stems, grasses have round hollow stems.

Some of the characteristics most useful for identifying grasses include the length of their lifecycle, their growth form, and the structure of their flower heads. Annual grasses have delicate root structures and occur with just one or a few flower stalks per individual. Perennial grasses have more robust root structures, and their growth form may be rhizomatous or in bunches. Rhizomatous grasses occur with one or a few flower stalks per individual and individuals are connected by an extensive underground root system. Bunchgrasses occur with many flower stalks emerging from a compact base with an extensive root system. Unique characteristics of the flowers, like awns, a nerve that extends past the flower, are also useful for grass identification.

Field Notes

COMMON NAME
Indian ricegrass

FAMILY
Grass (*Poaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Each flower (floret) has an outer bract (lemma) that is sac-shaped, has an elongated nerve (awn) that is 3-6 mm long, bent once, coarse, and deciduous. There is 1 floret per group (spikelet) that is subtended by a pair of highly modified bracts (glumes) which are 6.5-9 mm long. Spikelets are attached to distinct stalks (pedicels) on flowering stalks to form solitary terminal blooms on laterally branching stems in a panicle arrangement with spreading branches.

Blades: Are < 1 mm wide and have inwardly rolled edges (involute).

Stems: Are stalks (culms) that are round and hollow with an outer covering (sheath). The structure jutting from the blade and sheath junction (ligule) is 2.5-7.5 mm tall.

Plants: Are 25-70 cm tall, are a bunchgrass, and bloom from April to July.

SITE AND HABITAT

Found scattered across the INL Site on sandy or gravely soils.

NOT TO BE MISTAKEN FOR

HECO: Lemma awns are 6.5-22.5 cm long, are bent twice, and twisted, glumes are 16-35 mm long, and leaf blades are 0.5-4 mm wide. **ACOC:** Lemma awns are 1.5-5.5 cm long, are bent twice, twisted, and fluffy. **SPCR:** Sheaths are fluffy.

AKA: *Oryzopsis hymenoides, Eriocoma hymenoides*

Fun Facts: A. hymenoides is used to stabilize soils in sandy areas, for decorative nativescaping, to provide habitat and forage for animals, and the seeds have been harvested by Native American tribes.

NATIVE

AGCR (IP) *Agropyron cristatum*

COMMON NAME
crested wheatgrass

FAMILY
Grass (*Poaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Each flower (floret) has an outer bract (lemma) with an elongated nerve (awn) that is 1-6 mm long. There are 3-6 florets per group (spikelet) that are subtended by a pair of highly modified bracts (glumes) which are offset, 3-6 mm long, and have a 3 mm long awn. The spikelets attach directly to the flowering stalk in a spike arrangement, overlap like roof shingles, and are acutely bent more than 40°.

Blades: Are 1.5-6 mm wide, are flat, distinctly nerved, and have rough edges.

Stems: Are stalks (culms) that are round and hollow with an outer covering (sheath) that is open and hairless. The structure jutting from the blade and sheath junction (ligule) is 1.5 mm tall, is transparent, and has jagged edges.

Plants: Are 25-90 cm tall, are a bunchgrass, and bloom from April to October.

SITE AND HABITAT

Found across the INL Site and was historically planted at disturbed sites.

NOT TO BE MISTAKEN FOR

AGDE: Spikelets lie flat along the stem or, if bent, are < 35°.

AKA: None

Fun Facts: Small animals eat and cache the seeds, which is thought to be an important dispersal agent for this species. It out competes less desirable species like cheatgrass but it can form monocultures precluding the return of native flora and fauna diversity.

INTRODUCED



COMMON NAME
cheatgrass

FAMILY
Grass (*Poaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Each flower (floret) has an outer bract (lemma) that is fuzzy, two lobed, and straight, with an elongated nerve (awn) that is 12-20 mm long at its tip and becomes barbed with age. There are 3-8 florets per group (spikelet) that are subtended by a pair of highly modified bracts (glumes) which are uneven, thin, and fluffy. Each spikelet is attached to a distinct stalk (pedicel) on the flowering stalk to form solitary terminal blooms on laterally branching stems in a panicle arrangement with drooping, spreading branches that are 5-20 cm long.

Blades: Are 2-6 mm wide, are flat, and have soft hairs on both sides.

Stems: Are stalks (culms) that are round and hollow with an outer covering (sheath), and are solitary or clustered. The sheath is covered in soft hairs and is closed. The structure jutting from the blade and sheath junction (ligule) is more than 3 mm tall, transparent, and has jagged edges.

Plants: Are 5-50 cm tall, are winter annuals, and bloom from March to August.

SITE AND HABITAT

Scattered across the INL Site, especially in disturbed soils or recently burned areas.

NOT TO BE MISTAKEN FOR

BRAR: Lemma awns are attached below the tip, reflexed, and twisted.

AKA: *Anisantha bromus*

Fun Facts: Cheatgrass became established by the 1930s after it arrived in North America from the Mediterranean.

INTRODUCED

CADO (NP) *Carex douglasii*



COMMON NAME
Douglas' sedge

FAMILY
Sedge (*Cyperaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: The flowers (florets) are grouped together (spikelet) and bear either oval shaped female florets (pistillate) or lance shaped male florets (staminate). The spikelets are tan, densely crowd the flowering stalk apex, are 3.5 cm long, and are attached directly to the stem in a spike arrangement.

Fruits: Have hard sealed hulls with one seed (achene), are wrapped in a sac (perigynium), are brown, and are 3-5 mm long by 2 mm wide.

Blades: Are 3 mm wide, are flat, and grow in groups of 3-8 basal clusters. When viewed from above, leaves often appear to be arranged like a propeller blade.

Stems: Creep underground (rhizomatous), send up stalks (culms) that are pith filled and triangular in cross section, and have an outer covering (sheath). The structure jutting from the blade and sheath junction (ligule) is 3 mm tall.

Plants: Are 10-30 cm tall, form rhizomatous colonies, bear either pistillate or staminate florets (dioecious) and bloom from April to July.

SITE AND HABITAT

Found across the INL Site in a wide range of soil textures, often in alkaline areas.

NOT TO BE MISTAKEN FOR

CAAU: Plants bear both pistillate and staminate florets (monoecious).

AKA: None

Fun Facts: A common mnemonic to remember differences among graminoids is "Sedges have Edges, Rushes are Round, and Grasses are hollow from their knees to the Ground".

NATIVE

COMMON NAME
bottlebrush squirreltail

FAMILY
Grass (*Poaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Each flower (floret) has an outer bract (lemma) that is rough, is 8-10 mm long, and has an elongated nerve (awn) that is 20-70 mm long and bent once. There are 2-4 florets per group (spikelet) that are subtended by a pair of highly modified bracts (glumes) which are offset, reflexed, and have 1-3 awns that are up to 80 mm long. Each attachment point (node) has a pair of spikelets that are attached directly to the flowering stalk in a spike arrangement and fade from green to red.

Blades: Are 1-5 mm wide, are flat or have inwardly rolled edges (involute), are coarsely veined, and coil into spirals as they dry.

Stems: Are stalks (culms) that are round and hollow with an outer covering (sheath) that is open. The structure jutting from the blade and sheath junction (ligule) is transparent, purple, and 1 mm tall. The sheath top has a pair of claws (auricles) that are < 1 mm long.

Plants: Are 10-45 cm tall, are a bunchgrass, and bloom from April to August.

SITE AND HABITAT

Common to the INL Site in fine to medium textured and sometimes gravelly soils.

NOT TO BE MISTAKEN FOR

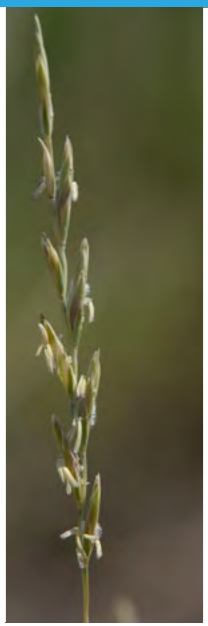
HOJU: Auricles are absent. **ACTH:** Lemma awns are bent twice and auricles are absent.

