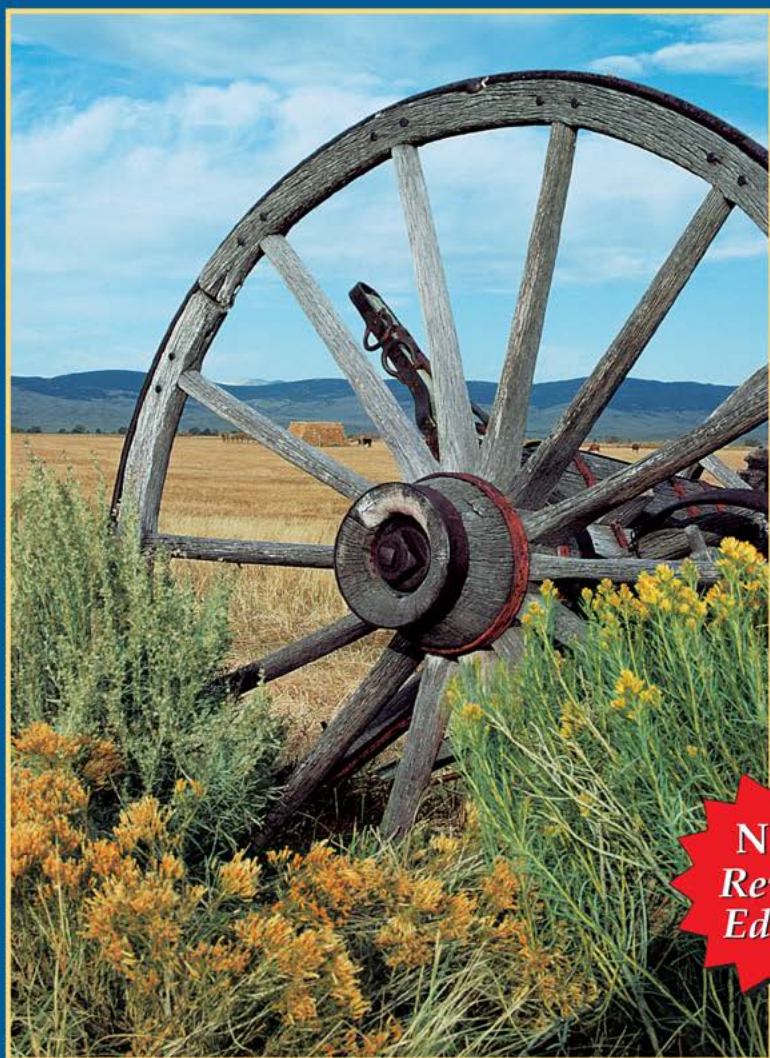


# Weeds of the West



**NEW!**  
*Revised  
Edition*



*The authors (left to right): Robert Parker, Richard D. Lee, Burrell E. Nelson, David W. Cudney, Larry C. Burrill, Tom D. Whitson, Steven A. Dewey*

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# Introduction

Members of the Western Society of Weed Science determined that an identification book showing and describing important weed species in the western United States was needed.

Weeds discussed in this book were selected by weed scientists who are members of the Western Society of Weed Science. Weeds were selected because of their abundance, ability to reproduce, compete, and spread rapidly, as well as those that are toxic to livestock or humans. An attempt was made to include a representative cross-section of the common agronomic, rangeland, horticultural, and non-cropland weeds of the western United States and Canada. If plants are not included in the publication, contact your county extension agent or university herbarium for proper identification.

There are many ways to define a weed. The authors think the following accurately describes the criteria used for including plants in this book:

*A plant that interferes with management objectives  
for a given area of land at a given point in time.*

– J.M. Torell

The term “weed” does not always indicate that a plant is totally undesirable, or that it cannot be beneficial under certain situations. According to the above definition, many desirable species might sometimes be considered weedy; for example, a species providing valuable wildlife forage or wildlife habitat on one tract of land may be considered undesirable on land managed to maximize grass production for livestock or wildlife. It all depends on the management objectives. Some plants poisonous to humans, livestock or wildlife are considered desirable ornamental plants. Other species that are almost always considered undesirable may actually provide limited benefit as they rapidly invade disturbed sites and thereby reduce soil erosion.

Some weeds in this publication are not present in all western states and provinces; however, their potential for invasion and establishment warrants concern. New weeds in your area should always be identified to determine what properties they might have that could cause future management problems. In certain instances an eradication effort should be planned to eliminate certain weed problems or prevent them from spreading. Those weeds designated as noxious in your state should be reported to the extension agent or weed control supervisor in your county unless they are already widely distributed.

To promote standardization of common plant names, this publication used the Weed Science Society of America’s list of common and scientific names where available. This book has been arranged alphabetically by scientific family names with species within families arranged alphabetically by scientific name.

Because of frequently changing weed control recommendations, none have been given in this publication. For current control practices, contact your county extension agent or weed and pest supervisor.

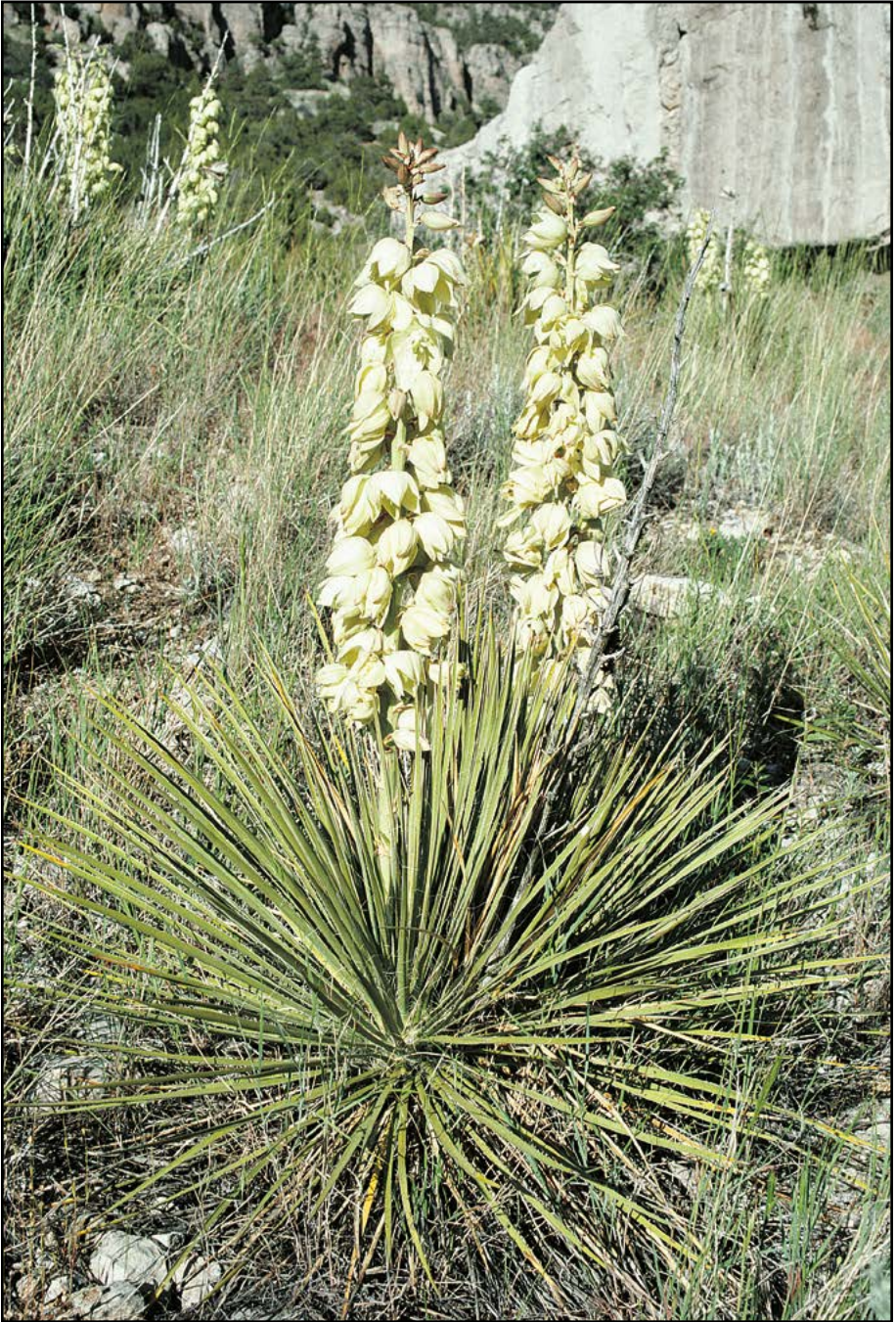


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**Great Plains yucca**  
*Yucca glauca* Nutt.



## Great Plains yucca

Agavaceae  
(Agave family)

Great Plains yucca is a perennial, 1 to 4 feet tall, and bush-like. It reproduces by seed and underground stems. Leaves are pale green 1 to 3 feet long, 1/4 to 1/2 inch wide, very stiff and sharply pointed, originating from the crown at ground level; flowers are large, greenish to creamy white, borne as a terminal cluster on a central stalk 1 to 4 feet tall; numerous seeds, black, flat, winged, 1/2 inch wide, are produced in an oblong fruit 2 to 3 inches long and about 1 inch thick.

Yucca is found throughout the West, mainly on dry sandy plains and prairies. Young plants and flowers are sometimes eaten by livestock. American Indians used the leaves to make baskets and the roots to produce soap. Pollination of yucca depends on a small insect, the yucca moth. The relationship between moth and plant is unique in that neither can complete its life cycle without the other.



*Young plant's leaves end in a sharp spine and have thread-like fibers at their base.*



*Large white or green flowers are borne along a central stalk that can be four feet tall.*

## Khakiweed

*Alternanthera repens* (L.) Link, non J.F. Gmel.



**Khakiweed**  
Amaranthaceae  
(Pigweed family)

Khakiweed is a perennial with prostrate stems and thick, woody, vertical roots. Stems are branched, rooting at the nodes, prostrate, forming mats 1/2 to 2 feet in diameter. The plant is covered with jointed distinct hairs, especially at the stem nodes and on the back of the sepals. Leaves are opposite, oval, glassy, 1/2 to 1 1/2 inches long, may appear hairless, but usually have scattered hairs, particularly on the stalk, and those leaves of the same pair are often unequal in size. Flowers, small and whitish, are found in dense clusters around the stem at the leaf axils. Seeds are light reddish-brown and shiny.

This plant, a native of tropical America, has become a serious pest in warm season turf in the Southwest.

Non-standard name: creeping chaffweed.



*Flowers are white, small and form in dense clusters in the leaf axils.*



*The prostrate growing habit and ability to root at the nodes coupled with a thick cuticular surface contributes to the persistent nature of this plant.*

**Tumble pigweed**  
*Amaranthus albus* L.



## Tumble pigweed

Amaranthaceae  
(Pigweed family)

An annual species, somewhat prostrate to spherical and erect, much branched, 6 to 36 inches tall. Leaves usually have narrower blades and shorter stalks than those of prostrate pigweed. Stems are usually light green rather than red, more erect, more intricately branched, and the general aspect of mature plants is more spiny than prostrate pigweed. Flowers are borne in small spiny clusters at the base of leaves, not in long terminal spikes as in the case of redroot pigweed. Seeds are black, shiny, lens-shaped and 0.7 to 0.8 millimeters wide.

Tumble pigweed is found primarily in cultivated or disturbed sites. This plant is a prolific seed producer and the seed can be spread great distances when mature wind-blown plants break off and tumble along the ground.



*Cotyledons are smooth and lanceolate. True leaves have recessed venation.*



*Seeds of all pigweeds appear about the size of a pin head and are shiny black.*



**Prostrate pigweed**

*Amaranthus blitoides* S. Wats.



**Prostrate pigweed**  
Amaranthaceae  
(Pigweed family)

An annual with generally prostrate stems radiating in all directions from a central taproot. Main stems are usually 12 to 18 inches long with shorter secondary branches. All stems are somewhat fleshy and pliable, nearly smooth, and usually red to purple. Leaves are approximately 1/2 inch wide and oval, with the tip broader than the base. Flowers are in small congested clusters in the leaf axils. Long terminal flower spikes are absent. Seeds are shiny, black, lens-shaped and approximately twice the width of tumble pigweed seeds.

Prostrate pigweed was possibly introduced from tropical America, adapting well to our area. It occurs mostly in disturbed or cultivated soils, and is often associated with tumble pigweed or other *Amaranthus* species. It is a common garden weed.



*Seedlings have lanceolate cotyledons while the first leaves are oval.*



*Leaves of prostrate pigweed are oval shaped with red or purple stems. Flowers are borne in leaf axils.*

**Palmer amaranth**

*Amaranthus palmeri* S. Wats.



**Palmer amaranth**  
Amaranthaceae  
(Pigweed Family)

Palmer amaranth is an annual, 1 to 6 feet tall. There is one thick central stem with many lateral branches. Leaves are alternate, hairless, lance-shaped or egg-shaped, 2 to 8 inches long, 1/2 to 2 1/2 inches broad, and have prominent whitish veins on the underside. Male and female flowers are found on separate plants in long leafless branching spikes at the top of the plant. The slender central inflorescence, 1/2 to 1 1/2 feet tall, is much longer than any of the lateral inflorescences.

This is one of the more aggressive pigweeds and has become common in the Southwestern region. It hybridizes with other pigweeds including redroot pigweed (*A. retroflexus* L.).

Non-standard name: carelessweed.



Young plants have dark green lanceolate leaves.



Detailed photo of reddish stems and dark green leaves of mature plants.

**Redroot pigweed**

*Amaranthus retroflexus* L.



## Redroot pigweed

Amaranthaceae  
(Pigweed family)

A coarse erect annual, usually 2 to 6 feet tall. Lower stems are often red or red-striped, with color continuing down the taproot. Leaves have long petioles and prominent veins. They are somewhat broad and lance-shaped, and often become reddish. Individual flowers are small, green and tightly arranged in large, branched, spike-like, terminal clusters. Smaller axillary flower clusters may also occur. Flower clusters are full of stiff, spine-like scales, making this pigweed additionally undesirable in hay. Seeds are small, black and shiny.

Redroot pigweed is widely distributed throughout the West, commonly found in cultivated lands, gardens, and waste areas. Germination occurs anytime during the growing season when soil moisture is sufficient. A related species, Powell amaranth (*A. powellii* S. Wats.), can be distinguished by examining the bracts, Powell amaranth having longer, narrower, pointed bracts than redroot pigweed.



Seedlings of redroot pigweed have linear cotyledons, leaves have distinct veins. Leaves are connected to stems with long petioles.



The long spiny bracts of Powell amaranth flowers distinguish this plant from redroot pigweed.

**Western poison-ivy**

*Toxicodendron rydbergii* (Small ex Rydb.) Greene



**Western poison-ivy**  
Anacardiaceae  
(Cashew family)

Western poison-ivy is a perennial sub-shrub often less than 3 feet tall, to a distinct shrub up to 9 feet tall. Stems are simple or sparsely branched, arising from much branched subterranean stolons. Aerial roots are absent, plants never climb. Leaves alternate, compound, usually with 3 leaflets that often turn bright red in the fall. Flowers grow in axillary panicles or racemes, with five sepals united at the base and five greenish petals. Three-parted stigmas turn black with age. Fruit is globose, cream to yellow, 1/4 inch broad, wrinkled at maturity and glabrous.

The more common species west of the Cascade Mountain Range in Washington, Oregon and California is Pacific poison-oak (*T. diversilabum* (Torr. & Gray) Greene). Poison oak is often viny, and its lateral leaflets lack stalks. These species occupy many habitats, including floodplains, river terraces, rights-of-way and other disturbed sites. The poison in these species is a milky oil found in the phloem. If the oil or its dried residue come in contact with the skin, many people develop a severe skin rash within a few hours.



*Pacific poison-oak has leaves that are serrated along the margins, and are often purplish. Both poison oak and poison ivy usually have three leaflets per leaf, an important identification characteristic of this perennial.*



*Fruit with ridges resembling tiny green pumpkins are formed in late summer.*



**Bur chervil**

*Anthriscus scandicina* (Weber ex Wiggers) Mansf.



**Bur chervil**  
Apiaceae  
(Parsley family)

An annual up to 3 feet tall with stems that are somewhat branched. The leaves are alternate, finely divided with a lacy appearance and generally hairy when young. Flowers are white, small and borne in few-flowered compound umbels. Fruit is about 1/8 inch long, covered by minute hooked bristles and splits into 2 one-seeded units at maturity. Plants are aromatic.

Bur chervil was introduced from Europe where it was cultivated as a garden herb. It is found along stream banks and in moist, open places, sometimes in abundance near old buildings and in farmyards. Bur chervil is also known as bur beakchervil and *Anthriscus scandicina* (Weber) Mansf.

Non-standard name: bur beakchervil.



Seedlings have linear cotyledons and deeply lobed true leaves.



Small greenish flowers borne in clusters in the leaf axils and longitudinally ridged fruits.

**Common caraway**  
*Carum carvi* L.



**Common caraway**  
Apiaceae  
(Parsley family)

This biennial, or occasional perennial, has one or more shoots emerging from a single taproot the second year. Shoots are slender, erect, branching, furrowed, normally hollow and 1 to 3 feet tall. Leaves are alternate on shoots and oblong or oval in outline; upper leaves are long and slender with a lacy appearance; they are finely divided into linear or thread-like segments. Lower leaves appear similar, but are coarser. Flowers are small, white or pinkish, and occur in terminal or lateral, loose umbels, supported by 1/8 to 1/2 inch long pedicels. Seeds are narrow, oblong, more or less curved, 1/8 inch or more long, and brown with five conspicuous tan, linear ribs.

Common caraway was introduced into the United States as a cultivated species, but escaped to become a weed in mountain meadows, hayfields, and along irrigation ditches and roadways in these areas. The first year's growth is a leafy rosette.

Non-standard name: Wild caraway



*Leaves are finely divided the first year having a lacy appearance.*



*The inflorescence contains many white flowers appearing to be flat across the top. Seeds are narrow and oblong.*

**Western waterhemlock**  
*Cicuta douglasii* (DC.) Coult. & Rose



## Western waterhemlock

Apiaceae  
(Parsley family)

This perennial is native to the intermountain region and is highly poisonous. Erect stems are 3 to 7 feet tall, usually swollen at the base. Leaves alternate, one per node, petioled, pinnately divided. Leaf veins which terminate at the bottom of leaf serrations distinguish this species from others in the family. Flowers are white in compound stemmed umbels mostly flat on top. Each flower is two-seeded. Seeds are somewhat kidney-shaped with corky ridges and tea-colored. A horizontally-divided, enlarged taproot is its most easily recognized feature. Juice in the taproot is extremely poisonous to animals and humans.

Western waterhemlock is a wetland plant especially common in pastures or untilled areas. It occurs on streams and irrigation canals. It begins growth in spring, flowers in late spring to early summer. Waterhemlock, considered one of the most poisonous plants in North America, is often mistaken for water-parsnip or other edible members of this family. Several human and animal deaths have occurred because of this species.



*Toothed, pinnately-divided alternate leaves with veins terminating in the bottom of serrations are useful in identifying this extremely poisonous species.*



*When roots are split, horizontal chambers are found. This area is the most poisonous part of the plant. Extreme care should be taken when examining this species.*

**Poison hemlock**  
*Conium maculatum* L.



## Poison hemlock

Apiaceae  
(Parsley family)

Poison hemlock is a biennial native to Europe that grows 6 to 8 feet tall with occasional plants growing to 10 feet tall. Stems are erect, stout and purple-spotted with distinct ridges and extensively branched. Leaves are shiny green, finely pinnately divided three or four times and leaflets are segmented and 1/8 to 1/4 inch long. Lower leaves on long stalks clasp the stem; upper leaves on short stalks. Foliage has strong musty odor. Flowers are borne in many umbrella-shaped clusters, each supported by a stalk. Flowers are white with sepals lacking. Paired seeds, 1/8 inch long, are light brown, ribbed and concave.

It occurs on borders of pastures and cropland, gradually invading perennial crops (i.e. alfalfa). Poison hemlock tolerates poorly-drained soils and frequents stream and ditch banks. All plant parts are poisonous including the large white taproot. Humans have been poisoned by mistaking the plant for parsley.



*Leaves on mature plants, as well as seedling plants (shown here), are fern-like in appearance because they are divided three and sometimes four times.*



*Stems of poison hemlock are covered with purple spots at all growth stages.*



**Wild carrot**

*Daucus carota* L.



**Wild carrot**  
Apiaceae  
(Parsley family)

This biennial herb stands 2 to 4 feet tall. It exists as a rosette with a deep taproot the first year. Stems are erect, hollow, stiff-haired and sometimes branched. Leaves are alternate, stalked near the stem base, sessile above. Twice-pinnately compound leaves have narrow segments to 5 inches long. Leaf margins and veins have short hairs. Strong carrot odor. White flowers grow in flat-topped umbels 3 to 6 inches across with five petals. Seeds 1/8 inch long, grayish-brown, one side flattened and rounded side distinctly ribbed. Mature seeds have barbed prickles.

Wild carrot is a pernicious weed of older pastures and meadows, strongly discouraged by cultivation. Wild carrot has a strong carrot odor, and begins growth in early spring, frequents dry areas and rocky soils.

Non-standard name: Queen Anne's Lace.



*Wild carrot seedlings have long linear cotyledons. Leaves are three lobed with each lobe finely divided.*



*Umbels, which often close as fruits develop, are subtended by numerous prominent branching finger-like bracts.*

**Cow parsnip**

*Heracleum maximum* Bartr.



**Cow parsnip**  
Apiaceae  
(Parsley family)

This native perennial reproduces by seed, forming a low-growing rosette, with a large, fleshy taproot its first year. Flower stalks grow 2 to 8 feet tall. Stems are somewhat hairy and grooved. Leaves are hairy to nearly glabrous, with serrated edges, not carrot-like. Cream colored flowers with five petals in umbels at the top of short stalks. Flower clusters are mostly flattened with outside flower stalks curving inward with maturity. Seed is flattened on one side, rounded on the other, with distinct ridges.

Cow parsnip occurs mostly in disturbed areas and along roadways. It now inhabits many sites in mountainous regions.



*Leaves, commonly 6 to 10 inches across, are deeply divided, not pinnately compound like other parsley family plants.*



*Cow parsnip has a flat-topped umbel inflorescence.*

**Spreading dogbane**

*Apocynum androsaemifolium* L.



## Spreading dogbane

Apocynaceae  
(Dogbane family)

Rhizomatous perennial with much-branched stems and 3/4 to 2+ feet in height. The plants exude a milky juice. Leaves are 1 to 2 3/4 inches in length, dark green above, paler beneath. Leaves are very short-stalked, spreading or drooping, with leaf blades that are rounded at the base and narrower at the apex. Flowers are pink, bell-shaped, about 1/3 to 1 inch long and borne in loose clusters at the ends of the branches and in axils of upper leaves. The fruits, two from each flower, are 2 to 5+ inches long and narrow, each fruit splits longitudinally at maturity. Seeds are numerous, small, each tipped by a tuft of white or tan hairs.

Spreading dogbane is a native species found throughout much of Canada and the U.S., with the exception of the southeastern states. It grows along roadsides, in waste areas and in orchards, and the milky juice can be toxic to livestock.

Non-standard names: flytrap dogbane and bitterroot.



*Short-stalked, opposite leaves.*



*Loose open cluster of flowers with petal tips turned back.*

**Hemp dogbane**

*Apocynum cannabinum* L.



**Hemp dogbane**  
Apocynaceae  
(Dogbane family)

A perennial herb reproducing by seed or rhizomes. Plants may grow up to 6 feet tall. Leaves are opposite or whorled, noticeably petioled, and somewhat ascending on opposite-branching stems. Stems often are red and exude a white milky sap when cut. Flowers are small, white to greenish-white, and arranged in clusters. Fruiting structures are long pendulous follicles, 5 inches or more in length, which usually turn reddish brown at maturity.

Hemp dogbane is a widespread native species that can become weedy along roadsides, waste areas, and on non-cultivated agricultural lands. It has been called Indian hemp, because of its use as a source of high-quality fiber by pre-historic tribes. Several other similar-appearing dogbane species are common to the West, including spreading dogbane (*A. androsaemifolium* L.) and prairie dogbane (*A. sibiricum* Jacq.). Flower size is a key characteristic in distinguishing between the various dogbanes. Hybridization between species is reportedly frequent in this genus. Hemp dogbane, spreading dogbane, and possibly others of this genus are poisonous to livestock.

Non-standard name: common dogbane.



*Most leaves are erect or ascending, and have a short but distinct petiole. Stems are often dark red.*



*Mature hanging follicles are 5 inches long or more, and contain slender tufted seeds.*



**Mexican whorled milkweed**  
*Asclepias fascicularis* Dcne.



**Mexican whorled milkweed**  
Asclepiadaceae  
(Milkweed family)

Mexican whorled milkweed is an erect perennial 2 to 4 feet tall spreading by creeping underground roots. Stems are smooth to minutely pubescent. Leaves are linear to lance-shaped, 1 1/2 to 4 1/2 inches long, 1/4 to 1/2 inch wide, short-petioled, found in whorls of 3 to 6, and are commonly folded along the midrib. Flowers, borne in umbels found in the upper leaf axils, are white to greenish or purple-tinted. Fruit is a follicle which is erect, 2 to 4 1/2 inches long, smooth, narrow, and ends in a point. Seeds are about 1/4 inch long and have a tuft of hair attached.

This plant, which may be confused with the western and eastern whorled milkweed (*A. subverticillata* (Gray) Vail and *A. verticillata* L., respectively), except for the wider leaves, is a native of western America, perhaps first known in Mexico. This plant, like several other milkweeds tested, is toxic to livestock.

Non-standard name: narrowleaf milkweed.



*The flowering structure is a long, narrow follicle, which contains small brown seeds.*



*Showy flowers are borne in umbels at the top of the plant.*

**Swamp milkweed**  
*Asclepias incarnata* L.



**Swamp milkweed**  
Asclepiadaceae  
(Milkweed family)

A herbaceous perennial, spreading from short rootstocks or seed. Plants are erect, growing 3 to 4 feet tall. Leaves are opposite, mostly smooth, lance-shaped, and have a short petiole. Flowers are pink to rose-purple, arranged in clusters at the tops of plants. Tufted seeds are produced in clusters of smooth erect pods (follicles). Individual pods are 2 1/2 to 3 1/2 inches long. Plants exude a thin milky juice when injured.

Swamp milkweed is poisonous and is suspected of causing livestock deaths. It is found in low wet meadows, marshes, and along streams and ditchbanks.



*Seeds are produced in slender erect pods.*



*Pink flowers form in terminal clusters.*

**Labriform milkweed**

*Asclepias labriformis* M. E. Jones



**Labriform milkweed**  
Asclepiadaceae  
(Milkweed family)

A herbaceous perennial with milky juice, spreading by seed and from roots. Plants are erect, with mostly non-branching stems, 10 to 24 inches tall. Smooth pale green leaves are 2 to 6 inches long and 1/4 to 1 inch wide. Basal leaves are opposite; while upper leaves are alternate. Pale yellowish green flowers are arranged in umbrella-like clusters. Fruits are hanging egg-shaped to long, narrow follicles, 1 1/2 to 3 inches long and 1/2 to 1 1/4 inches wide. Seeds are flat, each bearing a tuft of long silky hairs.

Labriform milkweed is a native species considered to be the most poisonous of all western milkweeds. As little as one ounce of green leaf material from this species can kill an adult sheep. It is found primarily in mixed desert shrub communities on sandy sites in southeastern Utah, northern Arizona, and western Colorado.

Non-standard name: Jones milkweed.



*Close-up of pale yellowish-green labriform milkweed flowers.*



*Fruits are egg-shaped follicles with seeds containing a papus.*

**Showy milkweed**  
*Asclepias speciosa* Torr.



## Showy milkweed Asclepiadaceae (Milkweed family)

Showy milkweed is perennial, 2 to 5 feet tall, reproducing by seeds and underground rootstocks. Leaves are opposite, oval-shaped, prominently veined, 4 to 7 inches long, and covered with fine, soft hairs. The plant has a grayish-green color and grows erect. All foliage parts exude a milky latex sap when cut. Flowers are arranged in umbels at the top of the plant and are purplish-pink. Reddish-brown flat seeds are borne in 3 to 5 inch long, narrow pods. Each seed bears a tuft of hairs allowing them to be spread by wind.

Common milkweed (*A. syriaca* L.) is found on the eastern slope of the Rocky Mountains. Showy milkweed is native to North America and is common along roadsides, ditchbanks, pastures and cultivated fields. Colonies form by spreading rootstocks when the plant is not disturbed by tillage practices.



*Seed pods, 3 to 5 inches long, burst open in late summer, producing dozens of flat, reddish-brown seeds. Fibers produced within seed capsules are used commercially.*



*Common milkweed flower clusters shown here differ in shape and color when compared to showy milkweed clusters shown on opposite page insert.*



**Western whorled milkweed**  
*Asclepias subverticillata* (Gray) Vail



## Western whorled milkweed

Asclepiadaceae  
(Milkweed family)

An erect hairless perennial reproducing by seed and deep rooted horizontal roots. Stems, slender, 1 to 3 feet tall, smooth, erect, and unbranched, arise from a branched rootcrown either singly or in clumps. Leaves, narrow, up to 3/8 inch wide and 2 to 5 inches long, occur in whorls, mostly three or four per node and are nearly stalkless with secondary clusters of small leaves in at least some of the axils. Flowers are green-white, found in umbrella-like clusters at the top of the branches and in leaf axils. The erect follicles (seedpods), 2 to 4 inches long, narrow and long pointed, contain many flat brown seeds which have a tuft of silky hair at the top.

This plant, which is native in the western United States and Mexico, is very similar to eastern whorled milkweed (*A. verticillata* L.), which is more common in other regions of the U.S., and can be distinguished by floral characteristics and with very few small leaf branches in leaf axils. Both species are toxic, though not palatable, with western whorled milkweed being more toxic.

Non-standard names: horsetail milkweed, poison milkweed, whorled milkweed.



*Flowers are borne in umbrella-like structures at the top of the plant. Leaves are arranged in whorls.*



*Seeds have a white tuft of hairs making dispersal much easier.*

**Western yarrow**

*Achillea millefolium* var. *occidentalis* DC.



**Western yarrow**  
Asteraceae  
(Sunflower family)

This is an aromatic perennial with stems, 1 to 2 feet tall, with woolly hairs, arising singly or loosely clustered from a weakly spreading root system. Leaves equally distributed along the stem; blade lanceolate in outline but finely dissected into many ultimate segments, overall dimensions are 2 to 6 inches long and 1/4 to 1 inch wide. Inflorescence with many small heads in a flat-topped or dome-shaped cluster with five white or pink ray flowers, and 10 to 20 disk flowers.

This species includes a complex of several ill-defined phases and genetic races. It is widely distributed throughout the temperate northern hemisphere. Though seldom a weed problem, it is widespread, occupying many plant communities including turf, aspen, conifer, sagebrush, mountain brush, riparian, meadow and alpine to 11,000 feet. The flowering period is June to August.

Synonyms include: *Achillea lanulosa* Nutt. Non-standard name: common yarrow.



Leaves are finely divided and appear feather-like.



Flower heads are clustered having a flat-topped appearance.

**Russian knapweed**  
*Acroptilon repens* (L.) DC.



**Russian knapweed**  
Asteraceae  
(Sunflower family)

Russian knapweed is perennial, forming dense colonies by adventitious shoots from widely spreading black roots. Stems are erect, openly branched, 18 to 36 inches tall. Lower leaves are deeply lobed, 2 to 4 inches long; upper leaves entire or serrate, narrow to a sessile base. Cone-shaped flowering heads are 1/4 to 1/2 inch in diameter, solitary at the tip of leafy branchlets. Flowers are pink to lavender. Many pearly involucral bracts form with rounded or acute papery margins.

Russian knapweed is a native of Eurasia, probably introduced in North America about 1898. It is now widely established in the West. This species forms colonies in cultivated fields, orchards, pastures and roadsides. Russian knapweed plants spread by black, deep growing roots which penetrate to a depth of over 8 feet. Flowering occurs from June to September.



*Leaves of newly emerging plants are toothed and covered with fine hair, giving them a blue-green color.*



*Flowers of this perennial are pinkish-purple. Bracts have pointed papery tips.*

**Annual bursage**

*Ambrosia acanthicarpa* Hook.



**Annual bursage**  
Asteraceae  
(Sunflower family)

This branching annual, 1 to 3 feet tall, may have long to short hairs, or both. Leaves are more or less lobed, opposite below, having petioles, alternate above, the uppermost becoming sessile. Flowers on the same plant are male and female, at different locations. Male flowers in terminal inflorescences with the heads stalked and drooping. Female flowers are spiny.

This species resembles common ragweed (*A. artemisiifolia* L.), with annual bursage being more conspicuously stiff-haired, particularly on young leaves. The fruit is covered by several circles of sharp spines. It also resembles slimleaf bursage (*A. confertiflora* DC.), except slimleaf bursage is a perennial bush with creeping rootstalks. Annual bursage has fruits which are beak-tipped, granular, armed with 10 to 20 curved spines ending in a definite hook.

Abundant in both crop and noncrop areas, this native plant can be found in various soil types.



*Seedling stage show distinct hairs on the leaf surface.*



*Staminate heads are borne in a terminal inflorescence whereas the pistillate flowers, having distinct spines are borne in leaf axils.*



**Common ragweed**  
*Ambrosia artemisiifolia* L.



**Common ragweed**  
Asteraceae  
(Sunflower family)

This native annual reaches 4 feet tall. Stems and leaves are blue-green and are covered with fine hairs. Leaves are pinnately divided and are both alternate and opposite. The bottom side of the leaf has a gray appearance because of fine hairs. Flowers are found on terminal branches, which have male and female flowers in clusters with staminate flowers found above the pistillate flowers. Seeds are awl-shaped with a spiny projection on one side. Flowering occurs in late summer, with seeds maturing by October.

This annual is common throughout the West, causing hay fever. Even though it is common, it is not highly competitive in crops or rangeland. It is commonly found along ditches and in waste areas. Western ragweed (*A. psilostachya* DC.) is a perennial plant that is shorter in stature and is commonly found on rangeland and perennial cropland.



*Seedlings appear in early spring for this annual weed. Leaves are deeply lobed with rounded tips.*



*Numerous flowers appear in early fall on terminal stems. Pollen is produced at that time, causing many people to have hay fever.*

**Woollyleaf bursage**

*Ambrosia grayi* (A.Nels.) Shinnery



**Woollyleaf bursage**  
Asteraceae  
(Sunflower family)

An aggressive creeping perennial, 1 to 2 feet tall, covered with silver-gray pubescence, reproducing by seed borne in leaf axils, but principally by extensive rootstalks, forming large clonal populations. Leaves alternate, narrowed at the base to a distinct petiole, sometimes with several small lobes. Leaf blade ovate to lanceolate in outline, up to 3 inches long and 2 1/2 inches wide. Male and female flowers are found in separate locations on the plant. Male inflorescence is stalked and elongated or spike-like. Female flowers are found in clusters or singular in the axils of the upper leaves.

Woollyleaf bursage is a native plant found in the central and southern Great Plains region. In the past this plant has often been confused with skeleton-leaf bursage (*Ambrosia tomentosa* (Nutt.) A. Nels.), which has leaves that are more deeply lobed.



*Newly emerging woollyleaf bursage plants are deeply lobed.*



*As plants mature, leaves appear gray-green because of their fine dense hairs.*

**Skeletonleaf bursage**

*Ambrosia tomentosa* Nutt.



## **Skeletonleaf bursage** Asteraceae (Sunflower family)

Skeletonleaf bursage is a perennial 4 to 18 inches tall with extensive creeping rootstocks. Stems are branched and somewhat spreading; leaves 2 to 5 inches long alternate, ovate to lanceolate in outline, coarsely toothed and deeply segmented with the lower surface covered with minute white hairs. The upper surface is smooth and green. Flowers are inconspicuous and yellow. Staminate flowers are found in solitary, elongated, terminal clusters; pistillate flowers form in pairs in leaf axils below. Fruit is a light brown bur with conical spines and contains one or more achenes.

This weed is a native of the plains region. It grows in cultivated fields, pastures, prairies and waste areas. It also survives well under varied soil moisture conditions. Skeletonleaf bursage is a difficult weed to control because of its extensive horizontal root system. Flowering and seed production occur from late June to August.



*Leaves are deeply lobed with a dark green upper surface and a silvery-green lower surface which is covered with fine hairs.*



*Terminal flower clusters with inconspicuous yellow flowers appear in late summer.*

**Giant ragweed**  
*Ambrosia trifida* L.



**Giant ragweed**  
Asteraceae  
(Sunflower family)

Giant ragweed, a native annual exceeding 10 feet in height in moist locations, can mature as smaller plants in drier areas. Stems and leaves are rough, leaves are palmately divided, normally having three lobes. Leaves can also have up to five lobes or be unlobed. Leaves are opposite with long petioles attached to a single center stem. Flowers are located in terminal clusters and are male (staminate) and female (pistillate). Seeds are over 1/4 inch in length with four or five terminal spikes on each.

Giant ragweed is common in the West, often found in moist areas, near roadsides and in wasteland. A major cause of hay fever. It is not a highly competitive species in crop or rangeland.



*Cotyledons are round to oblong. True leaves are opposite and mostly three lobed.*



*Flower clusters, often over 6 inches long, appear in the fall. Pollen shed at that time causes people to have hay fever problems.*



**Mayweed chamomile**

*Anthemis cotula* L.



**Mayweed chamomile**  
Asteraceae  
(Sunflower family)

Mayweed chamomile is an annual bushy, branched plant that is ill-smelling. Plants are from 1/2 to 2 feet tall with leaves several times divided into narrow segments. Flowers 3/4 inch in diameter, usually having 12 white ray flowers, are borne at ends of branches and in leaf axils. Flowering occurs from May to October.

Corn chamomile (*Anthemis arvensis* L.) looks almost identical but is easily identified because of its lack of odor.

Mayweed is a European native which now occurs worldwide. It is of no value but common throughout the Pacific Northwest and California. It can adapt to many different growing conditions and is commonly found in waste areas, barnyards, cultivated fields and overgrazed pastures. Contact with mayweed can cause skin rashes, blistering of livestock muzzles, and irritation to mucous membranes of grazing livestock. It can impart a strong flavor to the milk of dairy animals.

Non-standard name: dog fennel.



Seedling with small ovate cotyledons. First true leaves are opposite. Subsequent leaves are alternate.



Flowers bloom from May to October and are 3/4 inch in diameter.

**Common burdock**  
*Arctium minus* Bernh.



**Common burdock**  
Asteraceae  
(Sunflower family)

Common burdock is a biennial, producing a rosette of large, cordate, thickly hairy leaves the first year and an erect, much branched, coarse stem 3 to 10 feet tall the second year. The leaves are alternate, large, broadest at the leaf base, somewhat diminished upwards, margins toothed or wavy, woolly beneath at least when young, dark green above. Flowers are purple, heads borne in leaf axils or at the end of branches, numerous, clustered, covered with many slender, hooked spines, achenes gray to brown, mottled, oblong, about 1/4 inch long, flattened and slightly curved.

Native of Europe, common burdock is now established throughout much of North America. It is commonly found growing along roadsides, ditchbanks, in pastures and waste areas. The burs can become entangled in the hair of livestock allowing seed to be distributed to new areas. Flowering and seed production occur from July to September.



*The first year common burdock produces large leaves similar in size and shape to rhubarb.*



*Purple flowers are borne in bur-like structures from mid-summer until fall. Spines hooked on the end gave rise to the idea for Velcro.*

**Absinth wormwood**  
*Artemisia absinthium* L.



## Absinth wormwood

Asteraceae  
(Sunflower family)

Absinth wormwood is a perennial forb or herb with a strong sage fragrance dying back to the ground every year. It is commonly 3 feet tall at maturity, but can grow over 5 feet. Leaves are light to olive green, 2 to 5 inches long, and divided two or three times into deeply lobed leaflets. Leaves are covered with fine silky hairs giving the plant a grayish appearance. Flower stalks appear at each upper leaf node, producing numerous flower heads, appearing from late July through August. The seed is less than 1/16 inch long, smooth, flattened, and light gray-brown.

Absinth wormwood is an escaped ornamental which was grown for its sage flavor. Young flower heads are the source of an oil used in preparation of vermouth and absinth. The oil of absinth wormwood is an active ingredient in antiseptic liniments. Absinth wormwood will taint milk of cattle.

Non-standard names: American or common wormwood, mugwort or madderwort, and wormwood sage.



*Absinth wormwood leaves are covered with fine hairs, many times divided, gray-green in color, and resemble an open hand. The strong sage odor is a definitive characteristic that helps separate this plant from the non-aromatic biennial wormwood.*



*Many small, inconspicuous yellow flowers are produced in each head and are a pollen source for allergies and asthma.*

**Biennial wormwood**  
*Artemisia biennis* Willd.



**Biennial wormwood**  
Asteraceae  
(Sunflower family)

Biennial wormwood is a nonaromatic annual or biennial growing up to 6 feet tall. Leaves are oval and often toothed, 2 to 5 inches long. Inflorescence is a series of spike-like glabrous clusters. Stems arise from a taproot and often branch from the base. Stems are often reddish and greater than 1/2 inch in diameter. Flowering occurs from September to October.

Biennial wormwood is thought to be a native of the northwest U.S. but is common in the Great Plains from Colorado northward. It is frequently found near streams, lakes or irrigation ditches.



*Flower stalk (opposite page insert).  
Small seedlings have finely divided  
leaves forming rosettes.*



*The first year following biennial  
wormwood germination, a rosette  
having slender divided leaves may  
or may not flower.*



**Common sagewort**  
*Artemisia campestris* L.



**Common sagewort**  
Asteraceae  
(Sunflower family)

Common sagewort is a biennial forming a rosette the first year then a seed head the second. Leaves are long with petioles and sometimes divided into 3 thread-like segments. Plants produce seed stalks up to 3 feet long. Upright stems are covered with leafy branches on their upper half. Flowers located on short stalks are erect, nodding when mature in August and September. Seeds mature in October.

This biennial plant is common throughout pastures and rangeland and is often found along ditches and near roads. It is not considered a highly competitive plant.



*The first year's growth of common sagewort is blue-green with leaves that are deeply lobed.*



*Flowers borne along stems mature in August and September.*

**Silver sagebrush**  
*Artemisia cana* Pursh



**Silver sagebrush**  
Asteraceae  
(Sunflower family)

Silver sagebrush is a native perennial capable of reproducing by seeds and resprouting from roots when topgrowth is destroyed. Leaves are simple, alternate and lance shaped, occasionally with 1 or 2 irregular teeth. Leaves are covered with fine hair giving them a silver color. Flowers appear in August and September within leafy panicles. Seeds have 4 or 5 ribs and are shed in October to December. Yellowish stems reach heights of over 6 feet when plants mature.

Plants are highly competitive with perennial grasses. They generally increase with cattle usage and decrease in population with sheep usage. Plants are used as browse for wildlife and sheep. Habitats include loamy and sandy soils.



*Leaves, covered with hair, are simple, alternate and lance-shaped ending in a single point.*



*Yellow flowers form in late summer along the stems of silver sagebrush.*

**Sand sagebrush**  
*Artemisia filifolia* Torr.



**Sand sagebrush**  
Asteraceae  
(Sunflower family)

Sand sagebrush, a perennial, grows to heights of 3 feet and reproduces from seed. Stems are fine in nature, woody and branched, having a gray appearance from pubescence on leaves and stems. Leaves are threadlike, 1 1/2 to 3 inches long. Fruit are borne in upper leaf axils as rounded structures. Flowers form a plume-like structure from July to October, with seeds maturing in October.