AKA: *Sitanion hystrix*

Fun Facts: The spikelets fall off the seed head (disarticulate) quickly after maturing.

NATIVE

ELLA (NP) *Elymus lanceolatus*


COMMON NAME
thickspike wheatgrass

FAMILY
Grass (*Poaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Each flower (floret) has an outer bract (lemma) that rarely has an elongated nerve (awn). There are 3-11 florets per group (spikelet) that are subtended by a pair of highly modified bracts (glumes) which are 0.4-1.6 mm wide, broadly taper to an acute blunt point, and may be hairy. There is 1 spikelet per attachment point (node) and spikelets attached directly to the flowering stalk in a spike arrangement.

Blades: Are 2-6 mm wide, are flat or have inwardly rolled edges (involute), and have stiff, prominent veins.

Stems: Creep underground (rhizomatous) and send up stalks (culms) that are round and hollow with an outer covering (sheath) that is open and may have a white waxy coating (glaucous). The structure jutting from the blade and sheath junction (ligule) is 0.5 mm tall, transparent, and has a jagged edge. The sheath top has a pair of claws (auricles) that are 1.5 mm long and only present on lower culm leaves.

Plants: Are 30-80 cm tall, are rhizomatous, and bloom from late May to August.

SITE AND HABITAT

Abundantly found throughout the INL Site on medium to coarse-textured soils.

NOT TO BE MISTAKEN FOR

PASM: Glumes are 0.2-0.8 mm wide and narrowly taper to a thin, awn-like tip.
ELTR: Plants are bunchgrasses and have 2 spikelets per node.

AKA: *Agropyron dasystachyum*

Fun Facts: This grass is a good source of forage for both wild and domestic herbivores.

NATIVE

COMMON NAME
needle-and-thread

FAMILY
Grass (*Poaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Each flower (floret) has an outer bract (lemma) that is hairy, with an elongated nerve (awn) that is 6-23 cm long, twisted, bent twice, and has short, stiff hairs (hispid). There is 1 floret per group (spikelet) that is subtended by a pair of highly modified bracts (glumes) that are 16-35 mm long. Spikelets are attached to distinct stalks (pedicels) on flowering stalks to form solitary terminal blooms on laterally branching stems in a panicle arrangement with narrow, spreading, drooping branches.

Blades: Are 0.5-4 mm wide and are flat or have inwardly rolled edges (involute).

Stems: Are stalks (culms) that are round and hollow with an outer covering (sheath) that is open, hairy or hairless, and strongly ribbed. The structure jutting from the blade and sheath junction (ligule) is 1-7 mm tall, translucent, and has a frayed edge.

Plants: Are 10-90 cm tall, are a bunchgrass, and bloom from May to August.

SITE AND HABITAT

Found across the INL Site in sandy soils, alluvial fans, dry hills, and foothills.

NOT TO BE MISTAKEN FOR

ACHY: Blades are < 1 mm wide, lemma awns are 3-6 mm long, and glumes are 6.5-9 mm long. **ACOC:** Blades are involute, < 2 mm wide, and the ligules are 0.2-1.5 mm tall. **SPCR:** Sheaths are fluffy.

AKA: *Stipa comata*

Fun Facts: The seeds are tipped with a sharp barbed point that stabs into the soil crust. As the tissues respond to changes in moisture content (hygroscopic), the drying awns mechanically self-drill into the soil by twisting.

NATIVE

LECI (NP) *Leymus cinereus*

COMMON NAME
Great Basin wildrye

FAMILY
Grass (*Poaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Each flower (floret) has an outer bract (lemma) that is 7-12 mm long and either has an acute point or an elongated nerve (awn) that is up to 3 mm long. There are 3-7 florets per group (spikelet) that are subtended by a pair of highly modified bracts (glumes) that are stiff and lack an awn. There are 2-7 spikelets per attachment point (node) that are attached directly to the flowering stalk in a spike arrangement.

Blades: Are 8-20 mm wide, are flat or have inwardly rolled edges (involute), are firm, and narrow toward the tip.

Stems: Are stalks (culms) that are round and hollow with an outer covering (sheath) that is open. The structure jutting from the blade and sheath junction (ligule) is 2-8 mm tall and is acutely tipped.

Plants: Are 50-110 cm tall, are a bunchgrass, and bloom from May to August.

SITE AND HABITAT

Occurs across the INL Site, often in low-lying playas, roadsides, and dry slopes.

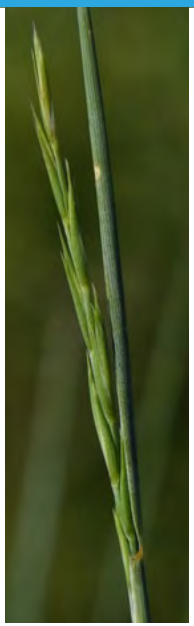
NOT TO BE MISTAKEN FOR

***Elymus canadensis*:** Lemma awns are 15-40 mm long and glume awns are 10-25 mm long. **PHAR:** Spikelets are attached to a distinct stalk (pedicel) on the flowering stalk to form solitary terminal blooms on laterally branching stems (panicle).

AKA: *Elymus cinerus*

Fun Facts: Wildryes have multiple spikelets per node while wheatgrasses have one. Native Americans used the roots as medicine, the stems and leaves for bedding, and even crafted arrow shafts from stems.

NATIVE


COMMON NAME
western wheatgrass

FAMILY
Grass (*Poaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Each flower (floret) has an outer bract (lemma) that is hairy to hairless, is 3-5 nerved, with an elongated central nerve (awn) that is 0.5-5 mm long. There are 2-12 florets per group (spikelet) that are subtended by a pair of highly modified bracts (glumes) that are 0.15-0.8 mm wide and narrowly taper to a thin, awn-like tip. The spikelets are attached directly to the flowering stalk in a spike arrangement and overlap each other.

Blades: Are 1-4.5 mm wide, are flat or have inwardly rolled edges (involute), are stiff, rough, and prominently veined.

Stems: Creep underground (rhizomatous) and send up stalks (culms) that are round and hollow with an outer covering (sheath) that is open, rarely hairy, or may have a white waxy coating (glaucous). The structure jutting from the blade and sheath junction (ligule) is 0.5 mm tall and transparent. The sheath top has a pair of claws (auricles) that are 0.2-1 mm long and often purple.

Plants: Are 20-60 cm tall, are rhizomatous, and bloom from late May to August.

SITE AND HABITAT

Found near the Big Lost River and riparian areas on fine to medium textured soils.

NOT TO BE MISTAKEN FOR

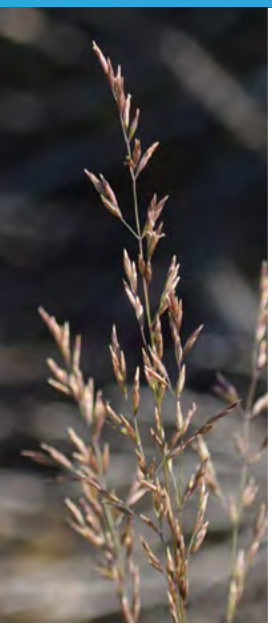
ELLA: Glumes are 0.4-1.6 mm wide and quickly taper to an acute, blunt point.
ELTR: Plants are bunchgrasses and attachment points (nodes) have 2 spikelets.

AKA: *Agropyron smithii, Elymus smithii*

Fun Facts: This is Wyoming's state grass.

NATIVE

POSE (NP) *Poa secunda*



COMMON NAME
Sandberg bluegrass

FAMILY
Grass (*Poaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Each flower (floret) has an outer bract (lemma) that is purple, 5-nerved, has an acute tip, has a hairless base, has very small crisp hairs, and lacks an elongated nerve (awn). There are 2-5 florets per group (spikelet) that are lance-shaped and are attached to distinct stalks (pedicels) along the flowering stalk to form solitary terminal blooms on laterally branching stems in a panicle arrangement with narrowly constricted to open spreading branches.

Blades: Are narrow, have a double mid-rib, and are flat, folded, or have curled edges.