Sand sagebrush grows on sandy, well-drained soils in rangeland and pastures.



*Seedling plants of sand sagebrush have thread-like leaves.*



*Leaves of this perennial woody species are thread-like, growing from 1 1/2 to 3 inches in length.*

**Fringed sagebrush**  
*Artemisia frigida* Willd.



**Fringed sagebrush**  
Asteraceae  
(Sunflower family)

Fringed sagebrush is a perennial reproducing by seeds. Plants reach heights of 1 1/2 feet. Plants are mat-like with a silvery color before producing flower stalks. The plant has a strong sagebrush odor, is silvery blue and is bitter to taste. Leaves are finely divided into either 3 or 5 segments up to 1 1/2 inches long. Flowers are yellow, and are borne within long hairy bracts. Oblong seeds are flattened with rounded edges and are gray to brown. Flowering begins in August with seeds maturing in September.

Fringed sagebrush is an important wildlife and sheep feed source, but is highly competitive with perennial grasses needed by cattle. It is widespread on rangeland and increases rapidly with overgrazing.



*Early spring growth of fringed sagebrush appears as blue-green clusters within a gray background.*



*Fringed sagebrush, a mat-forming plant, produces seed stalks in late summer and fall with round yellow flower heads and hairy bracts.*



**Big sagebrush**

*Artemisia tridentata* Nutt.



## Big sagebrush Asteraceae (Sunflower family)

Big sagebrush is a perennial reproducing from seed. Plants average less than 3 feet in height; but in deep soils this woody species reaches heights over 10 feet. It is considered an evergreen even though leaves have a grayer color in winter months. Leaves are undivided, wedge-shaped with 3 blunt lobes. Leaves contain oils causing them to have a distinct odor when crushed. They are silvery blue because of the dense gray hairs found on both sides. Yellow flowers appear in late August, forming panicles. Seed formation and shed takes place from October to December. Seed have a one-year viability once they are shed. Older plants have trunks over 3 inches in diameter, which are covered with brown stringy bark.

Big sagebrush is a highly competitive species and often limits perennial grass production to 1/3 that of areas which have been cleared of sagebrush. It is the most common woody species in western rangelands. Control cannot be obtained by grazing management alone. Once it is controlled, re-establishment often takes over 20 years.



*This woody perennial has blue-green strap-shaped leaves with 3 distinct lobes at the tips.*



*Flowers are formed in August with seed being shed from October to December.*

**English daisy**  
*Bellis perennis* L.



**English daisy**  
Asteraceae  
(Sunflower family)

A perennial with basal leaves with a prostrate or spreading growth habit. Leaves are nearly smooth or loosely hairy, entire margined or toothed, broad above, narrowed at the base to a long stalk. Flower heads, erect and long-stalked, are white or pinkish with yellow centers. The stalks generally exceed the leaves in length.

English daisy was introduced from Europe as a garden plant. It is a common turf weed.

Non-standard names: European daisy and lawn daisy.



*Flowers, borne on long stalks, have white petals with yellow centers.*



*Prostrate growth habit is well adapted to turf environments.*

**Nodding beggarticks**  
*Bidens cernua* L.



**Nodding beggarticks**  
Asteraceae  
(Sunflower family)

Annual; stem branching, erect stems up to 4 feet tall, nearly smooth; leaves without stalks, undivided, toothed; heads with yellow flowers, nodding; fruit generally with 4 horns.

Devils beggarticks (*B. frondosa* L.) is similar except leaves are long-stalked and divided into 3 or 5 sharply toothed leaflets; heads do not nod, fruits have 2 horns.

Found frequently on moist soils in low areas and waste places; not found in cultivated fields. Several other species similar to these are found in the region.

Non-standard names: bur marigold or sticktight.



*Cotyledons are oval shaped, with rounded tips having smooth leaf margins. The first true leaves are ovate with entire margins, while subsequent leaves are opposite with serrated margins.*



*Note the 4 horns on the fruit of nodding beggarticks; there are only 2 on devils beggarticks.*

**Plumeless thistle**  
*Carduus acanthoides* L.



**Plumeless thistle**  
Asteraceae  
(Sunflower family)

Plumeless thistle is a winter annual or biennial herb, from a stout fleshy taproot, rarely flowering the first year. Stems grow from 1 to 4 feet tall; they are freely branched above and covered with spiny wings 1/4 to 3/4 inch wide extending up to the flowering heads. Basal rosette leaves are usually 4 to 8 inches long with spinose lobes. Stem leaves alternate, sessile and blending into the stem. Peduncles usually spiny-winged up to the base of the flowering heads; heads solitary at the ends of branches or in clusters of 2 to 5. Involucral bracts narrowly lanceolate, sparsely to densely hairy. Corolla mostly purple, rarely white or yellowish.

This native of Eurasia is infrequent to locally abundant in pastures, stream valleys, fields and roadsides. It is frequently found in Idaho, Colorado and Wyoming and has the potential of becoming a widespread noxious weed. Flowering occurs from May to July.



*A seedling rosette of plumeless thistle has wavy leaves with yellow spines along the leaf margins.*



*Flower heads, 1 to 2 inches in diameter, are purplish-pink with bracts holding the seed appearing as sharp spines. Flowering occurs from May to July.*



**Musk thistle**

*Carduus nutans* L.



**Musk thistle**  
Asteraceae  
(Sunflower family)

Musk thistle is biennial or sometimes a winter annual, which grows up to 6 feet tall. Leaves are dark green with light green midrib, deeply lobed, and spiny margined. Leaves extend onto the stem giving a winged appearance. Flower heads are terminal, solitary, 1 1/2 to 3 inches in diameter, and usually bent over. Flowers are deep rose, violet or purple, occasionally white; they are subtended by broad, spine-tipped bracts. Fruits are 3/16 inch long, shiny, yellowish-brown with a plume of white hair-like fibers.

Musk thistle was introduced to North America in the early part of the century and is now widespread. It is native to southern Europe and western Asia. It invades pasture, range and forest lands along with roadsides, waste areas, ditch banks, stream banks and grain fields. It spreads rapidly forming extremely dense stands which crowd out desirable forages.

Non-standard name: nodding thistle.



*Musk thistle seedlings have wavy margins and are somewhat lobed with marginal yellow spines.*



*Flowers appear on this biennial in mid-summer. Flower heads are deep rose and up to 3 inches wide. Bracts under the flower are a very distinctive identification feature.*

**Italian thistle**

*Carduus pycnocephalus* L.



**Italian thistle**  
Asteraceae  
(Sunflower family)

Annual or sometimes biennial; stems more or less woolly, mostly 1 to 4 feet in height, with spiny wings. Leaves deeply cut into 2 to 5 pairs of lobes, the terminal spine of the lobe is the longest and most rigid, undersurface of leaves slightly woolly. Flowers purplish or pinkish, borne in cylindric heads, these can be solitary or in clusters with 2 to 5 at the ends of the branches. Bracts hairy; fruits from the outer flowers gray in color, those from the inner portion of the head yellowish to tan.

Italian thistle is native to the Mediterranean region of southern Europe. The plant flowers during May and June and is generally senescent by mid-July. Italian thistle infests roadsides and waste areas, and can be a major problem on hill pasture land.

Slenderflower thistle (*Carduus tenuiflorus* W. Curtis) closely resembles Italian thistle. Slenderflower thistle usually has more than 5 heads per cluster and the bracts are smooth.

Non-standard name: compact-headed thistle.



*Deeply lobed leaves of an Italian thistle seedling.*



*The flower stalk of Italian thistle (left) has fewer heads than the slenderflowered thistle (right).*

**Woolly distaff thistle**  
*Carthamus lanatus* L.



**Woolly distaff thistle**  
Asteraceae  
(Sunflower family)

Woolly distaff thistle is a spiny annual having stems up to 3 1/2 feet tall. Leaves are alternate, clasping at the base, rigid, deeply toothed with long stout marginal spines, conspicuously veined, glandular and hairy, with the hairs, at least in the axils, more or less cobweb-like. Flowers, yellow with red veins, are borne in spiny heads. Fruits, about 3/16 inch long, are straw colored with some deeper brown or black, with those of the inner flowers being topped with a persistent ring of scales.

Woolly distaff thistle, native of the Mediterranean region, has been found in the eastern region of the U.S. and occasionally in California and Oregon. The known infestations appear to be spreading. The plant is a serious threat to range and pastures, due to its spiny nature.



*The spiny leaves and stems and aggressive nature make this plant a serious threat in both range and pasture situations.*



*Yellow flowers have spiny bracts, red veins and a cobweb-like pubescence.*

**Cornflower**

*Centaurea cyanus* L.



**Cornflower**  
Asteraceae  
(Sunflower family)

An annual with stems that are simple or branched up to 3 feet tall. Leaves are narrow, generally not toothed, or the lower leaves sometimes toothed or lobed. The whole plant is at first grayish and hairy. The heads are long stalked, showy, 1+ inches in diameter, blue, purple, pink, red, or white.

This Mediterranean native has spread to many parts of the world, no doubt as an ornamental species.

Non-standard name: bachelor's button.



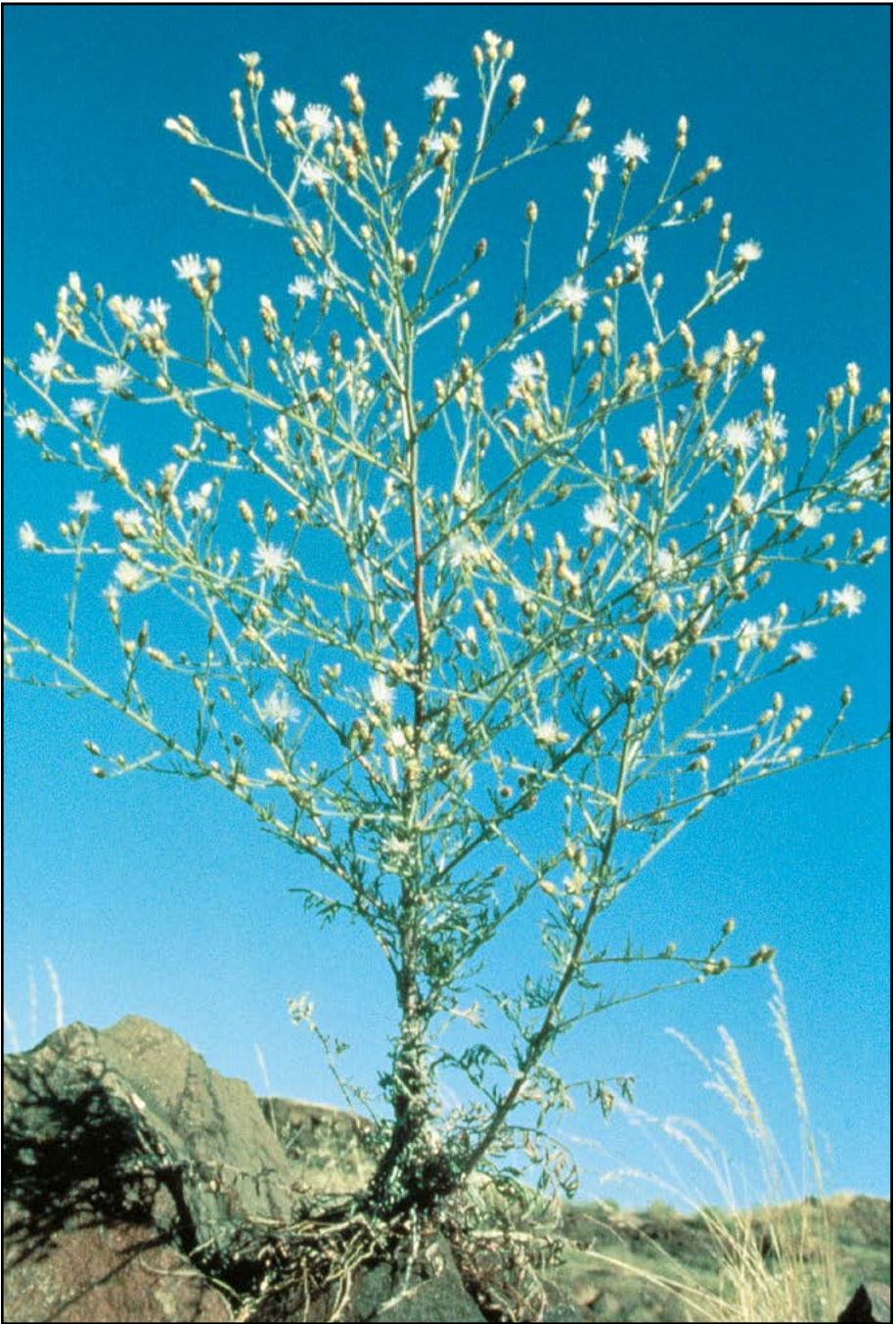
*Cotyledons are ovate with slightly notched tips.*



*The flowers range in color from white to red to blue to purple.*



**Diffuse knapweed**  
*Centaurea diffusa* Lam.



**Diffuse knapweed**  
Asteraceae  
(Sunflower family)

This weed is a diffusely branched annual or short-lived perennial, 1 to 2 feet tall, stems are rough to the touch. Leaves are pinnately divided; the reduced leaves of the inflorescence are mostly entire. Flowering heads are numerous and narrow. Flowers are white to rose or sometimes purplish; margins of involucre bracts are divided like the teeth of a comb, and bracts are tipped with a definite slender spine. Achenes are brown or grayish; pappus is lacking.

*Centaurea* is a large genus of over 400 species, most originating in the Mediterranean region. All of the species treated here have been introduced from Eurasia and now represent a threat to pastures and rangelands. Diffuse knapweed infests roadsides, waste areas and dry rangelands, and as a highly competitive plant, threatens to exclude many desirable species. Flowering occurs from July to September.



*Seedlings of diffuse knapweed have finely divided leaves covered with short hair.*



*Bracts under the flowers have yellow spines with teeth appearing as a comb along the spine margins.*

**Iberian starthistle**

*Centaurea iberica* Trev. ex Spreng.



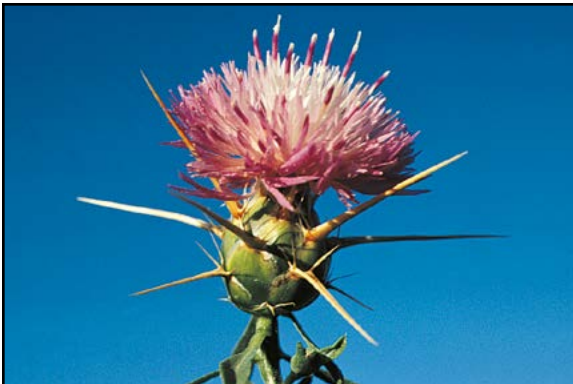
**Iberian starthistle**  
Asteraceae  
(Sunflower family)

Iberian starthistle is annual or biennial. Plants are prolific seed producers reaching heights of over 6 feet when mature. Plants form a rosette in late May and June and flower in July and August. The stems and leaves are covered with fine hairs with leaves being divided into narrow linear segments with the leaf tip narrow and undivided. The bracts of the purple flowers have straw-colored, spinelike projections over one inch in length. Seeds are light tan and topped with a plume of short flattened bristles.

Introduced from Europe, this species was reported abundant in California in the early 1950s in some counties. It has been reported in several western U.S. states. Purple starthistle (*C. calcitrapa* L.) closely resembles Iberian starthistle. Mature seed heads are needed to distinguish between the two species. If these species are found, inform your County Extension Service or Weed Control Districts of their location.



*Seedlings appear in early spring. Leaves are deeply lobed with light colored midribs.*



*Flowers are light purple with yellow spines, over an inch long, extending from the involucre.*

**Spotted knapweed**  
*Centaurea stoebe* L.



## Spotted knapweed

Asteraceae  
(Sunflower family)

Spotted knapweed is a biennial or usually short-lived perennial with a stout taproot. It can have one or more stems, branched 1 to 3 feet tall. Basal leaves up to 6 inches long, blades narrowly elliptic to oblanceolate, entire to pinnately parted; principal stem leaves pinnately divided. Flowering heads are solitary at end of branches; involucre bracts stiff and tipped with a dark comblike fringe. The ray flowers are pinkish-purple or rarely cream-colored. Fruits are about 1/8 inch long, tipped with a tuft of persistent bristles.

Spotted knapweed, which was introduced from Eurasia as a contaminant of alfalfa and clover seed, ranks as the number one weed problem on rangeland in western Montana. Other areas in the region are experiencing a reduction in desirable plant communities as this species is allowed to spread. Knapweeds readily establish themselves on any disturbed soil, and their early spring growth makes them competitive for soil moisture and nutrients. There is some evidence that knapweeds release chemical substances which inhibit surrounding vegetation. The flowering period extends from June to October.



*Seedlings start growth in early spring. Leaves are deeply divided on rosettes.*



*Flowers of spotted knapweed are usually pinkish-purple. Bracts under the flowers have dark spots tipped with fringe.*

**Meadow knapweed**

*Centaurea debeauxii* Gren. & Godr.



**Meadow knapweed**  
Asteraceae  
(Sunflower family)

Perennial; up to 3 1/2 feet tall with many branches. Lower leaves long-stalked, entire, coarsely lobed, or toothed, middle and upper leaves without stalks or nearly so, entire or toothed, the uppermost leaves usually much reduced and entire. Flowers borne in large pink to purplish-red heads at the end of the branches; involucre bracts deeply fringed, light to dark brown. This species is considered to be a hybrid between brown (*Centaurea jacea* L.) and black knapweed (*Centaurea nigra* L.).

Meadow knapweed is native to Europe and is now common in British Columbia, Oregon and northern California. It infests roadsides, waste areas, fields and pastures.



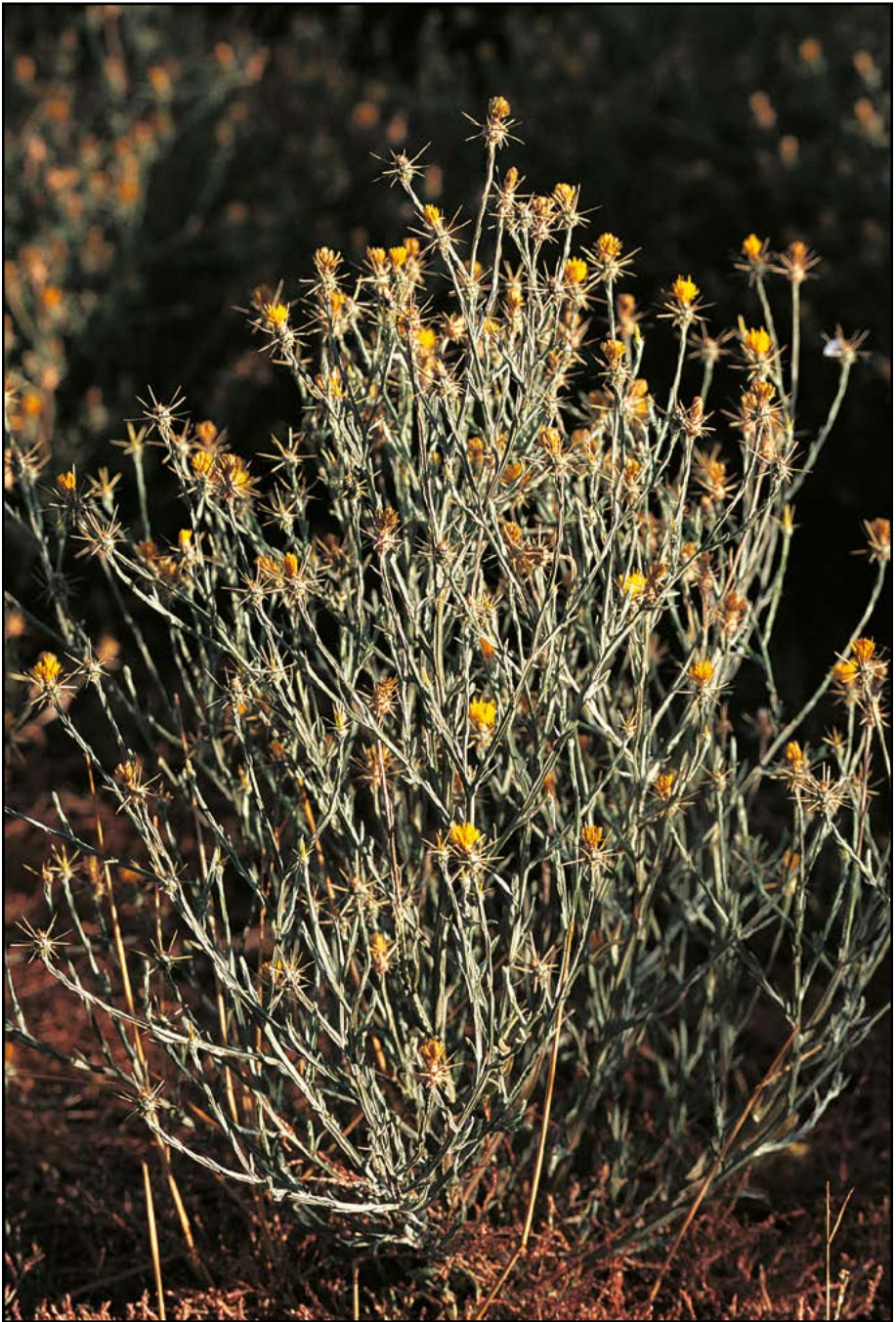
*Leaf margins may be entire as shown or toothed.*



*Flowers are larger and more spreading than some other knapweed species. Bracts below the flower are fringed.*



**Yellow starthistle**  
*Centaurea solstitialis* L.



**Yellow starthistle**  
Asteraceae  
(Sunflower family)

Yellow starthistle is an annual, 2 to 3 feet tall, has rigid branching, winged stems covered with a cottony pubescence. Basal leaves are deeply lobed while upper leaves are entire and sharply pointed. Flower heads are yellow, located singly on ends of branches, and armed with sharp straw-colored thorns up to 3/4 inch long. Fruits from ray flowers are dark-colored without bristles, while fruits from disk flowers are lighter and have a tuft of white bristles.

Yellow starthistle, introduced from Europe, grows on various soil types and is usually introduced on roadsides and waste areas. "Chewing disease" results when horses are forced to eat yellow starthistle.

A related species, Malta starthistle (*C. melitensis* L.) is similar to the yellow starthistle except Malta starthistle has smaller seed heads with smaller spines which are branched at the base.



Seedling plants appear in early spring. Leaves have deeply lobed margins with pointed tips.



Yellow flowers appear on this annual plant in mid-summer. Yellow spines up to 3/4 inch long extend from the involucre or seed case.

**Squarrose knapweed**  
*Centaurea virgata* Lam.



**Squarrose knapweed**  
Asteraceae  
(Sunflower family)

A long-lived taprooted perennial typically reaching heights of 12 to 18 inches. Stems are highly branched, with deeply dissected lower leaves and bract-like upper leaves. Flower heads are relatively small, containing 4 to 8 rose or pink colored flowers, usually developing no more than 3 to 4 seeds per head. Bract tips are recurved or spreading, with the terminal spine longer than lateral spines on each bract. It is often confused with diffuse knapweed, but differs principally in the fact that it is a true perennial, and bracts are recurved. Unlike diffuse knapweed, seed heads are highly deciduous, falling off the stems soon after seeds mature.

Squarrose knapweed is a competitive rangeland weed native to the eastern Mediterranean area. It is not yet widely distributed in the West, but has gained footholds in Utah, California and Oregon.



*Seedling showing deeply indented gray-green leaves.*



*Flower head showing recurved bract tips.*

**Rush skeletonweed**  
*Chondrilla juncea* L.



## Rush skeletonweed

Asteraceae  
(Sunflower family)

Rush skeletonweed is a perennial, 1 to 4 feet tall. Starting at the stem base for 4 to 6 inches, stems usually have downwardly bent coarse hairs; smooth stems above. Leaves form in a basal rosette, sharply toothed, and wither as the flower stem develops. Leaves of the stem are inconspicuous, narrow and entire. Flowering heads are scattered on branches, approximately 3/4 inch in diameter, with 7 to 15 yellow, strap-shaped flowers. Seeds are pale brown to nearly black, about 1/8 inch long. Body of seed is several-ribbed, smooth below with tiny scaly projections above, terminated by a long beak with numerous soft white bristles.

Rush skeletonweed is an introduced Eurasian species which presently infests several million acres in Idaho, Oregon, Washington and California. It generally inhabits well-drained, light-textured soils along roadsides, in rangelands, grain fields and pastures. Soil disturbance aids establishment. The extensive and deep root system makes skeletonweed difficult to control. Cut surfaces of the leaves and stems exude a milky latex. Flowering and seed production occur from mid-July through frost.



*Rosettes resemble those of a dandelion, but are readily distinguished when stem elongation starts in early summer when red hairs are usually present.*



*Yellow flowerheads, less than one inch wide, have strap-shaped petals that are flat across the end with distinct lobes or teeth.*

**Oxeye daisy**

*Leucanthemum vulgare* Lam.



**Oxeye daisy**  
Asteraceae  
(Sunflower family)

Oxeye daisy is an erect rhizomatous perennial, 10 to 24 inches tall, glabrous to sparsely hairy. Leaves progressively reduce in size upward on stem. Basal and lower stem leaves are oblanceolate to narrowly obovate, 2 to 5 inches long including the petiole, margin crenate to lobed or parted. Upper leaves become sessile and merely toothed. Flowering heads are solitary at the ends of branches, about 1 1/2 inches long. Fruits have about 10 ribs.

Oxeye daisy is a native of Eurasia and has escaped cultivation. It can be found in meadows, roadsides, and waste places. Flowering occurs from June through August.



*Leaves of this creeping perennial have lobed margins with basal leaves growing up to 5 inches long.*



*Flower heads having white ray flowers and yellow disk flowers. This species is often transplanted as an ornamental.*



**Gray rabbitbrush**

*Ericameria nauseosa* (Pallas ex Pursh) Nesom & Baird



**Gray rabbitbrush**  
Asteraceae  
(Sunflower family)

This perennial is strongly scented with many branches. Stems, silky or white woolly covered, are 2 to 4 feet tall. Leaves are numerous, slender, alternate, not twisted, 3/4 to 2 inches long. Flowers are yellow, terminal in large clusters. Fruits are five-angled and hairy.

Gray rabbitbrush is one of at least 12 native species of *Chrysothamnus* that occur mainly in the West. They grow well on dry soils and are often associated with sagebrush. Gray rabbitbrush is an invader and its presence in dense stands indicates overgrazing. Plants rate low in palatability but sheep and wildlife will eat it. Indians used gray rabbitbrush as chewing gum, for yellow dye, tea, and for medicine. Control of this undesirable shrub is difficult due to its ability to resprout from the crown.

Non-standard name: rubber rabbitbrush.



*Stems of gray rabbitbrush are covered with fine hair, giving them a white color. Leaves are narrow and straight.*



*Yellow flowers appear in late summer on stem terminals as large clusters.*

**Douglas rabbitbrush**

*Chrysothamnus viscidiflorus* (Hook.) Nutt.



## Douglas rabbitbrush

Asteraceae  
(Sunflower family)

Douglas rabbitbrush is a perennial with stems 10 to 24 inches tall. Its bark is brown. Leaves are narrow, usually twisted, green, smooth or short—hairy but never woolly or silky. A sticky secretion is usually found at the base of the leaves. Flowers are yellow, small, in rounded or flat-topped clusters.

Douglas rabbitbrush is a native shrub growing in similar habitats as gray rabbitbrush. It is often confused with broom snakeweed. However, Douglas rabbitbrush usually has twisted leaves whereas those of broom snakeweed are straight. In addition, broom snakeweed dies completely back to the ground each year, while Douglas rabbitbrush leaves start each spring on previous stems. Like gray rabbitbrush it is considered an undesirable increaser, which increases with overgrazing and is difficult to control.

Non-standard name: green rabbitbrush.



*Leaves attach to brown-barked stems, having a spiral appearance. New growth comes from woody stems rather than the crown of the plant.*



*Flowers are yellow and appear as clusters in late summer and fall.*

**Chicory**  
*Cichorium intybus* L.



**Chicory**  
Asteraceae  
(Sunflower family)

Chicory is a perennial, with milky juice, growing from a deep taproot. Stems are 1 to 6 feet tall with spreading branches. Leaves are rough, basal leaves in rosette, oblanceolate, petiolate, toothed or often pinnately parted, and 2 to 10 inches long. Upper leaves become reduced, sessile, and even entire. Flowering heads are borne 1 to 3 together in the axils of much reduced upper leaves. Flowers are usually blue, but sometimes purple or occasionally white, up to 1 1/2 inches across. Fruits are weakly angled or ribbed, tipped by a crown of minute scales.

Chicory is a native of the Mediterranean region, but now it is cosmopolitan in the northern hemisphere. It is widespread along roadsides and disturbed sites, having been planted by man for use as salad greens and the root as a substitute for coffee. Flowering occurs from July to September.



*Immature growth of chicory appears as a rosette with lobed leaves that are rough in appearance.*



*Flower heads up to 1 1/2 inches across are normally blue or purple, sometimes white, and appear in mid-summer. Flower petals are squared on the tip and toothed.*

**Canada thistle**

*Cirsium arvense* (L.) Scop.



**Canada thistle**  
Asteraceae  
(Sunflower family)

Canada thistle is a colony-forming perennial from deep and extensive horizontal roots. Stems are 1 to 4 feet tall, ridged, branching above. Leaves are alternate, lacking petioles, oblong or lance-shaped, divided into spiny-tipped irregular lobes. Flowers are unisexual, on separate plants; flowers purple (occasionally white) in heads 1/2 to 3/4 inch in diameter; involucre bracts spineless. Fruits are about 1/8 inch long, somewhat flattened, brownish, with a tuft of hairs at the top.

Canada thistle is a native of southeastern Eurasia. It was introduced to Canada as a contaminant of crop seed as early as the late 18th century. Canada thistle differs from other species of the true thistle in that there are male and female flower heads, and these are on separate plants. By asexual reproduction, it is possible that a colony of male plants would produce no fruits, but still maintain itself. This aggressive weed is difficult to control; for example, breaking up the roots by plowing only serves to increase the number of plants. Flowering occurs during June through August.



*What appear to be new seedlings are usually new shoots arising from extensive creeping root systems.*



*Clusters of purple flower heads up to 3/4 inch across appear in the summer on this perennial. Bracts under the flowers are spineless.*



**Prairie thistle**

*Cirsium canescens* Nutt.



**Prairie thistle**  
Asteraceae  
(Sunflower family)

Prairie thistle is a perennial reproducing from seed. Seedling plant leaves become lobed as they develop. The entire plant is covered with fine hair. Each leaf is deeply lobed with yellow spines at the tip of each lobe. Leaf margins have smaller spines. Flowers are cream-white with the bracts being covered by short yellow spines. Seeds are light colored and curved. Blooms appear in early summer with seed development completed by July.

Prairie thistle is common along roadsides and in rangeland in the Rocky Mountain region but is not considered a threat to livestock forage production.



*Early spring growth appears as a blue-green rosette with deeply lobed leaves.*



*White flowers appear on this perennial in mid-summer. Yellow spines are found on the rounded involucre under the flower.*

**Yellowspine thistle**  
*Cirsium ochrocentrum* Gray



## Yellowspine thistle

Asteraceae  
(Sunflower family)

This is a biennial or short-lived perennial, sometimes reproducing by tuberous offsets. Stems 2 1/2 to 4 1/2 feet tall, simple or sparingly branched above, and densely covered with short woolly hairs. Leaves are 3 to 8 inches long, greenish or grayish, with tufts of soft woolly hairs on the surface and densely pubescent with short woolly hairs on the underside. Leaves are pinnately cleft into narrow lobes not reaching to the midrib, with rather crowded segments, which are mostly directed towards apex and armed with long yellowish spines 1/8 to 1/4 inch long. Leaf margins are irregularly toothed and these spine-tipped. Flowers are purple, rose, or cream-colored, solitary and terminal. Involucral bracts are in 5 to 7 rows, with cobweb-like hairs at least on the margin, outer ones are egg-shaped to narrow with a dark glandular dorsal ridge and a spreading yellow spine-tip, and the inner ones lance-shaped. Achenes, tan to brownish, smooth, and have a white pappus attached.

Yellowspine thistle, native to North America, can be found in dry sandy and gravelly soil in prairies, pastures, and open disturbed sites.



*Leaves are pubescent, pinnately cleft and armed with long yellowish spines.*



*Terminal, solitary flowers are purple, rose to cream-colored. Involucral bracts are somewhat covered with cobweb-like hairs and have a spreading yellow spine at the tip.*

**Meadow thistle**  
*Cirsium scariosum* Nutt.



**Meadow thistle**  
Asteraceae  
(Sunflower family)

An erect, taprooted, perennial growing 2 to 4 feet tall. Stems leafy, succulent, often with a few side branches. Stems and foliage are pale green, sometimes sparsely covered with thin cobwebby hairs. Leaves are deeply indented or toothed, with many narrow spine-tipped lobes. Flowers are white to light pink. Flowers are supported on short stalks in leaf axils, often appearing to attach directly to the main stem when blossoms first appear.

Leafy thistle is a native species, typically found in wet meadows, seeps, and pastures at mid to high elevations. At least 2 distinct varieties are reported. A unique feature is that the leaves surround the terminal flowers which are colored pink to white.

Non-standard names: elk thistle, Drummond's thistle, leafy thistle.



*Meadow thistle has flowers that are light pink to white. Flower heads develop on short stalks in leaf axils; the leaves extending well beyond flowers.*



*Leafy thistle, a similar species, has leaves that do not extend past the flowers.*

**Wavyleaf thistle**

*Cirsium undulatum* (Nutt.) Spreng.



**Wavyleaf thistle**  
Asteraceae  
(Sunflower family)

A perennial from a simple taproot. Stems are erect, branching, and 1 1/2 to 3 1/2 feet tall. Leaves of basal rosettes are 3 to 10 inches long, toothed, and hairy on both upper and lower surfaces, with spines 1/16 to 2 3/8 inches long. Upper leaves are also toothed and spined, but are smaller. Flowers may be pink, pink-purple, or creamy white. Flower bracts often have a prominent white glandular dorsal ridge, and are hairy on the margins or overall.

Wavyleaf thistle is a native species, often associated with sagebrush communities in foothills, meadows, and rangeland.

Non-standard name: gray thistle.



*Wavyleaf thistle rosette.*



*Involucre bracts often have a prominent white glandular dorsal ridge and minutely hairy margins.*



## **Bull thistle**

*Cirsium vulgare* (Savi) Ten.



**Bull thistle**  
Asteraceae  
(Sunflower family)

Bull thistle is a biennial with a short, fleshy taproot. The stem is 2 to 5 feet tall, bearing many spreading branches. It is green or brownish, sparsely hairy, irregularly and spiny winged. Leaves in the first year form a rosette, stem leaves are pinnately lobed, hairy and prickly on upper side and cottony underneath. Flowers are 1 1/2 to 2 inches wide, more or less clustered at the ends of branches. Involucral bracts are narrow, spine-tipped, progressively longer and narrower from outer to inner ones, flowers dark purple. Seeds are topped by a circle of plume-like white hairs.

Bull thistle is a native of Eurasia and is now widely established in North America, having been introduced many times as a seed contaminant. Pastures, fields, roadsides and disturbed sites are potential habitats for this highly competitive weed. Flowering occurs from July through September. It is possible to separate bull thistle from Canada thistle by examination of the leaves alone. Bull thistle leaves are prickly hairy above and cottony below, while Canada thistle leaves are glabrous above and glabrous or hairy below.



*Cotyledons are egg shaped. Young leaves are oval to oblong with a fringe of spines.*



*Flowers are pinkish-purple and appear in mid-summer. The involucre is somewhat tapered and covered with spines.*

**Hairy fleabane**

*Conyza bonariensis* (L.) Cronq.



**Hairy fleabane**  
Asteraceae  
(Sunflower family)

Annual 1/2 to 3 feet in height often confused with horseweed (*C. canadensis*). In early vegetative stages hairy fleabane has a more branching growth habit. Leaves are often slightly wrinkled or distorted, often hairy, 2 to 4 inches long and 1/4 to 1/2 inch wide with dark foliage. Heads are about 1/2 inch in diameter, and numerous, borne at the terminal ends of the stems. The seed pappus at maturity is two times or more the length of the body of the seed.

Hairy fleabane is a native of the American tropics and is common throughout California in waste areas and cultivated fields.

Non-standard name: flaxleaved fleabane.



*Seedlings have narrow leaves which are typically hairy and often wrinkled.*



*Flowers borne at the end of numerous branches.*

## Horseweed

*Conyza canadensis* (L.) Cronq.



**Horseweed**  
Asteraceae  
(Sunflower family)

Horseweed is a winter or summer annual, 1 to 5 feet tall. Stems are erect, unbranched below but often branched above. Leaves are alternate, crowded on the stem, simple, bristly with hairs and sessile or short petioled. Lower leaves are spatulate and sparingly or coarsely toothed, while upper leaves are lance-shaped to linear. The inflorescence is branched with slender flower stalks, flowers are inconspicuous with small white ray and yellow disk flowers. Seeds are numerous, small, flattened, about 1/16 inch long, with a white bristly pappus.

A native of North American grasslands, horseweed is common in pastures, meadows, cultivated fields, along roadsides and in waste areas. Mowing infested meadows or pastures when the plants are in the bud stage will prevent seed production. The leaves and flowers contain a terpene which is particularly irritating in the nostrils of horses. Flowering and seed production occur from late June to September.

Non-standard name: marestail.



*Seedlings and rosettes start growth in winter or early summer. Leaves are bristly or hairy and grow in an alternate arrangement around a central stem.*



*Small, inconspicuous flowers are borne at stem terminals in mid-summer on this annual.*

**Bristly hawkbeard**  
*Crepis setosa* Haller f.



**Bristly hawksbeard**  
Asteraceae  
(Sunflower family)

Annual with a taproot. Stems which originate as one or several from the base are branched, 1 to 2+ feet tall and somewhat hairy. Stem leaves are broadest at the base and coarsely toothed or lobed. Heads are yellow, generally numerous and small. Bracts of the head are coarse and stiff bristled. Smooth hawksbeard (*C. capillaris* (L.) Wallr.) is similar in appearance but has smooth stems and leaves and lacks bristles.

Bristly hawksbeard was introduced from Europe and has become a common weed of lawns and waste areas.

Non-standard name: rough hawksbeard.



*Seedling cotyledons are egg shaped with oval, sparsely toothed, first true leaves.*



*Bristly stems help to distinguish bristly hawksbeard from other species.*



**Common crupina**  
*Crupina vulgaris* Cass.



**Common crupina**  
Asteraceae  
(Sunflower family)

Common crupina is a fall germinating annual. The fleshy cotyledon has a red or purple midvein. Rosette leaves are obovate with entire to slightly toothed margins. Older rosette leaves and stem leaves are pinnately to bi-pinnately lobed. Margins of lobes are armed with short, stiff spines giving leaves a coarse, rough texture when touched. Stem leaves are alternate, sessile and progressively smaller toward the stem apex. Mature plant height varies from 1 to 3 feet. Main stem terminates in one to several short flowering branches; additional flowering branches originate in upper leaf axils. One to 5 flower heads produced on each branch. Heads are narrow, cylindric (3 to 4 times longer than wide) and topped with pink, lavender or purple flowers. A distinct ring of dark, stiff bristles encircle the broad end of the seed giving the appearance of a fishing dry fly.

Common crupina is native to the Mediterranean region. Found in range, forest and disturbed non-crop lands in Idaho, Washington, California and Oregon. The primary Pacific Northwest habitat of common crupina is southern slopes in steep canyon grasslands. Flowering usually occurs from June to July.



*Common crupina seedling showing the fleshy oblong cotyledons, the midrib often red or purple colored.*



*Mature flower heads terminate with purple ray flowers.*

**Cudweed**

*Pseudognaphalium* spp.



**Cudweed**  
Asteraceae  
(Sunflower family)

An annual plant grayish to white woolly with a spreading growth habit occasionally up to 20 inches tall. Leaves are alternate, entire and oblong, often broadly so,  $\frac{3}{8}$  to  $3\frac{3}{8}$  inches long and  $\frac{1}{8}$  to  $\frac{3}{8}$  inches wide. Heads are small, about  $\frac{1}{8}$  inch high, and borne in leaf axils and at the ends of the branches.

This native plant is semi-weedy in moist open places after the area dries. Several species occur in the Western United States.

Non-standard name: cotton batting plant.



*Seedling covered with dense hairs giving the surface a cottony appearance.*



*Small inflorescences borne in clusters at end of branches, with 50 to 75 flowers per head.*

**Curlycup gumweed**

*Grindelia squarrosa* (Pursh) Dunal



## Curlycup gumweed

Asteraceae  
(Sunflower family)

Curlycup gumweed is a biennial or short-lived perennial that reproduces by seed and grows 1 to 3 feet tall. The roots are fibrous; leaves alternate, 1 to 3 inches long, with saw-toothed margins. They are gland-dotted and exude a sticky material. Flowers are bright yellow, 1 inch in diameter, borne singly on the end of the branches. Curved bracts surrounding the flower also secrete a sticky substance which gives the plant its name. Seeds are oblong, cream colored, four-angled and deeply ridged.

Curlycup gumweed is a native plant found in pastures, rangelands, roadsides and waste areas sometimes forming nearly pure stands. It is highly drought resistant and increases after periods of dryness. It is considered undesirable as forage and is unpalatable to livestock. Indians used gumweed as a treatment for asthma, bronchitis, colic and skin rash. Extracts of gumweed are used in today's medicine for treatment of bronchial spasm, asthma, whooping cough and poison ivy rashes.

Non-standard name: rosinweed.



*Leaves are alternate and rounded with a toothed margin and are also covered with a sticky resin.*



*Waxy yellow flowers appear in mid-summer on curlycup gumweed. The involucre surrounding the flower is covered with curved bracts which secrete a sticky resin.*

**Broom snakeweed**

*Gutierrezia sarothrae* (Pursh) Britt. & Rusby



**Broom snakeweed**  
Asteraceae  
(Sunflower family)

Broom snakeweed is a native perennial warm-season plant reproducing by seed and root systems. The plant has a woody nature but rarely grows to heights over 18 inches. Stems grow new from the crown each year, not from old growth. Stems are close together, stiff and somewhat resinous. Leaves are alternate, narrow and untwisted, 1 to 1 1/2 inches long and are green with smooth margins, slightly rolled to the center and are located on the upper parts of the plant. Flower heads are small with inconspicuous yellow ray flowers. Fruit are oval and covered with chaffy scales. It is considered an evergreen shrub in New Mexico and Arizona but is deciduous in northern states.

Broom snakeweed is a common poisonous plant which is most toxic during leaf formation. Most losses occur in cattle and sheep as abortions. Weak calves and lambs are common during times when pasture is scarce and broom snakeweed is eaten. Pastures are not properly utilized when this weed is found intermixed with grasses.

Non-standard name: broomweed.



*Spring growth of this perennial comes from the plant crown each year. Leaves are 1 to 1 1/2 inches long and are straight.*



*Small yellow flowers appear in mid-summer on this perennial.*



**Common sunflower**  
*Helianthus annuus* L.



## Common sunflower and Nuttall sunflower

Asteraceae  
(Sunflower family)

The common sunflower is an annual, 1 to 10 feet tall. Stems are erect, simple to much branched and rough. Leaves alternate and are simple, rough, hairy, ovate or heart-shaped, with toothed edges. The flowers are showy, with yellow to orange-yellow ray flowers and brown or dark reddish-brown disk flowers. Achenes, gray to brown, are 1/4 inch long, wedge-shaped, somewhat flattened to 4-angled, smooth except for a few short hairs at the tip.