Stems: Are stalks (culms) that are round and hollow with an outer covering (sheath) that is partially closed and is smooth to rough. The structure jutting from the blade and sheath junction (ligule) is 2.5-6 mm tall.

Plants: Are 15-75 cm tall, are a bunchgrass, and bloom from March to July.

SITE AND HABITAT

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

NOT TO BE MISTAKEN FOR

POFE: Lemmas have soft, silky hairs (sericeous). **POPR:** Stems creep underground (rhizomatous), and lemmas have webbed bases. **SPCR:** Sheaths are fluffy.

AKA: *Poa nevadensis, P. scabrella, P. sandbergii*

Fun Facts: Formerly independent species have been grouped into Poa secunda based on recent genetic analysis. However, best management practices often encourage the selection of locally adapted or site-specific plant materials because these are the most likely to reestablish and achieve long-term restoration success.

NATIVE




COMMON NAME
bluebunch wheatgrass

FAMILY
Grass (*Poaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Each flower (floret) has an outer bract (lemma) that often has an elongated nerve (awn) that is up to 25 mm long and is bent at 90°, but they can be awnless. There are 4-9 florets per group (spikelet) that are subtended by a pair of highly modified bracts (glumes) which are 6-13 mm long. The spikelets are attached directly to the stem in a spike arrangement, are uncrowded, and are 8-22 mm long.

Blades: Are 2-6 mm wide, have upper surfaces with soft hairs and under surfaces with coarse hairs, have inwardly rolled edges (involute), and dry into spirals.

Stems: Are stalks (culms) that are round and hollow with an outer covering (sheath) that is open. The structure jutting from the blade and sheath junction (ligule) is 0.1-0.5 mm tall. The sheath top has a pair of claws (auricles) that are 1 mm long, clasping, and reddish-purple.

Plants: Are 30-80 cm tall, are a bunchgrass, and bloom from May to August.

SITE AND HABITAT

Found near the buttes and foothills on medium to coarse-textured soils.

NOT TO BE MISTAKEN FOR

ACTH: Lemma awns are twice bent and 32-56 mm long, ligules are 1.5-8 mm tall, and auricles are absent. **SPCR:** Sheaths are fluffy.

AKA: *Agropyron spicatum, Elymus spicatus*

Fun Facts: Bluebunch wheatgrass is an important year-round forage for many different animals but, heavy grazing can damage individuals.

NATIVE

Indian ricegrass | ***Achnatherum hymenoides***

Shrubs

Black-tail jackrabbit | *Lepus californicus*

What is a Shrub?

Shrubs are long-lived perennial plants with woody above-ground structures that persist from one growing season to the next.

The size and shape of shrubs are useful characteristics for initial identification. Many of the most common shrub species across the INL Site range in size from knee- to waist-height. Dwarf shrubs may be locally abundant in certain areas and are on average shorter than knee height. A few shrubs species may reach shoulder height or taller, but these species are generally restricted to habitats with deeper soils or increased water availability.

The branching pattern of stems and the amount of above-ground biomass that is woody are also good characteristics for identifying shrubs. Subshrubs mostly branch from the base and stems are herbaceous above the base; subshrubs are often also characterized as dwarf shrubs.

A final characteristic that is useful for initial identification is whether the species has both male and female flowers on the same individual. Monoecious species have flowers of both sexes on the same plant while dioecious species have male and female flowers on separate plants. With respect to identifying characteristics, species that are monoecious will appear homogeneous across the stand and species that are dioecious form stands where some individuals bear showier flowers than others.

Field Notes

COMMON NAME
low sagebrush

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). Each capitulum is 2-5 mm wide by 4-7 mm tall, bell shaped, and has 5-10 disc flowers. The leaves that are appressed to the capitulum (phyllaries) are 3-5 mm long, covered in short, soft, matted hairs (tomentose). Capitula are attached to stalks (pedicels) that are spike-like in their attachment to the flowering stalk (spiciform). Flowering stalks are 2-10 cm tall by 0.5-2 cm wide, are leafless, and usually fall off overwinter; they are grey.

Leaves: From the perennial (persistent) bundles (fascicles), they have 3 shallowly toothed lobes and are 2-5 mm wide, are hairy (pubescent), and are grey-green.

Stems: Are irregularly branched from a decentralized base (deliquescent).

Plants: Are a dwarf shrub, are 10-30 cm tall, have a rounded crown, are rarely capable of resprouting after fire, and bloom from June to August.

SITE AND HABITAT

Found on the INL Site in playas on fine-textured clay soils to rocky foothills.

NOT TO BE MISTAKEN FOR

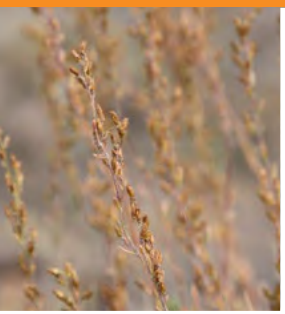
ARNO: Leaves are green with glandular hair, plants retain flower stalks, have flat crowns, and stems spread from a centralized base (divericate). **ARTR:** Plants retain flower stalks, stems are divaricate, and plants are 20-50 cm tall.

AKA: None

Fun Facts: This species is the most palatable of the woody Artemisia species. Foragers include greater sage-grouse, pronghorn, pygmy rabbit, elk, deer, and sheep.

NATIVE

ARNO (NP) *Artemisia nova*



COMMON NAME
black sagebrush

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). Each capitulum is 1-2 mm wide by 2-4 mm tall, are shaped like a skinny bouquet (turbinate), and have 2-6 disc flowers. The leaves that are appressed to the capitulum (phyllaries) are often in two rows, and the innermost are resinous and hairless (glabrous). Capitula are attached to stalks (pedicels) on laterally branching stems that are panicle-like in their attachment to the flowering stalk (paniculate). Flowering stalks are 4-10 cm tall by 0.5-3 cm wide, are leafy, and are retained over winter; they are reddish-brown.

Leaves: From the perennial (persistent) bundles (fascicles), they have 3 shallow lobed teeth, and have a green surface that is sparsely covered in glandular hairs.

Stems: Originate from a centralized base (divaricate).

Plants: Are a dwarf shrub, are 10-30 cm tall, have a flat-topped crown, do not sprout after fire, and bloom July to November.

SITE AND HABITAT

Occurs near the buttes and foothills on shallow, rocky soils.

NOT TO BE MISTAKEN FOR

ARAR: Plants have rounded crowns, stems are irregularly branched from a decentralized base (deliquescent), and flowering stalks fall off over winter.

Fun Facts: Many Artemisia species can be used as natural dyes, creating beautiful yellow hues, and to extract aromatic camphor scented oils. Harvest only what you need, choose resilient plants, use sterile methods, and educate the public to be a responsible steward of ethnobotanical knowledge to maintain ecological balance.

NATIVE

COMMON NAME
threetip sagebrush

FAMILY
Sunflower (*Asteraceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are densely clustered in a flower head (capitulum). Only flowers with 5-lobed tubes (disc) occur in the capitulum (discoid). Each capitulum is 2 mm wide by 2-3 tall, is shaped like a skinny bouquet (turbinate) or an orb (globose), and has 4-8 disc flowers. The leaves that are appressed to the capitulum (phyllaries) are lance shaped and have frosted, grey hairs (hoary). Capitula are attached to stalks (pedicels) that are spike-like in their attachment to the flowering stalk (spiciform). Flowering stalks are 6-15 cm tall by 4-5 cm wide, are leafy, and are retained over winter.

Leaves: From the perennial (persistent) bundles (fascicles), they have 3 deeply lobed teeth that are < 2 mm wide and are 1.5-4 cm long by 0.5-1.5 cm wide.

Stems: Are irregularly branched from a decentralized base (deliquescent).

Plants: Are 20-250 cm tall, have rounded crowns, can resprout after fire, and bloom July to November.

SITE AND HABITAT

Commonly found around the buttes and foothills in a wide range of soil textures.

NOT TO BE MISTAKEN FOR

ARFR2: Leaves have 6-12 deep lobes. **ARAR:** Flowering stalks are 2-10 cm tall by 0.5-2 cm wide and plants are 10-30 cm tall. **SPAR:** Disc flowers are yellow, plants are 5-20 cm tall, and stems originate from a centralized base (divaricate).