The Nuttall sunflower, *H. nuttallii* Torr. & Gray is a perennial, 2 to 10 feet tall. Smooth to rough stems grow erect, arising from a cluster of enlarged, tuberous roots with short, thick rhizomes. Leaves are opposite or sometimes nearly all alternate, ovate to narrowly lanceolate, with entire or serrated edges. The flower heads are few and at the end of long peduncles.

Native to North America, the sunflower has been cultivated since pre-Columbian times for its edible seeds. They are common weeds of roadsides, fence rows, fields, pastures, and waste areas. Flowering is from July to September.



*Cotyledons of common sunflower are linear. Later leaves have a rough surface with a slightly lobed margin tapered to a point.*



*Clusters of flowers appear in late summer on Nuttall sunflower. Flowers, approximately 2 inches across.*

**Texas blueweed**  
*Helianthus ciliaris* DC.



**Texas blueweed**  
Asteraceae  
(Sunflower family)

Texas blueweed is a perennial, 1 to 2 feet tall, with stems arising from woody, creeping roots. The sessile leaves are mostly opposite, narrow to broadly lance-shaped, 1 to 4 inches long, margins wavy, often with hairs. The flower head 1/2 to 1 inch across, has involucre bracts egg- to oblong-shaped, either rounded or with short, sharp tips, and somewhat overlapping. Ray flowers are yellow, with disk flowers reddish to dark purple. Achenes are grayish brown, four-angled, somewhat wedge-shaped and about 1/8 inch long.

Texas blueweed is native to the southwestern U.S. and can be found in both cropland and disturbed areas.



*Opposite leaves, 1 to 4 inches long, are usually narrow, having wavy margins and often with hairs along the margins.*



*Due to extensive underground creeping rootstalks Texas blueweed is an aggressive troublesome weed.*

**Spikeweed**

*Hemizonia pungens* (Hook. & Arn.) Torr. & Gray



**Spikeweed**  
Asteraceae  
(Sunflower family)

Spikeweed is an annual growing 1 1/2 to 3 feet tall, basal leaves pale straw colored, stiff, several inches long, with narrow lobes. Leaves along stem 1/2 inch long or less, sharp pointed, bearing dwarf vegetative branches or short flowering branches in their axils; heads borne at tips of short leafy branches, yellow, about 1/3 inch broad; fruit 1/16 inch long with wart-like projections and a short spine.

Spikeweed is native to California; it is abundant in the southern part of the state and has been reported in Washington and Oregon. It grows in dense clusters on alkaline soils on roadsides and waste areas, grain fields and in rangeland. Spikeweed is a tough, spiny plant which is avoided by livestock. It is a prolific seed producer and forms dense stands on areas favorable to its growth; flowering occurs from July to September.



*Cotyledon leaves are linear. Later seedling leaves are several inches long and sharply divided.*



*Spikeweed flowers are surrounded with spiny bracts making plants undesirable for grazing.*

**Camphorweed**

*Heterotheca subaxillaris* (Lam.) Britt. & Rusby



## Camphorweed

Asteraceae  
(Sunflower family)

Camphorweed is a tall, coarse, hairy, annual or biennial, with a strong, characteristic odor. The plant comes from a taproot and grows 2 to 6 feet tall. Stems are singular, mostly branching only at the top, more or less covered by long, spreading hairs with the upper branchlets with flower stalks bearing gland-tipped hairs. Leaves alternate with the lower leaves stalked, elliptic to lance-oblong, and usually with a pair of leaflike lobes on either side of the stalk base. The upper leaves are almost heart-shaped, sessile, and clasping the stem. Flower heads are relatively small, glandular, 1/2 to 3/4 inch in diameter. Ray flowers are yellow as are the disk flowers.

Camphorweed, native of tropical America, grows in moist or dry sandy soil in both crop and noncrop areas, and can be found in the southwestern U.S. It is closely related to telegraphplant (*H. grandiflora* Nutt.), except the latter has larger flowers with pubescent ray achenes, and upper leaves usually narrowed at the base.



Upper leaves are sessile (as shown), while lower leaves are stalked.



Flowers are found in the upper portion of the plant and have both yellow ray and disk flowers.



**Orange hawkweed**

*Hieracium aurantiacum* L.



**Orange hawkweed**  
Asteraceae  
(Sunflower family)

Fibrous rooted perennial herb up to 12 inches tall. The leaves are basal, occasionally with 1 or 2 small leaves on the bristly stems. The plants contain milky juice. It has 5 to 30 flower heads, each in a compact umbelliform inflorescence. The strap-shaped flowers are red-orange with notched upper margins. Meadow hawkweed (*Hieracium caespitosum* Dumort.) is similar in appearance to orange hawkweed differing by having yellow flowers and smooth leaves.

The distribution of both species is limited. Orange hawkweed is reported to be west of the Cascades and into northwest Wyoming and yellow hawkweed in northeast Washington and adjacent Idaho.



*Bristly leaves of orange hawkweed.*



*Smooth leaves of yellow hawkweed.*



*Flowers of yellow and orange hawkweed.*

**Hairy catsear**

*Hypochaeris radicata* L.



**Hairy catsear**  
Asteraceae  
(Sunflower family)

Spotted catsear is a perennial, 3/4 to 2 feet tall. Leaves are 2 to 8 inches long, toothed or lobed, rough-hairy, borne in a basal rosette. Flowering stems are sparsely branching. Heads are 1 to 1 1/2 inches in diameter, the flowers yellow, all strap-shaped. Fruits are long-beaked, roughened, tipped by a circle of plume-like bristles.

Spotted catsear is European in origin, and is now widely established in the U.S. and southern Canada. It is more prevalent west of the Cascade Mountains. It flowers from May to October. This is a weed of disturbed sites, waste areas, lawns, gardens, pastures and cultivated fields.

Non-standard name: false dandelion.



*This perennial forms a rough-hairy rosette the first year.*



*Yellow strap-shaped flowers are found at the end of a 10 to 16 inch long stem.*

**Poverty sumpweed**  
*Iva axillaris* Pursh



**Poverty sumpweed**  
Asteraceae  
(Sunflower family)

Poverty sumpweed is a perennial, 6 to 18 inches tall. Stems are erect, much branched, smooth or slightly hairy. Leaves are mainly opposite, numerous, sessile, entire, narrowly oblong, 1/4 to 3/4 inch long, rough-hairy, harsh and stiff to the touch. The small tubular flowers are borne in small heads which hang from the axils of the upper leaves; achenes are deep gray to almost black, wedge-shaped, 1/8 inch long with a rough surface.

Native of western North America, poverty sumpweed is widely distributed. It commonly occurs along railroad rights-of-way and roadsides, in pastures and waste areas, and sometimes in cultivated cropland. It is quite tolerant of saline and alkaline soils.

Non-standard name: povertyweed.



*Seedling plants have oval, rough opposite leaves.*



*Small, tubular yellow flowers borne in leaf axils are produced in late summer on this perennial.*

**Marshelder**

*Iva xanthifolia* Nutt.



**Marshelder**  
Asteraceae  
(Sunflower family)

Marshelder is a robust branched annual, 2 to 7 feet tall and reproducing by seed. Leaves are mostly opposite; but the uppermost alternate, with long petioles. Blade is ovate to broadly ovate, 3 to 12 inches long and similar to those of common cocklebur. Flowering heads are similar to those of poverty sumpweed; but they are stalkless, crowded on long, branching spikes at the top of the stem and the upper leaf axils. Flowers are greenish-white, with 8 to 20 staminate flowers and usually 5 pistillate flowers. Corollas are greatly reduced. Fruits are ovate, less than 1/4 inch long and dark brown.

Marshelder is an occasional weed in sandy, damp or drying sites, especially streambeds and flood plains. The pollen may cause serious hay fever in late summer, and the leaves produce a skin rash in some people. Flowering occurs from late July through September. It is native to middle North America.



*Small ovate cotyledons are followed by spatulate true leaves and later seedling leaves have lobed margins.*



*Ovate fruit less than 1/4 inch long appear as a mealy substance surrounding the terminal stems.*



## Blue lettuce

*Lactuca tatarica* (L.) C.A. Mey.



**Blue lettuce**  
Asteraceae  
(Sunflower family)

A deep-rooted rhizomatous perennial, with an erect leafy stem growing up to 4 feet tall. Leaves are 2 to 6 inches long, lance-shaped or linear, with lower leaves often prominently toothed. Leaves are smooth, bluish-green, with light midribs. Blue to purple flowers distinguish this from other species of *Lactuca*. Seeds may be black or brown, with a short beak bearing a tuft of white hairs. Plants exude a white milky sap when injured.

Blue lettuce is a native of North America, but is considered a troublesome or noxious weed in some areas of the West. Typical habitat includes foothills, marshes, canals, streambanks, roadsides, meadows, pastures, and cultivated fields.



*Blue to purple flowers, up to 1 inch in diameter, distinguish this from other species of *Lactuca*.*



*Deep-growing vertical and lateral rootstocks.*

**Prickly lettuce**

*Lactuca serriola* L.



**Prickly lettuce**  
Asteraceae  
(Sunflower family)

Prickly lettuce is a biennial or winter annual, from a large taproot, with milky juice, reproducing only by seeds. Principal stem is 1 to 5 feet tall, branching only in flowering portion, or sometimes a few short branches from the base. Leaves alternate, twisted at the base to lie in a vertical plane, prickly on the lower side of the midrib, clasping the stem with two angled or earlike lobes. Lower leaves are 2 to 10 inches long with two forms. Margins may be pinnately lobed or lobeless. Flower heads are yellow, often drying blue, 1/8 to 1/3 inch broad and composed of ray flowers only. Each flowering head has 6 to 30 flattened fruits with 5 to 7 parallel ridges on each side. The fruit are bristly near the summit.

Prickly lettuce is a native of Europe, and is now naturalized throughout most of North America. This weed is a serious invader in disturbed soil of irrigated crops and orchards. It is also common along roadsides, yards and small gardens. Hybrids may represent an infusion of genes from cultivated lettuce. Flowering occurs from July to September.

Non-standard names: China lettuce, wild lettuce.



*Leaves are slightly lobed in the seedling stage.*



*Leaves have prominent sharp spines on the back side of the midrib.*

**Skeletonweed**

*Lygodesmia juncea* (Pursh) D. Don ex Hook.



## **Skeletonweed** Asteraceae (Sunflower family)

Skeletonweed is a perennial reproducing by seed. The plant grows up to 18 inches tall and appears to be all stems. The stems are erect, green, finely grooved and branched. Leaves are small, linear and up to two inches long at the base. Upper leaves are reduced to small awl-like projections. Stems and leaves contain a white, milky, latex sap. Light purple flowers are small – less than one inch across – and are flattened, but lobed at the tip. Seeds are less than 1/2 inch long, have eight to 10 ridges vertically and have a cream-colored pappus. Blooms appear in late June through September with seeds maturing in July to September.

Skeletonweed is common along roadsides, waste areas, pastures, rangeland and in cropland. This plant could become a potential problem in cropland, so prevention would be advisable.



*Upper leaves on skeletonweed are reduced to small awl-like projections.*



*Skeletonweed produces light purple flowers in late summer. Flowers have teeth on the tips.*

**Hoary tansyaster**

*Machaeranthera canescens* (Pursh) Gray



**Hoary tansyaster**  
Asteraceae  
(Sunflower family)

Hoary tansyaster, white prairie aster (*Symphyotrichum falcatum* (Lindl.) Nesom) and hairy false goldenaster (*Heterotheca villosa* (Pursh) Shinnery) are usually perennials, 1/2 to 2 feet in height, reproducing by seed and white prairie aster by underground creeping roots. Leaves vary from sparsely to densely hairy, fleshy and firm with linear-lanceolate shape, 1 to 2 inches long. Flowers are clustered at ends of branches with over 20 white, yellow or purple flowers per inflorescence. Flowering occurs from July to October.

Many aster species occur in the West. Most are not considered problem species but under damp soil moisture conditions can be very competitive in meadows, rangeland or home landscapes.



*Whiteprairie aster is less common than purple aster but often grows near the same location.*



*Hairy golden aster flowers are often larger than purple or whiteprairie aster. Leaves and stems are extremely hairy.*



**Coast tarweed**

*Madia sativa* Molina



**Coast tarweed**  
Asteraceae  
(Sunflower family)

An annual with erect stems, up to 5 feet tall. Stems are leafy, simple or branching and the entire plant is sticky – glandular, disagreeably scented and hairy. Leaves are narrow. Flowering heads are inconspicuous and clustered at the apex of the stem, at ends of branches and in leaf axils. Heads are always partially enclosed by leaves. Ray flowers are few, short and yellow.

Coast tarweed was introduced from South America and can now be found from Washington to California. It occurs along roadsides, in disturbed areas, and on dry open hillsides, and overgrazed rangeland.

Non-standard name: Chilean tarweed.

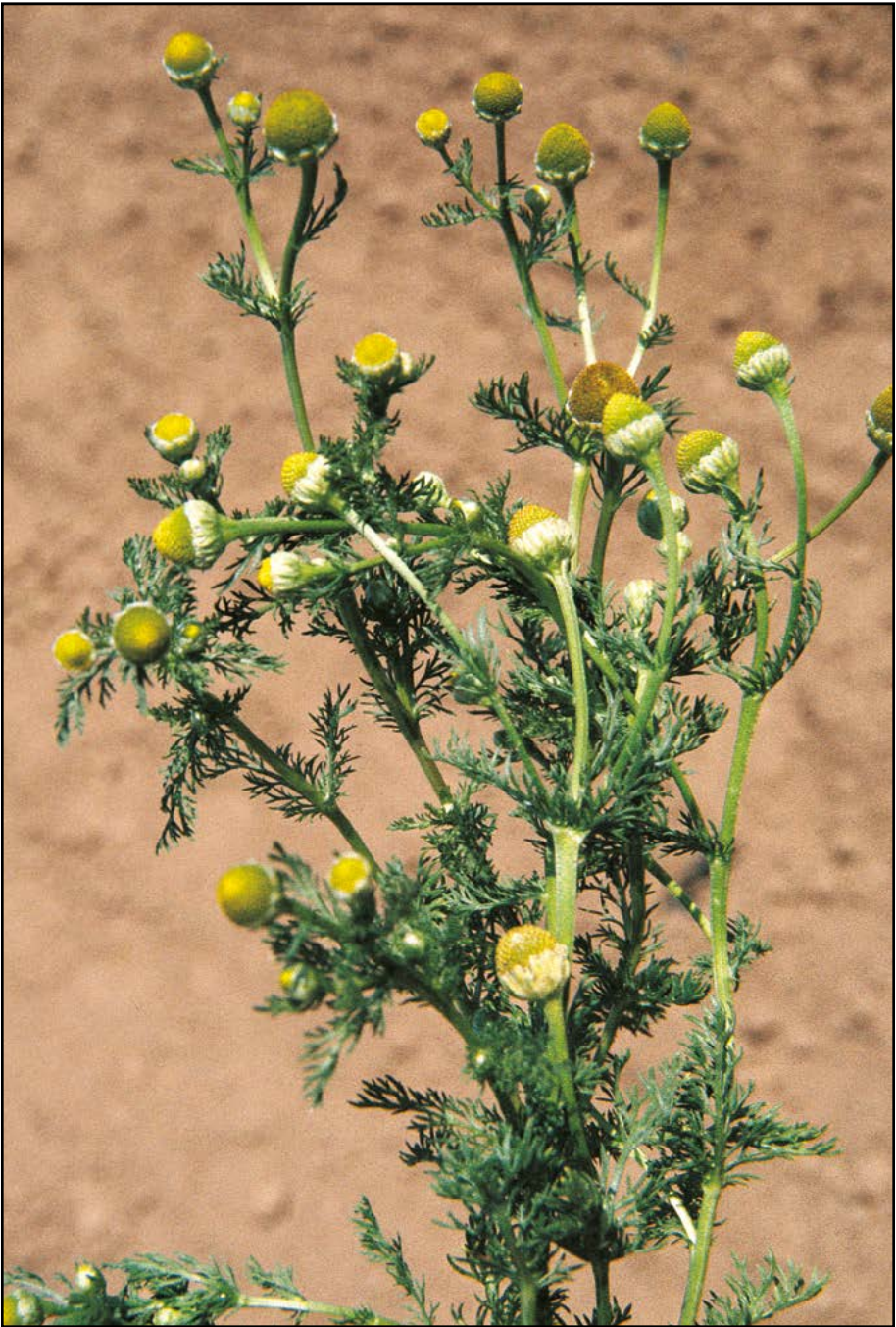


*Cotyledon leaves are ovate. The first true leaves are lanceolate and considerably longer.*



*Resinous material on flower and leaves of coast tarweed.*

**Pineapple-weed**  
*Matricaria discoidea* DC.



**Pineapple-weed**  
Asteraceae  
(Sunflower family)

Annual which is erect, up to 1+ feet tall with leaves that are greatly divided into very short narrow segments. The heads are cone-shaped, 1/16 to 1/3 inch high with many yellowish-green flowers, each head surrounded by several overlapping bracts with papery margins. The ray flowers are lacking. Pineapple-weed gives off a pleasant “pineapple” odor when plants are crushed.

Pineapple-weed is native to North America and is a common pest of roadsides, gardens, and cropland. Mayweed chamomile (*Anthemis cotula* L. ) has a similar appearance but has a disagreeable odor and white ray flowers.



*Cotyledons are linear while true leaves are finely divided.*



*Note the absence of ray flowers on the heads of pineapple-weed.*

**Scotch thistle**

*Onopordum acanthium* L.



**Scotch thistle**  
Asteraceae  
(Sunflower family)

Scotch thistle is a biennial that grows up to 12 feet tall. Stems have broad, spiny wings. Leaves are large, spiny, and covered with fine dense hair, giving a grayish appearance. Upper leaves are alternate, coarsely lobed; basal leaves may be up to 2 feet long and 1 foot wide. Flower heads are numerous, 1 to 2 inches in diameter, bracts spine-tipped. Flowers are violet to reddish. Fruits are about 3/16 inch long, tipped with slender bristles.

Scotch thistle is a native of Europe and eastern Asia and is now sparsely naturalized over much of North America. It can be found along waste areas and roadsides. It is an aggressive plant and may form stands so dense that they are impenetrable to livestock.

Non-standard name: cotton thistle.



*Rosettes two feet across are not uncommon for this hearty plant. Leaves are covered with white hair giving them a blue-green color.*



*Violet to reddish flowers, 1 to 2 inches in diameter, are produced the second year of this biennial's growth cycle. Stems appear to have wings.*

**Tansy ragwort**  
*Senecio jacobaea* L.



**Tansy ragwort**  
Asteraceae  
(Sunflower family)

Tansy ragwort is a biennial or short-lived perennial from a taproot. Stems are 1 to 6 feet tall, solitary or several, simple up to the inflorescence. Their pubescence consists of cobwebby hairs in early stages of growth. Leaves 2 to 8 inches long, alternate and equally distributed, mostly 2 to 3 times pinnately lobed, the terminal lobe generally larger than the lateral ones. Flowering heads are numerous. Both ray and disk flowers are yellow; ray flowers are 10 to 13 in number and 1/4 to 1/2 inch long. Fruits of the disk flowers are minutely pubescent; those of the ray flowers are glabrous.

This European native is widespread in Washington, Oregon, California, and British Columbia, having arrived in seaports in the early 1900s. Tansy ragwort is toxic to cattle and horses. Like common groundsel, it has several alkaloids which produce irreversible liver damage. Flowering occurs from July to September. While tansy ragwort is not presently in all western states, it does infest millions of acres of private range, public range and pasture land in the Pacific Northwest.



*Rosettes of this biennial have leaves that are deeply lobed – compound leaflets are also lobed.*



*Yellow terminal flowers less than one inch across are borne as terminal clusters.*



**Riddell groundsel**  
*Senecio riddellii* Torr. & Gray



**Riddell groundsel**  
Asteraceae  
(Sunflower family)

A perennial subshrub 12 to 40 inches tall. Stems are numerous, arching and branching upward from a taprooted woody crown. Divided leaves less than 3/16 inch in width are often over 3 inches long and without hairs. Threadleaf groundsel (*Senecio flaccidus* Less.) (not shown) has a similar appearance but has a gray color caused by fine hairs covering the leaf. Broom groundsel (*Senecio spartioides* Torr. & Gray) (pictured) looks similar but leaves are undivided. Stems of threadleaf groundsel branch above the crown. Flowers appear from August to October.

Riddell and threadleaf groundsel are poisonous to cattle and sheep with poisoning being caused by pyrrolizidine alkaloids preventing reproduction of liver cells. Riddell groundsel is common on sandy moist sites while threadleaf groundsel typically grows in dry well-drained soils.



*Riddell groundsel has divided leaves with flowers the same color and size as broom groundsel.*



*Flowers are yellow to orange with about eight ray flowers and tubular disk flowers.*

*Broom groundsel has undivided leaves but is similar in size and shape to Riddell groundsel.*

**Common groundsel**  
*Senecio vulgaris* L.



**Common groundsel**  
Asteraceae  
(Sunflower family)

Common groundsel is a simple or branched annual, sometimes biennial, from a taproot. Stems are 6 to 18 inches tall; herbage is glabrous to crisp-hairy. Leaves are alternate, coarsely and irregularly toothed or pinnately parted. Basal leaves are usually purplish on the under-surface, 1 to 4 inches long and 1/2 to 1 1/2 inches wide. Heads are several to numerous, with yellow disk flowers; involucre bracts are black-tipped. Fruits are slender, ridged, somewhat pubescent, long, silky. White hairs terminate the achene. The genus *Senecio* is one of the largest genera of plants, containing well over 1000 species.

Woodland groundsel (*Senecio sylvaticus* L.) is also an annual which has similar flowers to common groundsel but has a nauseating odor when bruised and grows up to 3 1/2 feet tall with upper stems branched.



*Cotyledons are ovate and first leaves are toothed.*



*Common groundsel with black tipped involucre bracts.*

**Blessed milkthistle**  
*Silybum marianum* (L.) Gaertn.



**Blessed milkthistle**  
Asteraceae  
(Sunflower family)

Biennial or winter annual with stout, ridged, and generally branching stems up to 6 feet tall. Leaves sometimes reach 1+ feet in length and are broad, lobed and clasping the stem with ear-like lobes at the base. Leaves have spiny margins with white marbling along the veins. The head is thistle-like, with leathery spine-tipped bracts. The flowers are reddish-purple.

This spectacular native of Europe is distributed widely in the West.



*Spiny margins and white marbling along the veins of the leaves.*



*Long spines and large flower of milk thistle.*

**Canada goldenrod**  
*Solidago canadensis* L.



**Canada goldenrod**  
Asteraceae  
(Sunflower family)

Canada goldenrod is a perennial growing to heights of 4 feet, spreading by creeping roots and seeds. Alternate leaves surround the central stems and are gradually reduced upwards. Leaf blades are entire or commonly toothed and have three veins on the upper surface. Flowers are yellow, borne on numerous small heads with overlapping involucre bracts. Thirteen ray flowers are common, but there may be as few as 10 or as many as 17. Seeds are tipped with a circle of white hairs. *Solidago* is a genus of nearly 100 species, several common in western North America.

Canada goldenrod, a native of North America, is common in the U.S. and Canada. The plant is often seen along roadsides, streambanks and along ditches. The extensive root system makes it a difficult plant to control. It seldom reaches densities that are a problem in rangeland. Flowering occurs from August to October.



*Leaves are alternately spaced, 3 to 5 inches in length. They have three distinct veins and are sometimes toothed.*



*Golden yellow flowers grow in clusters on the terminal stem in late summer.*



**Perennial sowthistle**

*Sonchus arvensis* L.



**Perennial sowthistle**  
Asteraceae  
(Sunflower family)

A perennial, spreading from horizontal rhizome-like roots. Plants are usually 2 to 4 feet tall, succulent, and exude a milky juice when injured. Leaves have a clasping base and mildly prickly margins which vary from deeply toothed to nearly entire. Upper leaves are fewer and much smaller than the basal ones. The flower head is 1 to 2 inches wide, and rich yellow in color. Numerous gland-tipped hairs on involucre bracts and flower stalks help distinguish this species. Seeds are dark brown, prominently ridged and wrinkled, with a tuft of soft white pappus bristles.

Perennial sowthistle is a native of Europe or Eurasia. It is widely distributed in North America, and considered noxious in many states and provinces. It is common in gardens, cultivated crops, ditchbanks, and fertile waste areas where adequate water is available. Marsh sowthistle (listed by various authors as *S. uliginosus* Bieb., *S. arvensis* L. ssp. *uliginosus* (Bieb.) Nyman, or *S. glabrescens* Jord.) is a similar perennial; the most important difference being a lack of gland-tipped hairs.



New shoots emerge from stout lateral roots.



Rich yellow flower heads may be up to 2 inches wide. Flower stalks and bracts are covered with gland-tipped hairs.

**Marsh sowthistle**

*Sonchus arvensis* L. ssp. *uliginosus* (Bieb.) Nyman



**Marsh sowthistle**  
Asteraceae  
(Sunflower family)

This perennial arising from an extensive creeping root system is commonly 1 to 6 feet tall, glabrous, at least below the inflorescence and often covered with a waxy bloom which can be rubbed off. Herbage has a milky juice. Leaves are prickly-margined, the lower and middle ones are usually pinnately lobed to pinnatifid, mostly 4 to 10 inches long and 1 to 1 1/2 inches wide. Upper leaves develop less lobes and become clasping, uppermost leaves bractlike. Flowering heads, 1 to 1 1/2 inches across at anthesis, grow in a terminal flat to a domelike cluster. It has yellow ray flowers, which are fertile. Achenes are flattened, ribbed and rugose, with pappus of capillary bristles.

Marsh sowthistle was introduced from Europe but is now found worldwide in temperate zones. Marsh sowthistle (listed by various authors as *S. uliginosus* or *S. glabrescens*) lacks gland-tipped hairs.



Leaves have sharp prickles on their lobed margins. Immature growth stages often come from extensive underground roots.



Yellow flowers appear in late summer which develop into a cluster of windblown seeds.

**Spiny sowthistle**  
*Sonchus asper* (L.) Hill



**Spiny sowthistle**  
Asteraceae  
(Sunflower family)

A stout annual with stems 1 to 5 feet in height. The plant contains a milky juice. Lower leaves are lobed and toothed, the margins very spiny; leaves of the stem have sharp, stiff prickles and large rounded basal lobes clasping the stem. Flowers are yellow, strap-shaped and are 3/4 to 1 inch in diameter. Fruits are reddish-brown, flattened and with 3 to 5 ribs on each face, with a cluster of fine white hairs attached to the upper end.

Spiny sowthistle, a native of Europe, has spread to become common in distribution. The flowering period is from July to October. The plant is found along roadsides and in waste areas, gardens, and cultivated fields.



*This annual sowthistle has oval cotyledons. First true leaves are toothed with spiny margins.*



*Yellow strap-shaped flowers are followed by a vase-like structure with ribbed fruit.*

**Annual sowthistle**  
*Sonchus oleraceus* L.



**Annual sowthistle**  
Asteraceae  
(Sunflower family)

An erect fleshy annual 1 to 4 feet high. Basal leaves are stalked while upper leaves clasp the stems. All but the upper leaves are deeply lobed with 1 to 3 lobes along each side. Flower heads are numerous and pale yellow, 1/4 to 3/4 inch wide. The seeds are flat and ribbed lengthwise with a tuft of fine hairs which allows wind-borne dissemination.

Sowthistle was introduced from Europe and is found throughout the West, growing in vacant lots, roadsides, cultivated fields and gardens.

Non-standard name: sowthistle.



*Cotyledons are ovate. The first true leaves are spatulate with serrated margins.*



*Mature seed head containing seeds with parachute-like pappus attached, facilitating windblown dissemination.*



**Common tansy**  
*Tanacetum vulgare* L.



**Common tansy**  
Asteraceae  
(Sunflower family)

Common tansy is an aromatic perennial. Stems are 1 1/2 to 6 feet tall. It reproduces from seeds and rootstalks. Leaves are alternate, deeply divided into numerous narrow, toothed segments. Yellow flower heads, 1/4 to 1/2 inch across, are numerous in flat-topped dense clusters. Seeds are yellowish-brown with short 5-toothed crowns.

Common tansy is a native of Europe and became established in the U.S. when introduced as an ornamental and for medicinal purposes. It is generally found along roadsides, waste areas, streambanks, and in pastures throughout most of the U.S. and Canada. It is undesirable as forage for livestock. However, it has long been used as a medicinal herb. Common tansy is sometimes mistaken for tansy ragwort.

Non-standard name: garden tansy.



*Leaves are divided into individual leaflets, which are serrated on the margins. Stems are often purplish-red in color.*



*Flower heads contain button-like flowers without petals.*

## Dandelion

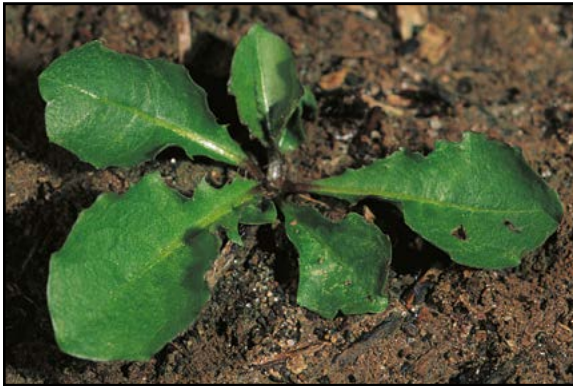
*Taraxacum officinale* F.H. Wigg



**Dandelion**  
Asteraceae  
(Sunflower family)

Dandelion is a perennial herb with milky juice from an often branched taproot up to several feet long. Reproduces by seeds and by new shoots from the root crowns. Leaves are clustered at the top of the root crown. They vary in size, from 2 to 12 inches long, divided into pairs of lobes, which are pointed or blunt at the tips. The flower heads are 1 to 2 inches across, composed of yellow petal-like ray flowers. Heads are solitary. Achenes are 1/8 inch long, five- to eight-ribbed, the apex ends in a slender beak two or four times as long as the body of the achene, with parachute-like hairs at its apex. The genus *Taraxacum* is a taxonomically confusing group subject to many interpretations as to the number of species. In fact, hundreds of specific names have been published.

The common dandelion is native to Europe, but is now cosmopolitan. It grows in moist sites, including lawns, meadows, pastures and overgrazed areas. It is good forage on the ranges, and is especially relished by sheep and cattle. Flowering occurs almost nine months of the year.



*Seedlings and immature growth stages of this perennial have leaves that vary in size from 2 to 12 inches long and are usually deeply lobed.*



*Yellow flowers on this perennial develop into a showy, circular ball of windblown seeds.*

**Spineless horsebrush**

*Tetradymia canescens* DC.



**Spineless horsebrush**  
Asteraceae  
(Sunflower family)

Spineless horsebrush is a perennial, deciduous shrub growing from 1/2 to 3 feet tall. Leaves are simple, alternate, linear and woolly with a prominent midrib. Flowers are borne in terminal clusters and are yellow to cream-colored. Flower heads usually have 4 involucral bracts. Stems are short, stout and silvery canescent until maturity then become glabrous; nodes are prominent causing a “knobby” appearance.

Spineless horsebrush is a native rangeland plant and is common throughout rangelands of the West. It causes photosensitization in sheep, an allergic reaction of the skin caused by exposure to sunlight, symptoms of which are called “big head” from swelling of the head and facial features. Horsebrush causes severe liver damage when large amounts are eaten, and sheep may die within a day or two, while small amounts cause various degrees of photosensitivity to develop. Control measures for horsebrush have not been successful.

Non-standard name: gray horsebrush.



*Spineless horsebrush plants are often confused with various sagebrush species before flowering. Leaves are linear and covered with dense hairs.*



*Flowering occurs in August and September with flowers ranging from yellow to cream-colored.*

**Western salsify**  
*Tragopogon dubius* Scop.



**Western salsify**  
Asteraceae  
(Sunflower family)

A biennial, 1 to 3 feet tall, more or less branched, arising from a long taproot. Herbage has milky juice. Some pubescence occurs when young, but is frequently glabrous at maturity. Leaves are narrow, up to 12 inches long, gradually tapering from the base to the apex. Flower heads occur at the end of long, hollow peduncles; involucral bracts, usually about 13, or only eight in depauperate plants, 1 to 2 inches long at anthesis. Bracts distinctly surpass the pale, lemon-yellow ray flowers. Achenes have a 1 inch or larger slender beak at the apex.

Western salsify is native to Eurasia and is now established over much of temperate North America. This is a weed of roadsides and waste sites. Other species of this genus are also common in the West, and sometimes species hybridize with each other. The stalk of meadow salsify (*T. pratensis* L.) is not swollen below the flower, while common salsify (*T. porrifolius* L.) has purple flowers.

Non-standard name: yellow salsify and goatsbeard.



*Seedling and immature stages of salsify have long, narrow leaves containing a white milky juice.*



*The stalk of western salsify is swollen below the flower head.*



**Spiny cocklebur**

*Xanthium spinosum* L.



**Spiny cocklebur**  
Asteraceae  
(Sunflower family)

An annual with spreading or erect stems, up to 2 feet long. Leaves are densely covered below with short white hairs and white-veined above, blades 1 to 3 inches long, narrow, generally with 2 short basal lobes or teeth, and a stiff 3-forked spine at the junction with the stem. Male flowers are uppermost and clustered. Female flowers are below the male flowers and form the bur. The fruit or "bur" bears a beak with hooked bristles.

Spiny cocklebur was introduced from Europe and is not as widely distributed as broadleaved cocklebur. Habitats include dry areas and barnyards.



*Cotyledons are strap-shaped while first pair of true leaves have serrated margins and are pointed at the tips.*



*Male flowers in clusters at top of plant.*

**Common cocklebur**  
*Xanthium strumarium* L.



**Common cocklebur**  
Asteraceae  
(Sunflower family)

Common cocklebur, an annual, 2 to 4 feet tall with the stem erect, branched, ridged, spotted and very rough. Leaves alternate, triangular or heart-shaped, rough on both sides and long petioled. Flower heads are small, in axils of upper leaves; male and female flowers are separate. Fruits are 1 inch long, woody, with hooked prickles and two curved spines at the tip and two seeds. Dark brown seeds are flattened and pointed on tips.

Common cocklebur is native to North America, but is now worldwide in distribution. Several other species are present in the West. Cocklebur is common in cultivated fields, abandoned land, run-down pastures, road ditches and waste areas. The burs are irritating both to humans and animals, and when found in wool, depreciate its value. Both the seeds and seedlings contain a substance toxic to livestock. Flowering may occur from July to September.



*Cotyledons are narrowly lanceolate. Later leaves are very rough with notched margins and taper to a point. Careful removal of seedlings reveals the old bur from which it came which can be used for positive identification.*



*Large rough leaves are attached to a thick purplish-green stem with distinctive purple to black spots.*

**Smooth woodyaster**  
*Xylorhiza glabriuscula* Nutt.



**Smooth woodyaster**  
Asteraceae  
(Sunflower family)

Smooth woodyaster is a perennial with numerous unbranched stems less than 12 inches tall, arising from a single crown and extensive, woody roots. Leaves are entire, lance-shaped, with finely toothed margins, tipped with fine spines. Flower heads are at the top of each stem, ray flowers petal-like, white to off-white with yellow disk flowers. The numerous seeds are topped by a tuft of brown hairs.

Smooth woodyaster is a native rangeland species in the Rocky Mountain region and is an indicator of selenium soils. Livestock can be poisoned by this plant if consumed over extended periods. Decomposition of the woodyaster plants leaves selenium in a form readily absorbed by surrounding desirable vegetation.



*Roots of this perennial are very large and woody. Plants grow to heights under 12 inches.*



*Flowers appear in early summer resembling small daisies with white ray flowers and yellow disk flowers in their center.*

**Coast fiddleneck**

*Amsinckia menziesii* (Lehm.) A. Nels. & J.F. Macbr. var.  
*intermedia* (Fisch. & C.A. Mey.) Ganders



**Coast fiddleneck**  
Boraginaceae  
(Borage family)

An erect annual with bristly or hairy stems 1 to 2 1/2 feet in height. Leaves are alternate, ovate or strap-shaped and bristly hairy, 1 to 4 inches long. Flowers are yellow and grouped along one side of a terminal inflorescence which curls at the tip having a fiddleneck appearance. The calyx and corolla are 5-lobed, corolla funnel-shaped with 5 stamens attached to the tube. Fruit is 4-lobed and breaks apart at maturity, forming 4 nutlets, each one-seeded.

Coast fiddleneck is a native of California and Oregon and is found in cultivated fields flowering in late spring. A related species is tarweed fiddleneck (*A. lycopsoides* Lehm.) which can be distinguished by well developed fornices (internal appendages in the upper throat of the corolla). Hay containing fiddleneck has been shown to be poisonous to livestock.

Non-standard name: fiddleneck.



Seedling with "y" shaped cotyledons and strap-shaped, bristly, hairy first leaves with blister-like protuberances.



The yellow flowers are arranged on one side of a coiled axis. Each lobe of the fruit contains a single seeded nutlet.



**Catchweed**

*Asperugo procumbens* L.



**Catchweed**  
Boraginaceae  
(Borage family)

A weak-stemmed, somewhat viny, annual with rough-textured leaves and stems which are covered with small, stiff bristly hairs that readily cling to animals and clothing. Flowers are small, blue to deep violet. The coarsely-toothed green calyx becomes much enlarged after flowering, forming a veiny, flattened sheath surrounding a cluster of 4 small nutlets.

Catchweed is an introduced species from Europe that is rapidly becoming a common weed of roadsides, waste places and cultivated areas.



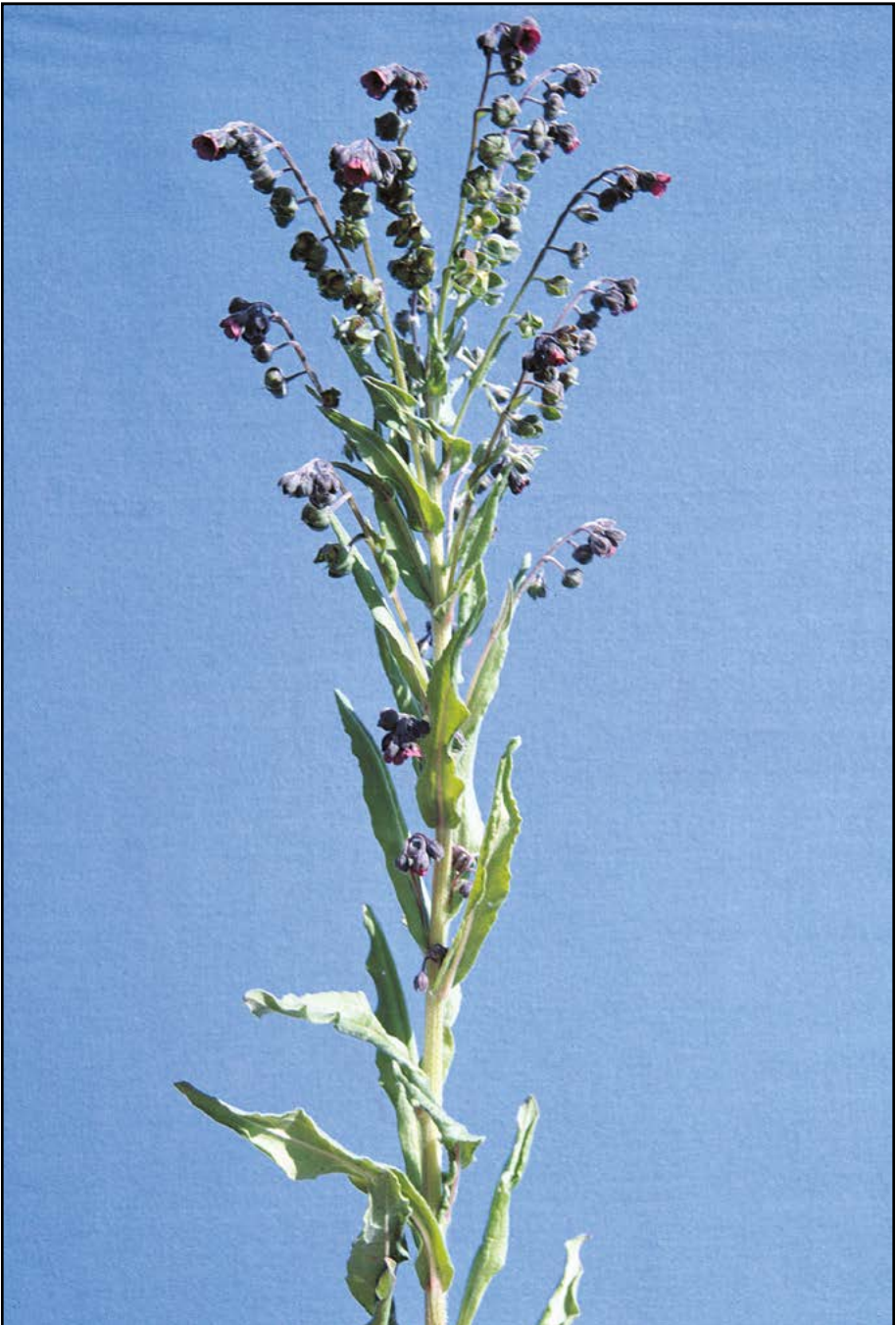
*Seedlings have broadly lanceolate, hairy cotyledons while true leaves are spatulate.*



*Purple flowers are inconspicuous and short-lived.*

## Houndstongue

*Cynoglossum officinale* L.



## Houndstongue

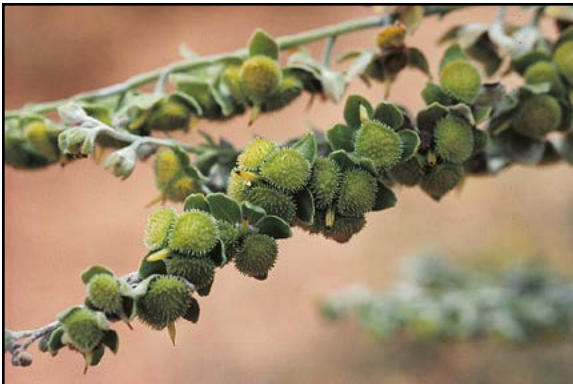
Boraginaceae  
(Borage family)

Houndstongue is a biennial growing 1 to 4 feet tall and reproducing by seed. Leaves are alternate, 1 to 12 inches long, 1 to 3 inches wide, rough, hairy, and lacking teeth or lobes. Flowers are reddish-purple and terminal. The fruit is composed of 4 prickly nutlets each about 1/3 inch long.

Houndstongue was introduced from Europe. It forms a rosette the first year and sends up a flowering stalk the second year. The leaves are rough and resemble a hound's tongue. It may be found in pastures, along roadsides and in disturbed habitats. The nutlets break apart at maturity and cling to clothing or animals. Houndstongue is toxic, containing pyrrolizidine alkaloids, causing liver cells to stop reproducing. Animals may survive for six months or longer after they have consumed a lethal amount. Sheep are more resistant to houndstongue poisoning than are cattle or horses. Horses may be especially affected when confined in a small area infested with houndstongue and lacking desirable forage. Therefore, ranges and pastures should be maintained to encourage production of grasses and high quality forage.