AKA: *Artemisia trifida*

Fun Facts: Artemisia tripartita has been used medicinally to treat colds, headaches, and clean lesions.

NATIVE

COMMON NAME
big sagebrush

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). Each capitulum is 1.5-2 mm wide and tall, oval to bell-shaped, and has 4-8 disc flowers. The leaves that are appressed to the capitulum (phyllaries) are covered in short, soft, matted hairs (tomentose) and are lance shaped. Capitula are attached to stalks (pedicels) on laterally branching stems that are panicle-like in their attachment to the flowering stalk (paniculate) and are narrow. Flowering stalks are 2-8 cm tall by 2-6 cm wide, are leafy, and are retained over winter; they are tan and are distinctly visible against the shorter, densely leafy stems.

Leaves: From the perennial (persistent) bundles (fascicles), they are flat, tapered, and wedge-shaped (cuniform) that are broadly truncated; they have 3 shallow to deeply lobed teeth.

Stems: Originate from a centralized base (divaricate).

Plants: Are 20-50 cm tall; have an uneven, round, twiggy crown; do not sprout after fire; and bloom from July to November.

SITE AND HABITAT

Common across the INL Site on shallow, fine-textured soils.

NOT TO BE MISTAKEN FOR

ARTRT: Flowering stalks are shorter than leafy stems, are 8-15 cm tall, and plants are 100-250 cm tall. **ARAR:** Plants are 10-30 cm tall, stems are irregularly branched from decentralized trunks (deliquescent), and flowering stalks fall off over winter.

Fun Facts: This species is the foundation for the shrublands in the Intermountain West.

NATIVE

COMMON NAME
basin big sagebrush

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). Each capitulum is 1.5-2.5 mm wide and tall, oval shaped, and has 4-6 disc flowers. The leaves that are appressed to the capitulum (phyllaries) are covered in short, soft, matted hairs (tomentose). Capitula are attached to stalks (pedicels) on laterally branching stems that are panicle-like in their attachment to the flowering stalk (paniculate) and are broadly pyramidal. Flowering stalks are 8-15 cm tall by 5-6 cm wide, are leafy, and are retained over winter; they are a beige-fawn and are often hidden by the taller, densely leafy stems.

Leaves: From the perennial (persistent) bundles (fascicles), they are flat, tappered, and wedge-shaped (cuniform) and are narrowly elongated; they have 3 shallow to deeply lobed teeth.

Stems: Originate from a centralized base (divaricate).

Plants: Are 100-250 cm tall, have rounded crowns, do not sprout after fire, and bloom July to November.

SITE AND HABITAT

Occurs across the INL Site on deep, coarse soils, especially in sand.

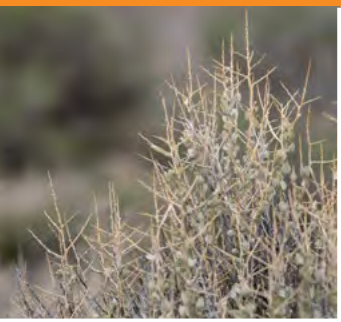
NOT TO BE MISTAKEN FOR

ARTR: Flowering stalks are taller than leafy stems, are 2-8 cm tall, and plants are 20-50 cm tall. **ARCA2, ARLU:** Plants are forbs and leaves lack lobes.

Fun Facts: Hybridization is common across the Artemisia species complex; among the 18 woody species, there are 27 recognized subspecies, highlighting the importance of taxonomic studies in understanding the evolutionary impacts of speciation.

NATIVE

ATCO (NP) *Atriplex confertifolia*



COMMON NAME
shadscale saltbush

FAMILY
Goosefoot (*Chenopodiaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are tightly packed into bundles (glomerule) that attach directly to the flowering stalk (spike). Glomerules develop from the angle formed at the leaf and stem (axillary). Female flowers (pistillate) and male flowers (staminate) are often on separate plants (dioecious). Pistillate flowers lack true petals and sepals but instead are enclosed by 2 small leaves (bracteoles) that increase in size as they age (accrescent), are fused basally, are 5-11 mm long by 4.5-10 mm wide, and papery. Staminate flowers have yellow anthers.

Leaves: Are oval shaped, pointed near the tip, alternate, attached on distinct stalks (petioles), and taste salty. They are light grey-green.

Stems: Originate from a centralized base (divaricate), are highly branched, are yellow-brown, and are prominently spined.

Plants: Are 15-50 cm tall, often dioecious, bloom April to July, and fruits mature well into September.

SITE AND HABITAT

Occurs across the INL Site on medium to fine-textured, alkaline soils.

NOT TO BE MISTAKEN FOR

ATCA: Leaves are attached directly to the stem (sessile) and its pistillate flowers have bracteoles that are 13-25 mm wide. **GRSP:** Bracteoles are 6-12 mm wide.

AKA: *Atriplex jonesii, Atriplex subconferta, Atriplex collina*

Fun Facts: This species has been used to treat epilepsy and sore muscles.

NATIVE

COMMON NAME
sickle saltbush

FAMILY
Goosefoot (*Chenopodiaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are tightly packed into bundles (glomerule) that attach directly to the flowering stalk (spike). Glomerules develop from the angle formed at the leaf and stem (axillary). Female flowers (pistillate) and male flowers (staminate) are often on separate plants (dioecious). Pistillate flowers lack true petals and sepals but instead are enclosed by 2 small leaves (bracteoles) that increase in size as they age (accrescent), are fused all the way to the tip, and are 2.5-7.5 mm long by 1-7 mm wide. Staminate flowers have tan to brown anthers.

Leaves: Are alternate, oblong to linear shaped, often in clusters, and either attached directly to the stem (sessile) or on distinct stalks (petioles).

Stems: Are erect, spineless, and irregularly branch from a decentralized base (deliquescent) that is woody.

Plants: Are 10-40 cm tall, often dioecious, and bloom April through July.

SITE AND HABITAT

Found in the center and on the north end of the INL Site in medium to fine-textured soils, especially in playas.

NOT TO BE MISTAKEN FOR

ATCA: Pistillate flowers have 4 winged bracteoles that are 13-25 mm wide, and plants are 80-200 cm tall.

AKA: *Atriplex gardneri var. falcata, A. nuttallii ssp. falcata, A. n. var. falcata*

Fun Facts: The dried fruit from saltbush can be ground down and made into pinole flour.

NATIVE

CELE (NP) *Cercocarpus ledifolius*

COMMON NAME
curl-leaf mountain mahogany

FAMILY
Rose (*Roseaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Occur in clusters that develop from the angle formed at the leaf and stem (axillary) and are not showy.

Fruits: Are a hard sealed hull with one seed (achene) and the pistil that extends a single long, curly plume.

Leaves: Are alternate, 10-30 mm long, and lance shaped. The upper leaf surface is darker green and resinous compared to the lower leaf surface that has firmly attached interwoven woolly hairs (lanate) that are white.

Branches: Are stiff and robust. The young stems are red, aging to an ashy-grey.

Plants: Are large shrubs to small trees, evergreen, 2-8 m tall, and bloom from May to June.

SITE AND HABITAT

Found in the Lemhi Mountain Range foothills where they extend onto the INL Site often in calcareous soils.

NOT TO BE MISTAKEN FOR

N/A

AKA: *None*

Fun Facts: This species was first collected in 1834 by botanist Thomas Nuttall (1786-1859) near Soda Springs, Idaho. Its dense wood is used ethnobotanically for digging tools and as a natural dye to achieve rich terracotta hues. This species is also favored in horticultural nativescaing for its tolerance to extreme temperatures and drought, and for adding visual focal points to designs.

NATIVE

COMMON NAME
fern bush

FAMILY
Rose (*Roseaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are small and showy with 5 white petals, 5 green sepals, and numerous stamens. The flowers are attached to distinct stalks (pedicels) and form solitary terminal blooms on laterally branching stems in a panicle arrangement.

Leaves: Are alternate, are covered in sticky resinous glands, and have edges lobed at two levels (bipinnatifid).