*Rosettes form in the first year of the two year growth cycle.*



*In the second year, houndstongue plants flower and produce an abundant supply of seeds that spread by attaching to clothing or animals.*

**Western sticktight**

*Lappula occidentalis* (S. Wats.) Greene



**Western sticktight**  
Boraginaceae  
(Borage family)

This annual, reproducing by seed, grows 6 to 12 inches tall. Leaves are narrow, somewhat blunt-tipped. Flowers are numerous, very small, blue to nearly white. Fruit is divided into 4 nutlets, margins covered with a single row of spear-like spines.

Western sticktight is native to the western plains region and is common along roadsides, waste areas, and abused ranges. The spiny seed, becoming entangled in wool, makes it a problem for sheep ranchers. It also readily clings to any passerby, so it is easily distributed.

Synonym: *Lappula redowskii* Am. auctt., Non (Hornem.) Greene.



Seedlings from this annual plant have oval to oblong leaves covered with hair.



Western sticktight produces an abundant supply of seed from mid-summer to fall. Seed is about 1/8 inch in size, spread by clinging to animals and clothing.

**Corn gromwell**

*Buglossoides arvensis* (L.) I.M. Johnston



**Corn gromwell**  
Boraginaceae  
(Borage family)

Annual with erect stems that are slender and simple or branching at the base, 1/4 to over 2 feet tall. Leaves are lanceolate and usually without stalks. Flowers are white to bluish-white, borne in the axils of reduced upper leaves. The fruit is composed of 4 small erect nutlets, gray-brown, pitted and sometimes warty.

Introduced from Europe and now common throughout the U.S.  
corn gromwell is especially troublesome where winter grains are grown.



*Seedlings have lance-shaped hairy cotyledons with the first pair of true leaves ovate with numerous hairs.*



*Flowers are borne in the axils of upper bracts.*



**Yellow alyssum**  
*Alyssum alyssoides* (L.)L.



**Yellow alyssum**  
Brassicaceae  
(Mustard family)

A spreading to erect annual growing 3 to 10 inches tall. Plants normally branch at the base. Leaves are narrow and strap-like, 1/4 to 1 inch long, lacking petioles. Leaves and stems are usually covered with tiny star-shaped hairs. Flowers are small, yellow fading to white, in many-flowered racemes at the tops of stems. Fruits are small, round, flattened silicles with thin wings on the margins and a slight notch at the apex.

Yellow alyssum was introduced from Europe. It is common in dry gravelly waste areas, foothills, and cropland. Dwarf alyssum (*A. desertorum* Stapf) and field alyssum (*A. minus* (L.) Rothm.) are other introduced weedy species that resemble yellow alyssum.



*Early seedling stage showing cotyledons and first pairs of true leaves.*



*Advanced seedling stage showing leaf arrangement and decumbent nature.*

**Wild mustard**  
*Sinapis arvensis* L.



**Wild mustard**  
Brassicaceae  
(Mustard family)

An annual or winter annual 1 to 3 feet tall. Stems are erect, with stiff hairs, at least on lower portions. Leaves are 2 to 8 inches long, 1 to 4 inches wide, lower ones deeply lobed, upper leaves are merely toothed and may be short-stalked or stalkless (but not clasping). Flowers are yellow with 4 petals. Seed pods (siliques) lack hairs, are 1 1/4 to 2 inches long, oval to round in cross section, and supported on short (1/10 to 3/10 inch) pedicels. Seedpods have a constricted beak above the uppermost seed. The beak of wild mustard is 3/10 to 6/10 inch long, obviously flattened (2-edged or 4-angled), and valves (pod halves) each have 3 to 5 prominent lengthwise veins. Pods are somewhat spreading. White mustard (*Sinapis alba* L.) resembles wild mustard, except that pods and pedicels of white mustard are covered with coarse spreading hairs.

Wild mustard, also called charlock mustard or kaber mustard, has been classified as *Sinapis arvensis* L., and *S. kaber* DC. by various authors. It is adventive from Europe; now widespread, infesting roadsides, cultivated fields, ditchbanks, and waste areas.



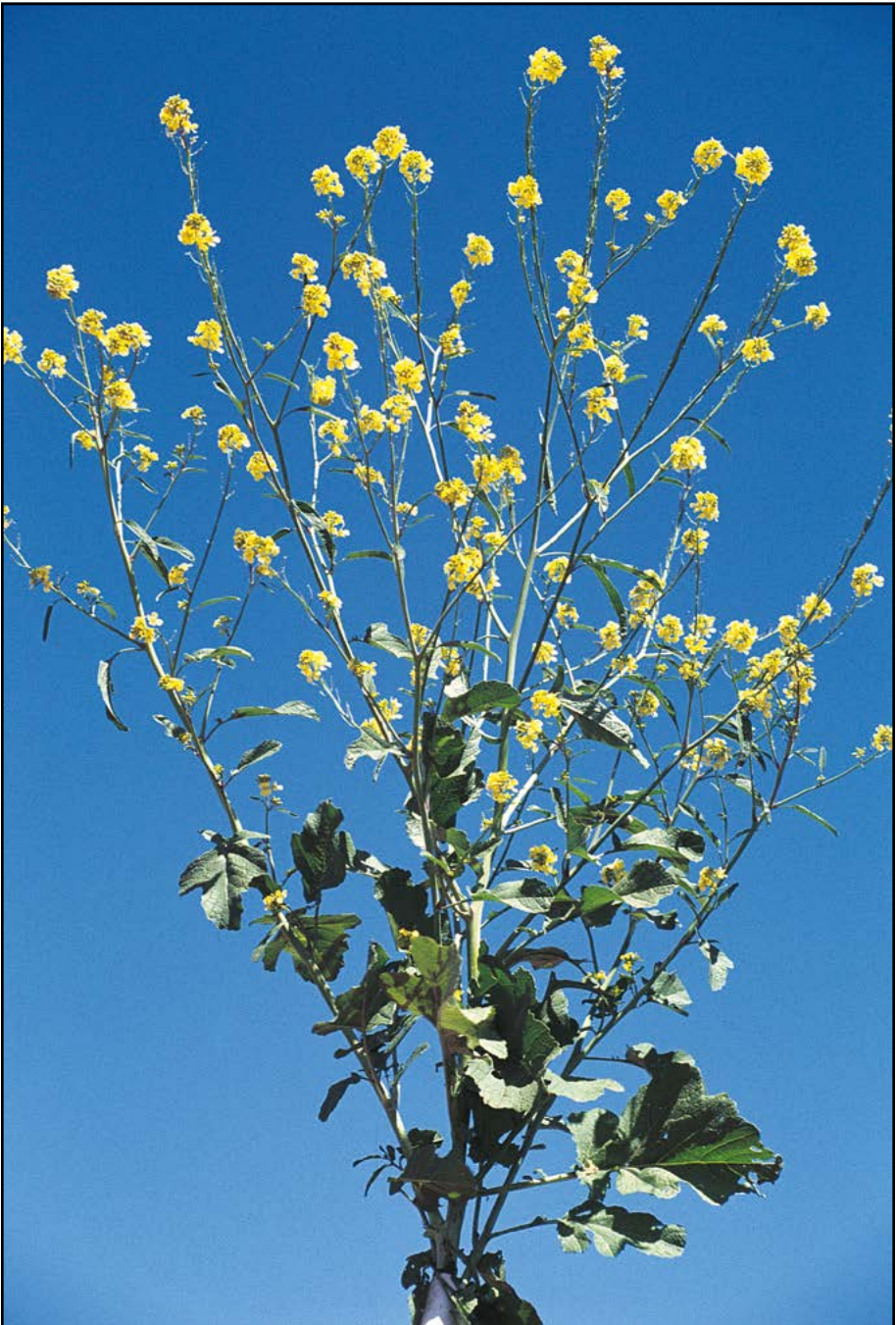
The cotyledons are kidney-shaped with a notch at the tip. Later leaves are oblong with wavy, toothed margins.



Flower cluster and leaf. Leaf shapes are not a reliable characteristic for distinguishing between Brassica species.

**Black mustard**

*Brassica nigra* (L.) W.D.J. Koch



**Black mustard**  
Brassicaceae  
(Mustard family)

An annual growing 2 to 8 feet tall. Stems are erect, with a sparse to dense covering of stiff hairs on lower portions, but generally smooth on upper stems. Leaves are 2 to 10 inches long, 1 to 6 inches wide, usually with a few short, stiff, scattered hairs. Leaves are stalked (not clasping, as in *B. rapa* L.), the lower ones deeply lobed and upper leaves toothed. Seed pods (siliques) lack hairs, are 4/10 to 1 inch long, somewhat 4-sided in cross-section, and supported on short (1/8 to 1/4 inch) pedicels. As with other Brassica species, pods have a conspicuous constricted beak above the uppermost seed. The beak of black mustard is short (1/20 to 1/4 inch) and cylindrical. Pod halves each have a single prominent lengthwise vein. Mature pods remain appressed close to the stem. Indian mustard (*Brassica juncea* (L.) Czern.) resembles black mustard but has smooth leaves, longer pods, a longer beak (1/4 to 1/2 inch), and longer pedicels (3/10 to 7/10 inch), with ascending non-appressed pods.

This European introduction is widespread in North America, infesting roadsides, cultivated fields, other disturbed sites.

Non-standard name: short-pod mustard.



*Cotyledons are deeply notched at the apex, giving them a heart-shaped appearance. The first true leaves are deeply lobed with a wrinkled, hairy surface.*



*Flowers resemble those of other Brassica species, having four bright yellow petals.*

**Birdrape mustard**  
*Brassica rapa* L.



## Birdsrape mustard

Brassicaceae  
(Mustard family)

A winter annual or biennial growing 1 to 4 feet tall. Roots resemble a small turnip. Stems and foliage are usually smooth. Lower leaves are up to a foot long, with a large terminal lobe and smaller lateral lobes. Upper leaves are small and non-lobed, having a pointed tip and broad clasping base. Flowers are yellow with 4 petals. Seed pods (siliques) lack hairs, are  $1\frac{1}{5}$  to  $2\frac{4}{5}$  inches long, and supported on long ( $\frac{3}{10}$  to  $\frac{8}{10}$  inch) pedicels. Seeds are black and nearly round. As with other *Brassica* species, pods have a conspicuous constricted beak above the uppermost seed. The beak of birdsrape mustard is  $\frac{3}{10}$  to  $\frac{6}{10}$  inch long, and valves (pod halves) each have a single (rather than 3 to 5) prominent lengthwise vein. Pods are spreading, rather than tightly appressed against the stem.

Birdsrape mustard was previously classified as *B. campestris* L. It is a native of Europe; now widespread in North America, infesting cultivated fields, roadsides, and waste areas.

Non-standard names: birds rape, wild mustard, wild turnip, wild rutabaga.



*Clasping upper leaves distinguish birdsrape mustard from other common mustards.*



*Showy 4-petalled yellow flower, typical of Brassica mustards.*



**Smallseed falseflax**

*Camelina microcarpa* Andr. ex DC.



**Smallseed falseflax**  
Brassicaceae  
(Mustard family)

This is an annual, 1 to 3 feet in height. Leaves are alternate, simple, entire, clasping at the base of the stem. Pubescence is either forked or stellate. Flowers are in racemes; petals are pale yellow with fruit pod having several reddish-brown seeds in each chamber.

Smallseed falseflax was introduced from Europe. It is found on disturbed sites such as fields, roadsides and waste places. It is frequently brought into a new area with feeds. Smallseed falseflax produces seeds from late spring to early summer.



*Seedlings of smallseed falseflax have ovate cotyledons with hairy, ovate first true leaves.*



*An immature plant shows the alternate leaf arrangement and entire leaves.*

**Shepherd's-purse**

*Capsella bursa-pastoris* (L.) Medik.



## Shepherd's-purse

Brassicaceae  
(Mustard family)

Winter annual or annual, 3 to 18 inches tall with stems erect, slender, one to several from a basal rosette, hairy below and smooth above. Leaves are alternate with the lower ones usually deeply lobed, the upper ones are few, lance-shaped, toothed or entire, clasping the stem with a pair of ear-like lobes at the base. The flowers are white, small and usually found at the end of elongated racemes. Fruits more or less heart-shaped, two-celled; seeds many, very small, oblong, reddish-brown with a single ridge on each side.

Native of Europe, shepherd's-purse has become well-established throughout much of the U.S. and Canada. It is common in cultivated fields, gardens, waste areas, poorly maintained pastures and on roadsides. This plant is one of the first to flower in the spring. Flowering and seed production may occur from April to September.



*Seedling leaves of this winter annual are usually deeply lobed, forming a rosette.*



*Fruits are heart-shaped and contain many reddish-brown seeds. Heart-shaped capsules have a ridge down each face and are attached by a long pedicel to the main stem.*

## Hoary cress

*Cardaria draba* (L.) Desv.



**Hoary cress**  
Brassicaceae  
(Mustard family)

A deep rooted perennial up to 2 feet tall, reproducing from root segments and seeds. Leaves are blue-green in color, lance-shaped. Lower leaves are stalked; upper leaves have two lobes clasping the stem. Plants have many white flowers with four petals, giving the plant a white, flat-topped appearance. Heart-shaped seed capsules contain two reddish-brown seeds separated by a narrow partition. Plants emerge in very early spring and have bloomed and set seed by mid-summer.

This perennial is common on alkaline, disturbed soils and is highly competitive with other species once it becomes established. Two other *Cardaria* species, lens-podded whitetop (*Cardaria chalepensis* (L.) Hand.-Maz.) and hairy whitetop (*Cardaria pubescens* (C.A. Mey.) Jarmolenko) are common in the western U.S. with differences in seed capsules and fruit used to identify each species.

Non-standard name: whitetop.



This perennial starts growth very early in the spring.



White flowers with four petals develop into bladder-like seed capsules in mid-summer.

**Blue mustard**

*Chorispora tenella* (Pallas) DC.



**Blue mustard**  
Brassicaceae  
(Mustard family)

A leafy, somewhat spreading, annual 6 to 18 inches tall, branched mostly from the base. Stems and leaves are sparsely to moderately covered with minute gland-tipped hairs. Leaves are oblanceolate, with wavy or coarsely-toothed margins. Flowers are pale purple, each with 4 petals. Fruits have a conspicuous beak, about 1/3 the length of the pod. Fruits break apart transversely into numerous 2-seeded sections instead of splitting longitudinally as with most mustards.

Blue mustard is considered a native of Russia or southwestern Asia. It inhabits waste areas and cultivated lands, reducing crop yields and affecting crop quality. Blue mustard gives off a disagreeable odor; and dairy animals eating it may produce off-flavor milk. Blue mustard superficially resembles Malcolm stock (*Malcomia africana* (L.) R. Br.), but can be distinguished by globose (rather than stellate) hairs, a conspicuous beak, and 2-seeded fruit segments.

Non-standard names: tenella mustard, purple mustard.



*Cotyledons are oval and somewhat glandular as are the first true leaves.*



*This is one of the first plants to flower in early spring. Flowers have 4 petals and are connected with a pedicel to a rough central stem.*



## Flixweed

*Descurainia sophia* (L.) Webb. ex Prantl



## Flixweed and Pinnate tansymustard

Brassicaceae  
(Mustard family)

Flixweed is a winter annual, native to Europe; 8 to 24 inches high; leaves alternate, 2 to 3 times pinnately compound; segments very narrow or linear; pubescent with branched hairs or nearly glabrous; inflorescence a raceme; petals very small, yellow or greenish-yellow, pod partitioned with 2 to 3 longitudinal nerves, siliques 1/2 to 1 1/4 inches long.

This mustard is distinguished from other mustards because of its finely dissected leaves. Both species spread by seeds from early to late summer to disturbed sites.

Pinnate tansymustard, *Descurainia pinnata* (Walt.) Britt, is a native, winter annual, 4 to 32 inches high; leaves alternate, pinnately dissected; stellate pubescence; inflorescence a raceme; petals yellow or yellowish green to cream; siliques less than 3/4 inch long; pods clavate or linear; two rows of seeds in each seed pod.



Seedlings have ovate cotyledons with the first true leaves pinnately lobed, divided and glandular.



Rosettes of flixweed and pinnate tansymustard are very similar with fernlike leaves from a central point.



Pinnate tansymustard seed capsules (siliques) are less than 3/4 inch long. Pedicels or stems holding seed capsules are nearly the same length as the capsule or longer.

**Dyer's woad**  
*Isatis tinctoria* L.



**Dyer's woad**  
Brassicaceae  
(Mustard family)

Dyer's woad is a winter annual, biennial or short-lived perennial; 12 to 48 inches in height. Leaves of dyer's woad are alternate, simple, petiolate, bluish-green with a whitish nerve on the upper surface of the blade. The inflorescence has a flat top, petals yellow; fruit a pod, indehiscent, black or purplish brown and one-celled, containing a single seed.

Dyer's woad was introduced from Europe. It made its first appearance in the United States in colonial times. It has a thick tap root which may exceed 5 feet in depth. Once leaves are removed mechanically, plants will regenerate from roots. Dyer's woad is first found along roadsides and disturbed sites and spreads from there to rangeland and cropland by seeds.



*Seedling plants appear in the fall and overwinter in this stage.*



*Purplish-brown seed pods containing a single seed appear near mid-summer.*

**Perennial pepperweed**  
*Lepidium latifolium* L.



## Perennial pepperweed

Brassicaceae  
(Mustard family)

This plant is a perennial, 1 to over 3 feet in height; leaves lanceolate, bright green to gray-green, entire to toothed, basal leaves larger than upper leaves; inflorescence a raceme. Flowers are white, in dense clusters near ends of branches, very small; fruit a silicle; seeds 2 per fruit, rounded, flattened, slightly hairy, about 1/16 inch long, and reddish-brown.

Perennial pepperweed is a native of southern Europe and western Asia but is now found in many parts of North America. It has been declared noxious in a number of western states. Deep-seated rootstocks make this weed difficult to control. Perennial pepperweed grows in waste places, wet areas, ditches, roadsides, and cropland. Flowering occurs from early summer to fall.

Non-standard names: broad-leaved peppergrass, tall whitetop, giant whitetop, Virginia pepperweed.



*New growth coming from the crowns with previous year's stems visible.*



*Dense flower clusters appear in early summer on perennial pepperweed.*

**Clasping pepperweed**  
*Lepidium perfoliatum* L.



## Clasping pepperweed

Brassicaceae  
(Mustard family)

This weed is a winter annual or annual, 6 to 18 inches tall, stems erect, branched at the top; leaves alternate, of two types, the lower dissected and the upper heart-shaped with a clasping base. Flowers are white to yellow with slender pedicels, in racemes. Fruit a 2-valved orbicular capsule, each containing 2 reddish-brown, somewhat rough, wing-margined seeds about 1/12 inch long.

Clasping pepperweed is a native of Europe and has become established in much of the western U.S. It grows scattered in grain fields, pastures and waste areas. Flowering and seed production occur from April to June.



*Seedlings have linear cotyledons with finely divided true leaves.*



*Upper leaves are heart-shaped, clasping the reddish-brown stems while basal leaves are finely divided.*



## Radish

*Raphanus sativus* L.



**Radish**  
Brassicaceae  
(Mustard family)

An erect branching annual, 2 to 5 feet tall with lower leaves that are pinnately divided, having a large terminal segment and are 1 to 2 inches wide and 3 to 6 inches long. Upper leaves are smaller and mostly undivided with a few small segments. Flowers are 3/4 inch wide and vary from purple to white with petals that are veined with purple to pink. Seed pods are pithy, 1 1/2 to 3 inches long and about 1/4 inch in diameter with 2 to 8 seeds per pod. Seeds are about 1/8 inch long, oval and reddish brown.

Radish is a native of Europe and is widespread in cultivated crops and waste areas in the West. It can be particularly troublesome in cereal crops. Wild radish (*R. raphanistrum* L.) usually has yellow flowers having dark veins.



*Leaves of seedlings are pinnately divided with large terminal segments.*



*Flowers showing color variation and distinctly veined petals.*

## **Tumble mustard**

*Sisymbrium altissimum* L.



**Tumble mustard**  
Brassicaceae  
(Mustard family)

Tumble mustard is a winter annual or annual, 2 to 5 feet tall; stems simple below, much branched above having a bushy appearance. Leaves alternate and of two types; lower leaves are coarse and divided into broad lobes or leaflets, the upper are much reduced, finer with narrow lobes or segments. Flowers are small, pale yellow, in racemes. Fruit a slender 2-valved capsule 2 to 4 inches long. Seeds are small, numerous, yellow to brown, oblong. They usually have a single groove.

A native of Europe, tumble mustard is now widely scattered throughout North America. It is common in small grain fields, rangeland, waste areas and along roadsides. The plant often breaks off at soil level when mature and scatters seed as it tumbles in the wind.

Non-standard name: Jim Hill mustard.



*Spatulate-shaped cotyledons are followed by slightly toothed first true leaves.*



*A seedling rosette of this winter annual has leaves similar to the basal leaves of a mature plant, leaves are deeply lobed.*

**London rocket**  
*Sisymbrium irio* L.



**London rocket**  
Brassicaceae  
(Mustard family)

London rocket, a winter annual, is erect, usually 1 1/2 to 2 feet tall. Stems and leaves are smooth. Stems are often branched. Leaves, 1 to 4 inches long, are usually deeply divided with a large terminal lobe. Flowers are small, yellow, and borne on slender stalks in small clusters at the stem tips. As early pods mature, the flowering spikes grow longer; eventually a large number of 1 1/2 to 2 1/2 inch pods are borne along the flowering stem.

The margins of the seedling's first true leaves are always indented, distinguishing seedlings of London rocket from those of shepherd's-purse.

London rocket, a European native, is common in irrigated crops, orchards and vineyards. It is also found along roadsides, fence rows, and ditches.