Stems: Are flexible, are reddish brown, shed paper-thin flakes as they age, are irregularly branched from a decentralized base (deliquescent) and are highly branched.

Plants: Are 1-3 m tall, are deciduous, and bloom from June to August.

SITE AND HABITAT
Found in the southern portion of INL Site in deep basalt crevasses and in open rocky areas.

NOT TO BE MISTAKEN FOR
N/A

AKA: *None*

Fun Facts: This species is a favorite choice for horticultural nativescaing because it produces many flowers, is easy to prune, and tolerates extreme temperatures and drought. It is the only species in this genus (monotypic) and is more closely related to the tribe Sorbariaeae despite its morphological resemblance to its namesake genus Chamaebatia, which is endemic to California and is in the Dryadeae tribe.

NATIVE

COMMON NAME
green rabbitbrush

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). Capitulum have 3-5 yellow disc flowers. Capitula grow from different points on the flower stalk and form loose clusters of terminal blossoms in a corymb arrangement.

Leaves: Are alternately arranged along the stem, are linear, hairless (glabrous), green, and twist like a corkscrew.

Stems: Are glabrous to slightly soft hairs (pubescent) and are irregularly branched from a decentralized base (deliquescent). Old stems have grey to brown shredding bark near their base and brittle greyish-white bark near the stem tips, while only new stems are green.

Plants: Are 20-120 cm tall and bloom from July through September.

SITE AND HABITAT

Extremely abundant across the INL Site across a wide variety of soils.

NOT TO BE MISTAKEN FOR

ERNA: Stems are flexible, pale green, covered in softly matted hairs, and leaves are flat and straight. **GUSA:** Leaves are flat and straight.

AKA: *Crinitaria viscidiflora, Ericameria viscidiflora*

Fun Facts: This species is an important food source for many pollinators in late summer and early fall. Native Americans have used this species to treat colds, coughs, and skin conditions. The leaves and flowers have been used to make natural dyes.

NATIVE

COMMON NAME
shrubby buckwheat

FAMILY
Buckwheat (*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 sepals and petals are indistinguishable (tepals) and are white to pale pink.

Leaves: Are alternately arranged, occur individually or in bundles (fascicles), are narrowly lance shaped, and have firmly attached interwoven woolly hairs (lanate).

Stems: Are dark reddish-brown, are highly forked, and originate from a centralized base (divaricate) that is woody.

Plants: Are 10-50 cm tall and bloom as early as June but continue well into October.

SITE AND HABITAT
Found across the INL Site, but especially in medium to coarse-textured soils.

NOT TO BE MISTAKEN FOR
N/A

AKA: *Eriogonum microtheca*

Fun Facts: This species is an important food source for many pollinators in late summer and early fall. This species is a favorite choice for horticultural use in nativescaping because it adds visual focal structures, bright fall colors, and habitats to drought tolerant landscape designs.

NATIVE

ERNA (NP) *Ericameria nauseosa*

COMMON NAME
rubber rabbitbrush

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). Capitulum have 4-6 yellow disc flowers. The highly branched elongating flowering stalks grow new distal flower clusters in a cyme arrangement.

Leaves: Are alternately arranged along the stem, have smooth edges, are linear, flat, light green, and are covered in dense short, soft hairs (tomentose).

Stems: Are flexible, pale green, tomentose, highly forked, are photosynthetic, and are irregularly branched from a decentralized base (deliquescent).

Plants: Are 10-200 cm tall and bloom August through October.

SITE AND HABITAT

Common across the INL Site; especially in deep, gravelly soils.

NOT TO BE MISTAKEN FOR

CHVI: Leaves are twisted, deep green, and hairless, and stems have brittle greyish-white bark near the stem tips.

AKA: *Chrysothamnus nauseosus*

Fun Facts: This species is an important food source for many pollinators in fall. It has also been an important plant for commercial industry. It was first studied to be a commercial rubber substitute during WW2 and is still used today as a small commercial rubber source.

NATIVE

COMMON NAME
dwarf goldenbush

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 lobe (ray) in each capitulum (radiate). Capitula have 4-10 yellow disc flowers and up to 10 bright yellow ray flowers.

Leaves: Are alternately arranged on the stem, 1-1.5 cm long, bright green, linear, attach directly to the stems (sessile), and produce a resinous substance that has a lemon-like odor.

Stems: Are leafy, are equal in length to flowering stalks, densely spreading from a centralized base (divaricate) that is woody.

Plants: Are 5-20 cm tall, have a neat cushion-like growth shape, and bloom from July to September.

SITE AND HABITAT

Found throughout the INL Site on basalt outcroppings and cliff walls.

NOT TO BE MISTAKEN FOR

STAC: Stems are leafless and the basal leaves are stiff, ridged, and can be sharply tipped.
GUSA: Stems are irregularly branched from a decentralized base (deliquescent), leaves are 2-4 cm long, and plants have an unkempt wiry growth shape.

AKA: *Haplopappus nanus*

Fun Facts: This species is an important food source for many pollinators in the fall.

NATIVE

COMMON NAME
spiny hopsage

FAMILY
Goosefoot (*Chenopodiaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are tightly packed into bundles (glomerule) that attach directly to the flowering stalk (spike) from the angle formed at the leaf and stem (axillary). Flowers can have both female and male reproductive organs (perfect) or only female organs (pistillate) or male organs (staminate). Individuals plants can have perfect flowers (triecious) or have a single sex (dioecious). Pistillate flowers lack true petals and sepals but instead are enclosed by 2 small leaves (bracteoles) that increase in size as they age (accrescent), are fully fused, are 7.5-14 mm long by 6-12 mm wide, are flat, and are tinged citrine, white, pink to red. Staminate flowers have 4-5 sepals that are lobed and 4-5 stamens.

Leaves: Are alternate, lance shaped, but slightly wider near the tip than at the base, are green with whitish tips, have tapered bases attached directly to the stem (sessile), and do not taste salty.

Stems: Develop spiny tips and new growth has grey, flaky scales.

Plants: Are 50-150 cm tall, often dioecious or triecious, and bloom April to June.

SITE AND HABITAT

Occurs sporadically across the INL Site in a range of soil textures.

NOT TO BE MISTAKEN FOR

ATCO: Leaves are attached to distinct stalks (petioles) and are 15-50 cm tall.

AKA: *Atriplex spinosa*

Fun Facts: It is the only species in this genus (monotypic) and the namesake for this genus is the namesake for the renowned American botanist and Harvard professor, Asa Gray (1810-1888).

NATIVE

COMMON NAME
broom snakeweed

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 a long tongue-like lobe (ray) in each capitulum (radiate). Capitula have 3-8 yellow disc flowers and 3-8 bright yellow ray flowers. Capitula grow on different points of the flower stalk and form loose clusters of terminal blossoms (corymb). The flowering stalks are much longer than stems and are retained over winter, giving plants an unkempt wiry appearance.

Leaves: Are alternately arranged along the stem, 2-4 cm long, linear; they are dotted with glands that give them a rough texture.

Stems: Have leaves and are irregularly branched from a decentralized base (deliquescent) that is woody.

Plants: Are 10-40 cm tall and bloom from July through October.

SITE AND HABITAT

Found throughout the INL Site on and near basalt outcroppings.

NOT TO BE MISTAKEN FOR

CHVI: Leaves are twisted. **ERNA:** Capitula only have disc flowers (discoid) and leaves have soft hairs. **ERNA2:** Stems densely spread from a centralized base (divaricate), leaves are 1-1.5 cm long, and plants have neat cushion-like shape.

AKA: None

Fun Facts: This is an important food source for some wildlife species like mule deer and it can comprise up to 28% of a pronghorn's diet.

NATIVE

KRLA (NP) *Krascheninnikovia lanata*

COMMON NAME
winterfat

FAMILY
Goosefoot (*Chenopodiaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are tightly packed into bundles (glomerule) that attach directly to the flowering stalk (spike) from the angle formed at the leaf and stem (axillary). Female flowers (pistillate) and male flowers (staminate) are often on separate plants (dioecious). Pistillate flowers lack true petals and sepals but instead are enclosed by 2 small leaves (bracteoles) that increase in size as they age (accrescent), are densely covered in stiff, coarse hairs (hirsute), and are 4-7.5 mm long. Staminate flowers have 4 sepals that are lobed, 4 pink anther sacs, and fall shortly after flowering. All flowers are small and discreet.

Leaves: Have curled under edges (revolute) and are linear, entire, alternate, single to bundled (fascicles), and are covered in dense, short soft hairs (tomentose).

Stems: Are herbaceous, upright, tomentose, irregularly branched from a decentralized base (deliquescent) that is generally concealed by the leaves.

Plants: Are 15-50 cm, often dioecious, and bloom March through July.

SITE AND HABITAT

Scattered across the INL Site, occasionally dominate in fine-textured alkaline soils.

NOT TO BE MISTAKEN FOR

TECA: Leaves have flat edges and stems are woody. **ARTR, ARNO, ARAR, ARTP, ARTRT:** Leaves have 3 lobed teeth and plants are woody.

AKA: *Eurotia lanata, Ceratoides lanata*

Fun Facts: This species is a great forage resource for many wildlife species.

NATIVE

COMMON NAME
granite prickly phlox

FAMILY
Phlox (*Polemoniaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Have a tube of 5 fused, flared, and flattened petals (salverform) that are cream to pale salmon. 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.

Leaves: Are alternate to almost opposite (subopposite) and attach directly to the stem (sessile). Leaves are deeply cleft into 3-9 spine tipped segments, making them appear as if they occur in clusters along the stem. Dead leaves often remain on the lower branches.

Stems: Are woody and irregularly branched from a decentralized base (deliquescent).

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

SITE AND HABITAT

Scattered across the INL Site on medium to coarse-textured, or occasionally rocky soils; often a component of the understory of sagebrush plant communities.

NOT TO BE MISTAKEN FOR

PHLO, PHHO, PHAC: Plants are forbs with entire, opposite leaves on herbaceous stems.
LIWA: Leaves are opposite, flowers have 6 petals, and this plant is rare.

AKA: *Leptodactylon pungens*

Fun Facts: Studies have indicated that this species is most often visited by butterfly species in the Pieridae and Lycaenidae families.

NATIVE

COMMON NAME
prickly pear

FAMILY
Cactus (*Cactaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are attached directly to the stems (sessile); flowers appear to occur in clusters but are solitary individuals that are tightly compacted along the stem. Flowers have numerous showy petals that range from bright yellow to magenta and generally fade to a salmon-scarlet.

Leaves: Are barbed spines subtended by minuscule, rust-colored spines (areole).

Stems: Are pads that are flattened and succulent.

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

SITE AND HABITAT

Found in a wide range of soil textures, especially sand. The yellow variety is common across the INL Site, while the magenta variant primarily occurs in the southern portion.

NOT TO BE MISTAKEN FOR

N/A

AKA: None

Fun Facts: The individual blooms are open for a 12 or 24 hour period. Plants can reproduce from seed, but favor vegetative clonal reproduction. Pads are edible, taste somewhat like cucumber, and are used to thicken soups. Spines are usually roasted off during preparation. Large spines can be removed from skin by hand, but smaller spines are more effectively removed by applying adhesive tape or thin layer of liquid glue that dries to the skin and to a gauze covering which is then pulled off.

NATIVE

COMMON NAME
bud sage

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). Capitula are 2-3.5 mm tall and have 5-13 showy yellow disc flowers. Capitula are attached to stalks (pedicels) that are spike-like in their attachment to the flowering stalk (spiciform).

Leaves: Are bright green, are alternately arranged along the flowering stalks, and the upper surfaces are covered in long, soft shaggy hairs (villous). The leaf edge has two levels of 3-5 lobes clefted from a central point (bipalmatifid).

Stems: Are densely spreading from a centralized base (divaricate) and the old lateral stems can become thorny.

Plants: Are 5-30 cm tall, copiously villous, have a rounded crown, and bloom from April to June.

SITE AND HABITAT
Found scattered across the INL Site in a range of well-drained soils.

NOT TO BE MISTAKEN FOR
N/A

AKA: *Artemisia spinescens*

Fun Facts: This species was once included within the Artemisia genus complex but differeing views of generic circumscriptions have separated species with thorny stems and realatively large capitula. Interestingly, the phenology has been the distinguishing anotomical characteristic for P. desetorum.

NATIVE

COMMON NAME
greasewood

FAMILY
Goosefoot (*Chenopodiaceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are tightly packed into bundles (glomerule) that attach directly to the flowering stalk (spike) from the angle formed at the leaf and stem (axillary). Unisexual female flowers (pistillate) and male flowers (staminate) are often on the same plant (monoecious). Pistillate flowers lack true petals, but the fused sepal develops an orbital winged-disk resembling a tutu. Staminate flowers lack petals and instead have a tiny leaf (bract) that is shaped like a shield (peltate); bracts surround flowers in a pattern that resembles scaly cones.

Leaves: Are green, alternate, succulent, linear, and attach directly to the stem (sessile).

Stems: Are white and turn grey to brown as they age, have numerous spines, are irregularly branched from a decentralized base (deliquescent), and are highly forked.

Plants: Are 100-250 cm tall, often monoecious, and bloom from May through July; fruit continue to mature into October.

SITE AND HABITAT
Found scattered across the INL Site in fine to medium textured soils.

NOT TO BE MISTAKEN FOR
N/A

AKA: None

Fun Facts: While it has been included in the Chenopodiaceae, recent treatments have placed this genus it into its own family, Sarcobataceae.

NATIVE

COMMON NAME
spineless horsebrush

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). Capitulum have 4-5 bright yellow disc flowers. The highly branched elongating flowering stalks grow new distal flower clusters (cyme).

Leaves: Are alternately arranged along the stem, have flat edges, are lance shaped, and are covered in dense, white, soft, matted hairs (tomentose).

Stems: Are woody, are covered in tomentose hairs, lack spines, are irregularly branched from a decentralized base (deliquescent), and are highly branched. The stems are retained over winter.

Plants: Are 40-100 cm tall and bloom May through July.

SITE AND HABITAT

Scattered across the INL Site on medium to coarse-textured soils and generally associated with sagebrush shrubland plant communities.

NOT TO BE MISTAKEN FOR

KRLA: Has herbaceous stems and leaf are roll under (involute). **ARTR, ARNO, ARAR, ARTP, ARTRT, ARLU:** Have leaves with 3 lobes.

AKA: None

Fun Facts: This species has many ethnobotanical uses that range from treating various ailments to making yellow dyes.

NATIVE

TESP (NP) *Tetradymia spinosa*



COMMON NAME
catclaw-horsebrush

FAMILY
Sunflower (*Asteraceae*)

IDENTIFYING CHARACTERISTICS

Flowers: Are densely clustered in a flower head (capitulum). Only flowers with 5-lobed tubes (disc) are found in the capitula (discoid). Capitula occur in pairs or singly (solitary), have 5-9 bright yellow disc flowers, and attach to stems from the angle formed at the leaf (axillary).

Leaves: Are alternately arranged along the stem, bright green, and linear.

Stems: Have numerous green downward-curved spines, are irregularly branched from a decentralized base (deliquescent), and immature stems are white because they are covered in dense, soft matted hairs (tomentose).

Plants: Are 40-100 cm tall and bloom April through June.

SITE AND HABITAT
Scattered in patches throughout the INL Site in a range of soil textures.

NOT TO BE MISTAKEN FOR
N/A

AKA: None

Fun Facts: It is now thought to be first collected by the Scottish fur trapper John McLeod in 1839 near Fort Boise of Idaho after he was befriended by William Fraser Tolmie (1812- 1886) during their involvement with the Hudson Bay Company.

NATIVE

Trees

Russian olive | ***Elaeagnus angustifolia***

Great Horned Owl | ***Bubo virginianus***

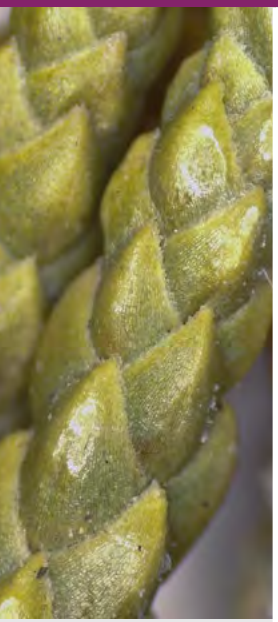
What is a Tree?

Trees are perennial plants that grow specialized woody trunk structures to support robust limbs and branches.

Areas where trees are abundant are very localized across the INL Site. Woodlands and patchy tree stands tend to occur in areas with increased water availability, such East and Middle Butte, the foothills at the base of the Little Lost and Lemhi Mountain ranges, and along the channel of the ephemeral Big Lost River. Occasionally, tree stands may also be found associated with crevices on basalt outcroppings.

Trees are often identified using crown shape; bark texture; and the shape and organization leaves, flowers, fruits, and cones. Two of the most common tree species on the INL Site include Utah juniper (*Juniperous osteosperma*) and narrowleaf cottonwood (*Populous angustifolia*). Utah juniper is an evergreen conifer with needle-like leaves and seed-bearing cones that forms sporadic stands in large basalt outcroppings and more extensive woodlands on slopes at higher elevations. Narrowleaf cottonwood is a deciduous broadleaf species that occurs as individuals or small, sparse stands along ephemeral river channels.

Field Notes



COMMON NAME
Utah juniper

FAMILY
Cypress (*Cupressaceae*)

IDENTIFYING CHARACTERISTICS

Cones: Have blue to black fleshy scales with a waxy (glaucous) coating and often bear 1 seed but occasionally have 2 seeds. The female cones are reddish brown after removing the glaucous coating.

Leaves: Are small, scale-like, occur in whorls of 3's, and leaf margins have teeth-like hairs under 20x magnification.

Plants: Are evergreen and reach 2–4 m tall with a rounded, spreading appearance. The trunk may be single-stemmed or composed of multiple stems.

SITE AND HABITAT

Form woodlands around the buttes and foothills; occur in scattered stands on and around basalt outcroppings.

NOT TO BE MISTAKEN FOR

JUSC: Leaves are in opposite pairs, leaf margins are entire under 20x magnification, and plants have a conical or pyramidal appearance. **JUOC:** Female cones have dark bluish-brown fleshy scale, and plants are up to 20 m tall.

AKA: *Juniperus californica* ssp. *osteosperma*

Fun Facts: This species is remarkably long-lived, with one specimen documented to be 1,275 years old. Additionally, the cones are technically megastrobili and are the primary flavor in gin.

NATIVE

POAN (NP) *Populus angustifolia*

COMMON NAME
narrowleaf cottonwood

FAMILY
Willow (*Salicaceae*)

IDENTIFYING CHARACTERISTICS

Fruits: Are tightly compacted and dangle from stems (catkin). The edge of tiny leaves at the base of each catkin (bracts) are hairless.

Leaves: Are lance shaped, 4-8 cm long by 0.8-2.5 cm wide, hairless, and connected to the stem with round stalks (petiole) about 0.2-0.8 cm long. The upper side is often a deeper green than the underside.

Bark: Is light brown and forms shallow fissures.

Plants: Can grow up to 20 m tall and their trunks can reach 70 cm in diameter. Plants are deciduous and bloom from April to May to set cotton-like seeds from June through July.

SITE AND HABITAT

Scattered along ephemeral riverine channels.

NOT TO BE MISTAKEN FOR

POBA: Leaf petioles are 1-5 cm long and are round to oval in cross section; its leaves are wider at 2.5-6 cm. **ELAN:** Leaves are covered in thick white star shaped hairs (stellate), flowers are yellow, fruits are 10-15 mm in diameter, and round.

AKA: *Populus fortissima, P. balsamifera* var. *angustifolia, P. canadensis* var. *angustifolia*

Fun Facts: Narrowleaf cottonwood groves require spring flooding to trigger seedling germination. Altered stream flows and reduced summer water tables can adversely affect seedling establishment.

NATIVE

white sand verbena | *Abronia mellifera*

Glossary & Indices

Glossary

A

ACHENE: A fruit with a sealed, hard hull containing one seed inside.

ANTHER: The sac on the stamen that contains the pollen.

ANTHESIS: The period of time a flower is in bloom.

APOPETALOUS: Petals are connected to the receptacle and not fused with one another.

ARACHNOID: A tangled mess of cobwebby hairs.

AREOLE: The small, miniscule spines that form a cushion where buds or new stems originate on cactus.

ARISTULATE: The tip of a structure that bears a small, sharp bristle.

AURICULATE: Ear-like lobes at or near the base of a structure.

AWN: An elongated nerve on the bracts or scales of a graminoid floret.

AXIL: The angle formed at the topside of a leaf and stem.

AXILLARY: A growth that arises from the angle of the stem and leaf.

B

BANNER: The upper most petal of pea flowers which are typically showy and stand out like a flag.

BARB: A structure, typically a hair, that has a recurved hook.

BIPALMATIFID: The shape of a leaf where the edges have two levels of 3-5 lobes clefted from a central point but that do not fully extend down to the main midvein.

BIPINNATE: The shape of a leaf where the main leaf axis has two degrees of divisions, and the leaf edge has been clearly divided to the primary and secondary main leaf axis and bears small leaflets.

BIPINNATIFID: The shape of a leaf where the main leaf axis has two degrees of division, and the leaf edges are lobed and do not fully extend down to the primary or secondary leaf axis.

BITERNATE: A leaf divided down to the midvein to bear three terminal leaflets which are again divided into thirds to form two degrees of terminal leaflets.

BRACT: The tiny leaves below the four whorls of flower organs on the flowering stalk.

C

CALYX: An inclusive term for all sepals.

CAPITULA [CAPITULUM |SINGULAR|]: A flower arrangement where a compact cluster of flowers attached directly to the flowering stalk.

CAPSULES: A dry, fruit container that splits open seed cavities.

CARYOPSIS: A hard dry, single seeded fruit that has the walls of the ovary connected directly to the seed.

CAUDEX: The short and persistent stem base that is usually but not always woody of an herbaceous stem.

CAULINE: Leaves attached to the stem.

CILIATE: The edge of a structure fringed with hair-like structures.

CLEISTOGAMOUS: A plant that self-fertilizes before it blooms.

COMA: A seed with a stalk that has a tuft of hairs.

COMPOUND LEAVES: A leaf divided into distinct sections of leaflets.

COMPOUND FLOWERS: A flowering stalk with multiple orders of branching.

COMPOUND RACEME: A flower arrangement where flowers attach to distinct stalks that grow from multiple orders of branches from the main flowering stalk.

COMPRESSED: A structure is laterally flattened.

CONVOLUTE: The structure is rolled up to resemble a scroll.

CORNICULATE: A structure with one or more small horns.

CORYMB: A flower arrangement where the flowering stalks start from different points but end at the same point to form terminal flower cluster that is flat-topped.

CULMS: The specialized stem shoot of a grass, rush, or a sedge.

CUPULIFORM: A structure shaped like a drinking cup.

CYMES: A flower arrangement where a highly branched flower stalk grows new distal flower clusters at the shoot elongates and forms either a flat-topped or round topped terminal flower cluster.

D

DIOECIOUS: Plants have either male or female flowers, but never both sexes present on the same individual.

DISC FLOWER: A tubular flower with five similar-sized petal lobes attached to the capitulum of a sunflower.

DISCOID: A sunflower head that only has disc flowers.

DIVISION: An edge of a surface that has been cleft down to the main axis.

DIVARICATE: The stems spread from the main trunk or base.

E

ELLIPTIC: A shape that is largest at its middle and its ends are equal in width

ENTIRE LEAF: A leaf that has smooth edges and is not divided.

F

FARINOSE: A surface covered in small, white particles.

FASCICLE: A cluster of structures like leaves from a leaf axil.

FLOCCOSE: A surface covered in delicate wooly hairs that are easily removed.

FLORET: A flower of a grass.

FRUIT: The organ that contains seeds.

FUNNELFORM: Flowers are a tube of fused petals shaped like a funnel.

G

GLABRESCENT: As a surfaces ages, it loses hairs and becomes hairless.

GLABROUS: A surface does not have hair.

GLANDULAR: A surface has organs that produce secretions.

GLAUCOUS: A surface covered with a white, waxy coating easily rubbed off.

GLUME: The small stiff leaf in a spikelet of a grass flower.

GLOMERULE: A flower arrangement where a cluster of flowers that are tightly compacted bundles.

H

HELICOID CYME: A flower arrangement where flowers grow along elongating spiral shoots where the terminal flowers are the youngest.

HIRSUTE: Hairs that are stiff, coarse, and firm.

HISPID: Hairs that are glass-like, stiff, and firm enough to break skin.

HOLOTYPE: The individual specimen taxonomist use to characterize the species concept.

HOARY: A surface densely covered in hairs that make it appear grey.

I

IMPARIPINNATE: A compound leaf bearing a terminal leaflet. See odd-pinnate.

INTERNODES: The sections of stem in between attached leaves.

INVOLUCRE: A cluster of flowers in a whorl of leaves.

INVOLUTE: The edges roll inward towards the center of the structure.

K

KEEL: A structure that juts outward to resemble the keel of a boat.

L

LACTIFEROUS: A plant part that can produce a milky sap.

LANATE: A surface covered in dense, interwoven indelible hairs.

LANCEOLATE: A raindrop shape with a tapered tip.

LEAFLET: One section of a compound leaf.

LEGUME: A fruit with one cavity that splits open as it dries.

LEMMA: The outermost modified leaf in a grass flower head above the glumes.

LIGULATE: A sunflower head that only has ray flowers.

LIGULE: The tongue-like structure at the intersection of the blade and the culm of a grass stem.

LOBE: An edge that is split into sub-divisions to become rounded.

M

MARGIN: The edge of a surface that forms a distinct boundary.

MIDRIB: The primary support structure of a leaf.

MONADELPHOUS: Stamens fused together by their filaments into a single bundle.

MONOECIOUS: An individual plant with separate female and male flowers.

MONOTYPIC: The only species within its genus.

N

NERVE: A linear vein that is slender and rib-like.

NODE: The point where a leaf attaches to the stem.

NUTLET: A small nut that has multiple lobes of the ovary.

O

ODD-PINNATE: A compound leaf bearing a terminal leaflet. See imparipinnate.

OBOVATE: A shape with a narrow base and enlarged apex that resembles an egg.

P

PALMATE: The shape of a leaf where the edge of the leaf has been divided into distinct sections down a central location on the main midvein.

PALMATIFID: The shape of a leaf where the edge of the leaf has five distinct lobes that do not fully extend down to the main midvein.

PANICLE: A flower arrangement where flowers attach to distinct stalks that grow from branching lateral stems, each bearing a solitary terminal flower.

PAPPUS: A fruit that bears a crown of modified sepals that appear hairy, scaly, or bristly in the sunflower family.

PAPILIONACEOUS: A flower that resembles a butterfly composed of an upper banner petal, a lower projecting keel petal, and two lateral wing petals.

PEDICEL: A distinct stalk connecting a single flower to the stem.

PEDUNCLE: A flower stalk connecting a cluster of flowers to the stem.

PEDUNCULATE: A branched flower stalk where the terminal branches connect cluster of flowers to the stem.

PETAL: A highly modified, often conspicuous, leaf on the inner series of the floral structure.

PETIOLE: The stalk attaching a leaf to the primary stem.

PHYLLARIES: The small whorl of leaves attached to the flower head. The use of this term is specific to species in the Asteraceae family.

PILOSE: A surface densely covered in short hairs.

PINNATE: The shape of a leaf where the primary leaf axis is undivided, but the leaf edges are clearly divided down to the primary leaf axis and bears small leaflets.

PINNATIFID: The shape of a leaf where the primary leaf axis is undivided, and the leaf edges are distinctly lobed and do not fully extend down to the primary leaf axis.

PISTIL: The female seed-bearing reproductive organs of a flower consisting of the stigma, style, and ovary.

PSEUDOSCAPE: A flowering stalk that has concealed leaves attached to it and so it appears to be leafless.

PUBESCENCE: A surface covered in any type of hair, but hairs are often fine and stiff.

PUBESCENT: A surface covered in soft hairs.

R

RACEME: A flower arrangement where flowers attach to distinct stalks that grow from the main flowering stalk.

RACHIS: The main axis of a structure that has been divided into smaller structures in a similar pattern.

RADIATE: A sunflower head that bears both ray and disc flowers.

RAY FLOWER: A flower that grows an extended tongue-like lobe from a tube of fused petals.

RHIZOMATOUS: A stem that grows underground and appears like a creeping root system.

S

SAGITTATE: An arrowhead shaped leaf.

SALVERFORM: Flowers are a tube of fused, abruptly flared and flattened petals shaped like a trumpet.

SCABROUS: A surface covered in short, stiff, bristly hairs or projections.

SCAPE: A leafless flowering stalk.

SCHIZOCARP: A fruit that splits open as it matures to release multiple single seeded subsections.

SEPAL: The outermost whorl of the reproductive flower organs that typically protect the developing interior organs.

SERICEOUS: Hairs that appear or feel silky-soft.

SESSILE: A structure attached directly, lacks a stalk.

SILICLE: A fruit pod in the shape of a disc.

SILIQUE: A fruit pod in the shape of an elongated tube which splits open along a central, thin partition.

SOLITARY FLOWER: A single flower occurs at the terminal tip of a flowering stalk.

SOLITARY FLOWER HEAD: Flowers are contained within a single flower head at the terminal tip of a flowering stalk.

SPIKE: Flowers are alternate and attached directly to the stalk.

SPIKELET: The collection of florets from a grass or sedge that are above the glumes.

SPINY-WINGED: The spiny, wing-like internodal connective tissue along a stem.

STAMEN: The male pollen-bearing reproductive organ of a flower consisting of the filament and anther sacs.

STELLATE: Hairs that are radiating outward from a central point which makes them appear like twinkling stars.

STIPULE: An appendage at the base of a leaf or petiole.

STRIGOSE: A surface covered in stiff and appressed hairs.

SYMPODIAL: A plant that lacks a primary flowering stalk.

T

TEPAL: Designation for when petals and sepals are indistinguishable.

TETRADYNAMOUS: A distinct stamen pattern when four stamens are longer than two shorter stamens.

THROAT: The opening of flared, fused petals.

THYRSE: A compound flower arrangement where the primary flowering stalk has flowers attached to highly branched, elongating, distinct stalks that have secondary flowering stalks bearing new distal flower clusters and form a compact cylinder.

TOMENTOSE: A surface covered in short, soft, matted hairs.

TRIFOLIATE: A leaf divided into three small leaflets.

TRIPINNATE: The shape of a leaf where the main leaf axis has three levels of divisions, and the leaf edge has been clearly divided to the primary, secondary, and tertiary leaf axis and bears small leaflets.

TRIPINNATIFID: The shape of a leaf where the main leaf axis has three levels of divisions, and the tertiary leaf edges are lobed and do not fully extend down to the tertiary leaf axis and bear pinnules.

TRUNCATED: A structure that appears to be cut off or simply ends abruptly.

TUBE: A structure that is a hollow cylinder, typically used to describe the portion of trumpet shaped flowers.

U

UMBEL: A flower arrangement where flower stalks are fused at single point to form a spreading cluster.

V

VILLOUS: A surface covered in long, soft shaggy hairs.

VERTICILLASTER: A flower arrangement where clusters of flowers grow on distinct stalks from the point of the leaf attachment to the stem, forming two opposing groups that create a false whorl.

INL Code Index

Family Index

Plantaginaceae

Poaceae

Polemoniacae

Polygonaceae

Ranunculaceae

Roseaceae

Salicaceae

Santalaceae

Sarcobataceae

Scrophulariaceae

Common Name Index

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turpentine wavewing | ***Pteryxia terebinthina***

Swallowtail | ***Papilio species***

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