*London rocket seedlings have spatulate cotyledons and deeply lobed leaves.*



*Yellow flowers are borne on slender stalks in small clusters, each flower has four petals.*

**Field pennycress**  
*Thlaspi arvense* L.



**Field pennycress**  
Brassicaceae  
(Mustard family)

Field pennycress is an annual; 6 to 18 inches tall; basal leaves lanceolate, simple, entire to lobed, inflorescence a raceme. Small white 4-petal flowers are formed in early summer at the ends of branches. Petals are white, in clusters on the ends of branches; fruit a pod, circular in outline, obviously winged, rounded, deeply notched at the top, seeds 2 or more in each chamber.

Field pennycress was introduced from Europe. It is a very troublesome weed in grain fields and is also found growing in waste places, roadsides and other disturbed areas. A strong odor is associated with this plant causing dairy animals eating field pennycress to produce a bitter-flavored milk. Field pennycress flowers from late spring to early summer.

Non-standard name: fanweed.



*Ovate cotyledons are attached with long petioles followed by similarly shaped true leaves.*



*Two or more seeds are contained in each chamber of this mature pod. They are surrounded by a fan-like structure.*



**Plains pricklypear**  
*Opuntia polyacantha* Haw.



**Plains pricklypear**  
Cactaceae  
(Cactus family)

Perennial forming low, spreading, fleshy plants, commonly in clumps but can be erect to 3 feet or more in height, reproducing from stems or seeds. Stems are flat and jointed, spines  $4/5$  to  $1\ 1/5$  inches long, pale or brownish with around 9 per group. Leaves are small and scale-like on young branches, dropping early. Flowers are large; calyx tube does not extend beyond ovary; petals numerous,  $1\ 1/2$  to 2 inches long, slightly united; stamens numerous in several rows. The fruit is a pear-shaped berry either juicy or dry, often spiny. Seeds are numerous,  $2/10$  to  $3/10$  inch long, white and flattened. There are numerous species of *Opuntia* in the West.

Pricklypear is native, commonly found on dry, sandy soils. It can be troublesome on overgrazed pastures and rangelands.



*Individual plains pricklypear may be over 3 feet across with several blooms on the same plant.*



*Plains pricklypear flowers vary in color from lemon yellow to orange and are waxy in appearance with a green stigma in the center.*

**Creeping bellflower**  
*Campanula rapunculoides* L.



**Creeping bellflower**  
Campanulaceae  
(Bluebell family)

A perennial 2 to 4 feet tall spreading by deep-seated creeping roots. The erect stem is often purplish. Leafy plants are slightly hairy to smooth. Leaf blades are somewhat rough and long-ovate to lance-shaped, tapering to the point. Flowers are purple, nodding and bell-shaped, 1 inch or longer.

This is an ornamental plant, frequently escaping from gardens to become a weed problem. It spreads by seeds and creeping rootstocks and thrives in sun or shade.

Non-standard name: rover bellflower.

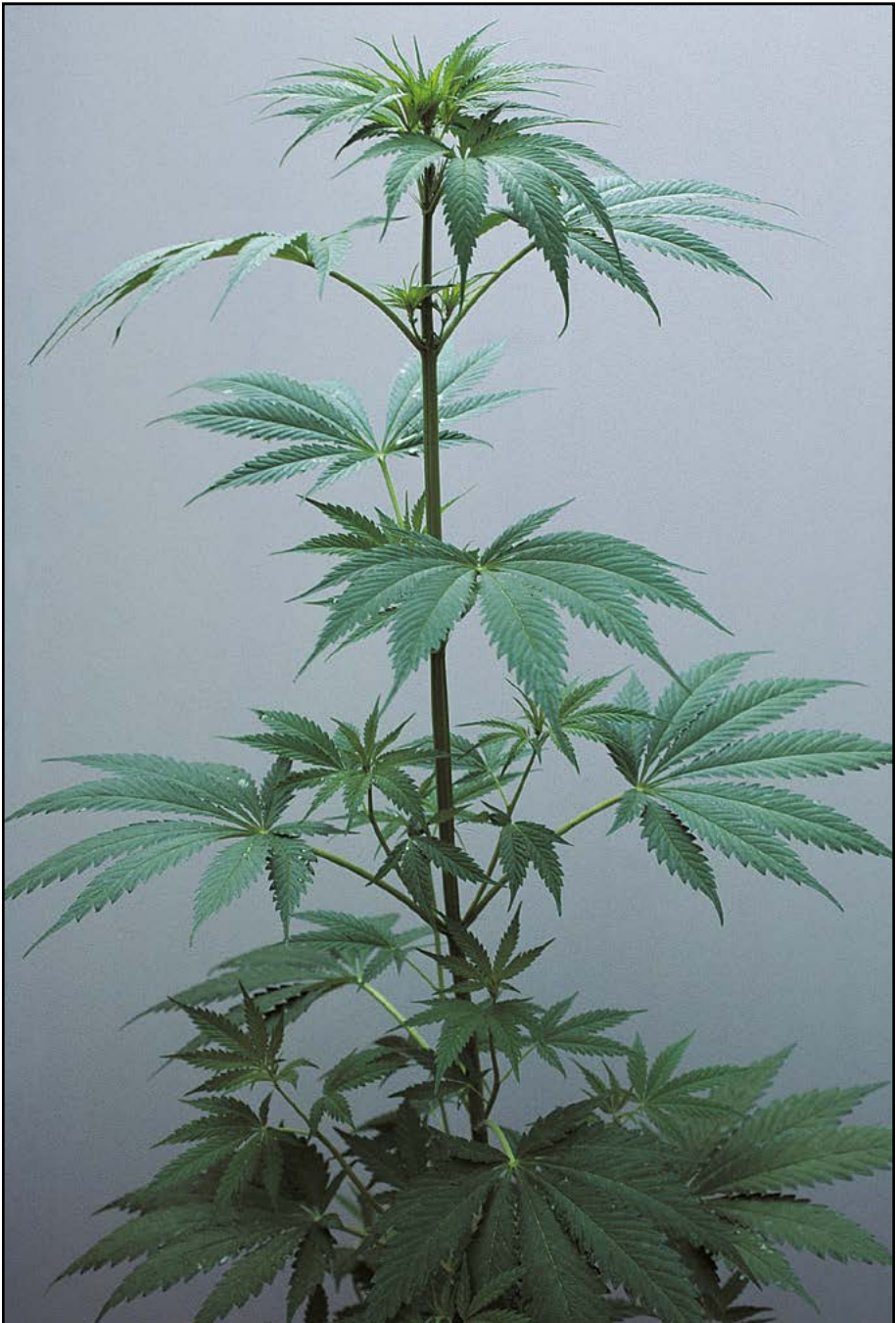


*Rough veined ovate leaves allow for easy vegetative identification.*



*Nodding bell-shaped flowers arranged on one side of the flowering stem.*

**Marijuana**  
*Cannabis sativa* L.



**Marijuana**  
Cannabaceae  
(Hemp family)

A stout, erect, branching annual, generally 3 to 10 feet tall, having a peculiar odor. Fine hair causes it to be sticky to the touch. The hollow main stem has 4 ridges lengthwise, and produces few branches near the top. Leaves are opposite below and alternate above, compound and palmate with 5 to 10 linear, lance-shaped, pointed leaflets which are deep green on the upper side and light green below, with toothed margins. Both male and female flowers are borne in leaf axils near the top of each plant. Individual plants either have male or female flowers but not both. Male flowers are often borne in loose panicles while female flowers are borne in tighter spikes. The seed is about 1/8 inch long and gray green.

Marijuana is a native of Asia and is considered a controlled substance by law enforcement officials. It contains a resin with narcotic properties. It was introduced in many areas as a crop, used for ropemaking.

Non-standard name: common hemp.



*Palmate leaves with leaflets having toothed margins.*



*Flowers are borne in leaf axils near the top of the plant.*

## Corn cockle

*Agrostemma githago* L.



**Corn cockle**  
Caryophyllaceae  
(Pink family)

A tap-rooted annual with grayish-white hairy foliage and stiff, erect stems growing 1 to 3 feet tall. Leaves are opposite, narrow, stalkless, and 2 to 5 inches long. Flowers are 1/2 inch across and showy. Sepals are hairy and slender, extending well beyond the petals. Petals, five, rose-purple, black-dotted near the base. Petal-tips are notched, broad and rounded. The fruits are about 1/2 inch long, with a toothed opening at the top to allow dissemination of the seeds.

Corn cockle is a native of Europe and has become widely distributed in grainfields, roadsides, and waste areas in some regions of the West.



*Corn cockle seedling.*



*Flowers have notched petal tips. Slender hairy sepals extend well beyond the petals.*



## Babysbreath

*Gypsophila paniculata* L.



**Babysbreath**  
Caryophyllaceae  
(Pink family)

A perennial with widely branching stems to 3 feet in height. Leaves are in pairs, 3/4 to 4 inches long with sharp points. The inflorescence is diffusely branched, flowers are 1/16 to 1/8 inch wide, with a 5-lobed calyx. Calyx lobes are purple but prominently edged in white; petals are white. The fruit is a small capsule, containing 2 to 5 black seeds, each about 1/12 inch long with a finely pebbled surface.

Babysbreath is an ornamental species that was introduced from Europe and has now escaped cultivation to pastures and rangeland in some areas. Once established, it forms dense stands and is difficult to control. Flowering occurs from June to August.



*Narrow, opposite leaves are found along the plant stems.*



*The small white flowers are useful in floral arrangements.*

**Bouncingbet**

*Saponaria officinalis* L.



**Bouncingbet**  
Caryophyllaceae  
(Pink family)

Perennial with stout, erect, smooth, branching stems, up to 3 feet tall, with swollen nodes. Leaves have three distinct veins from the base, are smooth, narrow and 2 to 4 inches long with short petioles. Flowers are conspicuous, and crowded at ends of the main stem and branches, with petals that are generally pink and are slightly notched at the apex.

Introduced from Europe as a garden plant and now escaped and established as a weed in the region. It is poisonous but rarely grazed. However, it spreads rapidly and replaces plants of greater value.

Non-standard name: soapwort.



*Opposite leaves originate from slightly swollen nodes.*



*Flowers with notched petals are crowded at the end of the main stem and branches.*

**White campion**  
*Silene latifolia* Poir.



**White campion**  
Caryophyllaceae  
(Pink family)

White campion is a short-lived perennial or biennial, 1 1/2 to 3 1/2 feet tall. Pointed leaves are opposite and linear, about 3/4 inch wide and 1 to 4 inches long. Flowers, 3/4 inch wide, are borne in open clusters on the ends of plant stems. They have 5 deeply notched, white petals. Fragrant flowers open in the evening but close by noon. Numerous rough seeds are contained by a bulb-like pod about 3/8 inch long.

Sleepy catchfly (*S. antirrhina* L.) looks similar but has downward-pointed hairs on the lower stem with no hairs on upper stems.

Unlike a close relative, bladder campion, it reproduces only by seeds, yet it is often troublesome in cultivated fields. Its seed is difficult to separate from commercially produced clover or alfalfa seed. It is considered a naturalized plant and is common throughout North America and Europe.



*Cotyledon leaves are oval to egg-shaped and are glandular. True leaves are covered with stiff hairs.*



*Flowers, usually opening in the evening, are located on ends of stems.*

**Cone catchfly**

*Silene conoidea* L.



**Cone catchfly**  
Caryophyllaceae  
(Pink family)

A simple or branched annual or winter annual 1 to 2 1/2 feet tall. Plants are usually covered with sticky gland-tipped hairs. Leaves are linear, slender, and pointed, opposite, with bases joined on the stem. Flowers have 5 pink, purplish, or white petals with rounded, lightly-toothed margins. The 5-pointed, urn-shaped calyx, with 25 to 30 obvious nerves, inflates up to 3/4 inch wide.

Cone catchfly was introduced from the Old World. It is found in fields, along roadsides, and in other disturbed sites.



*Cone catchfly seedling. Cotyledons are lanceolate and pubescent as are first true leaves.*



*Urn-shaped, many-ribbed calyx is covered with short sticky hairs.*



**Bladder campion**

*Silene vulgaris* (Moench) Garcke



**Bladder campion**  
Caryophyllaceae  
(Pink family)

Perennial with woody rootstocks; stems branching, smooth. Leaves smooth, ovate or lance-shaped, the margins generally not toothed. Flowers are found in clusters at ends of branches, each flower white, and about 1/2 inch wide, on a slender stalk. Calyx at first slender, becoming greatly inflated, thin, veiny, and often purplish as the fruit matures, eventually becoming a veiny, papery sac-like structure surrounding the bulbous fruit. Fruit opens at the toothed top to allow escape of numerous small, grayish, pebbled seeds. White campion (*Silene latifolia* Poir.) is an annual or short-lived perennial that is similar but is more or less hairy and dioecious.

Bladder campion was introduced from Europe and has become a serious problem in certain seed crops because the seeds are difficult to separate from crop seeds.



*The inflated calyx of bladder campion.*



*White campion, a similar species, has male (left) and female (right) flowers on different plants, is hairy and the calyx is less inflated.*

**Corn spurry**  
*Spergula arvensis* L.



**Corn spurry**  
Caryophyllaceae  
(Pink family)

An annual that is much branched at the base, the branches 1/2 to 2 feet long, somewhat sticky, erect or more or less spreading. Leaves are narrow, cord-like and fleshy, arranged in a series of apparent whorls at the nodes. Flowers, less than 1/4 inch wide, are white, and in loose clusters at ends of the branches. Fruit, 1/4 inch long, contain seeds that are somewhat flattened, dull black, usually with minute whitish warts and a circular whitish wing.

Naturalized from Europe, corn spurry is found in the West.

Non-standard names: stickwort, starwort.

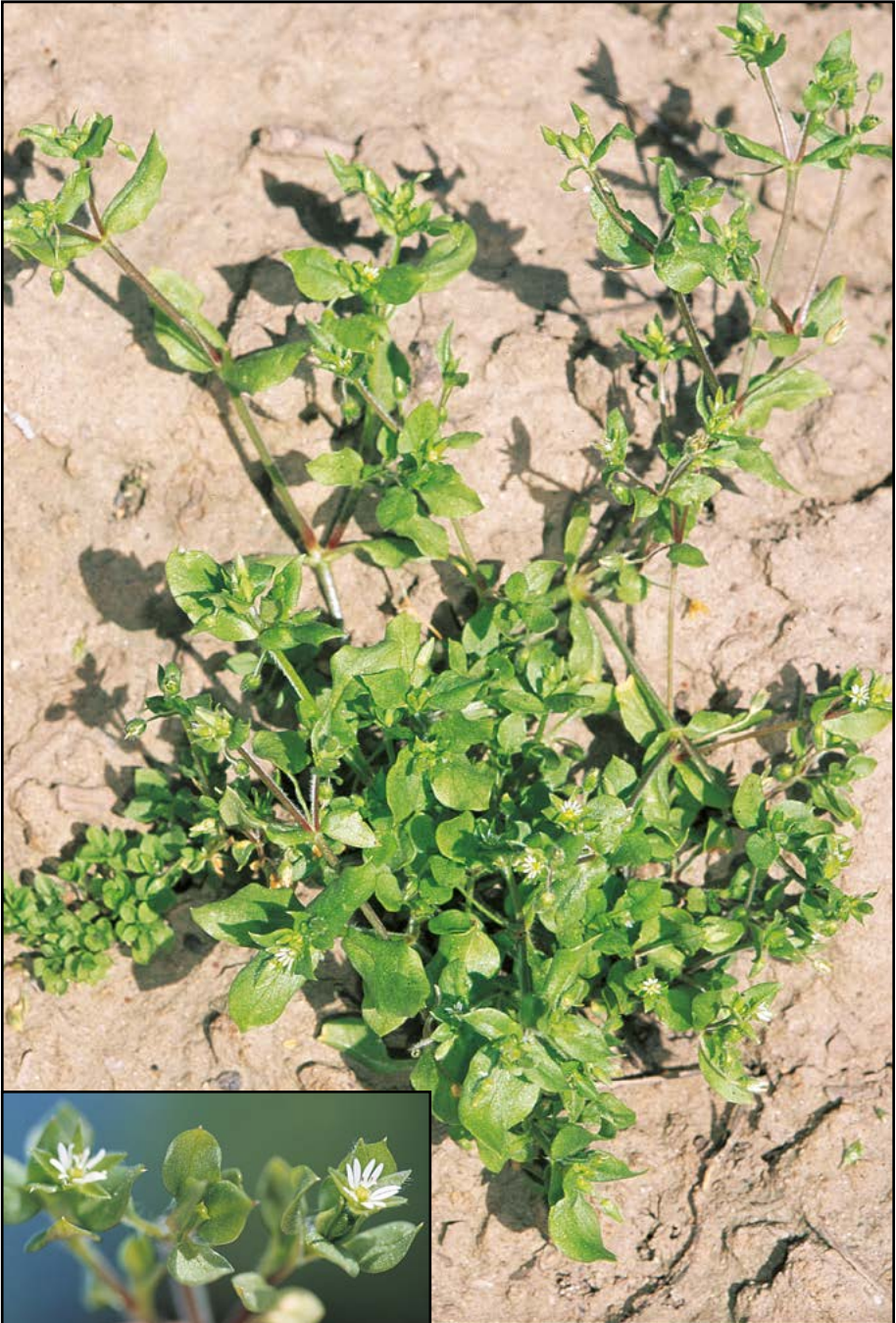


*Stems with whorls of slender fleshy leaves.*



*White, terminal flowers less than 1/4 inch wide of corn spurry.*

**Common chickweed**  
*Stellaria media* (L.) Vill.



## Common chickweed

Caryophyllaceae  
(Pink family)

Annual or winter annual reproducing by seeds and creeping stems that root at the nodes. Stems with numerous branches and a conspicuous line of hairs on one side, are sometimes ascending but commonly prostrate, forming mats of plants 4 to 12 inches high. Leaves up to 1 1/2 inches long, upper leaves without petioles, lower petioled and often hairy toward base or on petiole. Flowers about 1/4 inch across, white, with petals deeply 2-parted, shorter than sepals (see insert opposite page).

Several chickweeds in the genus *Cerastium* are found world-wide and differ from common chickweed in being more or less hairy all over. Field chickweed (*C. arvense* L.) and mouseear chickweed (*Cerastium fontanum* ssp. *vulgare* (Hartman) Greuter & Burdet) are perennials. Sticky chickweed (*Cerastium glomeratum* Thuill., also called *C. glomeratum* Thuill.) is an annual.

Chickweeds are weedy in fields, also gardens, lawns, and ornamental plantings.



Spatulate cotyledons and petioled ovate true leaves.



The hairy leaf may vary in size but is typical of the chickweeds in the genus *Cerastium*.

**Cowcockle**

*Vaccaria hispanica* (P. Mill.) Rauschert



**Cowcockle**  
Caryophyllaceae  
(Pink family)

A gray-green, tap-rooted, annual growing 1 1/2 to 3 feet tall. Stems are much-branched, with each branch ending in a flower. Leaves are smooth, narrow to broad, lance-shaped, opposite, and somewhat clasping around the stem. Flowers are small, but conspicuous, with 5 toothed pink or red petals. The smooth inflated calyx is strongly 5-angled, with green or purplish veins. Fruits remain in the calyx at maturity. Seeds are gray with a pebbled surface.

Cowcockle is a European weed that inhabits foothills, roadsides, waste areas, and cropland. The seeds are poisonous to livestock.

Synonyms include: *V. segetalis* (Neck.) Garcke ex Asch., *Saponaria vaccaria* L.  
Non-standard name: cowherb.



*Cowcockle seedling showing typical lance-shaped leaves.*



*Flower petals are pink with a notched tip. The calyx is smooth and strongly 5-angled when viewed in cross section.*



**Netseed lambsquarters**  
*Chenopodium berlandieri* Moq.



**Netseed lambsquarters**  
Chenopodiaceae  
(Goosefoot family)

Extremely variable annual, 1 to 6 feet tall, stems erect, much branched and often striped with pink or purple; leaves alternate, the lower often wavy margined to somewhat lobed, the upper narrower and often entire, undersurface white to grayish-mealy. Flowers are small, inconspicuous, greenish-gray, mealy, crowded in axils and at tips and branches of stem, calyx strongly keeled, seeds numerous, dark gray to black with a honeycombed surface.

Netseed lambsquarters is common in cultivated fields, gardens, and waste areas. It is a very competitive weed because of its rapid growth and high water use. Lambsquarters also serves as a host for the beet leafhopper which transmits curly top virus to sugarbeets. Netseed lambsquarters is often eaten in salad or as greens when the plant is young and tender. Flowering and seed production may occur from July to September. Common lambsquarters, *C. album* L., a native of Europe, has become established throughout most of North America. It can be distinguished by its shiny black seeds and its calyx is not keeled.



*Seedling showing strap-shaped cotyledons. Leaves and cotyledons are covered with silvery glands.*



*Seedling showing mealy leaf surface and purplish tinged leaves with slightly undulated margins.*

**Nettleleaf goosefoot**  
*Chenopodium murale* L.



**Nettleleaf goosefoot**  
Chenopodiaceae  
(Goosefoot family)

A bushy annual 1 to 3 feet high with stems that are erect or lateral and then erect. The leaves are 1 to 2 inches long, alternate, pointed at the tip with 1 to 8 irregular teeth along each margin, having the general outline of a "goose's foot." The upper surface of the leaf is dark green while the lower surface and younger plant parts have a lighter mealy appearance. Flowers are small and greenish, borne in dense axillary or terminal spike-like panicles. Seeds are tiny, dull black and disc-shaped, enclosed by a thin papery fruit wall and about 1/18 inch across.

Nettleleaf goosefoot was introduced from Europe and is now widespread throughout the United States and southern Canada. It is a common weed in cultivated fields, gardens and waste areas.



*Seedlings have linear cotyledons, while true leaves are dark green with shiny glands and distinct veins.*



*Small, greenish flowers are borne in a dense terminal inflorescence, surrounded by oblanceolate dark green leaves.*

## **Halogeton**

*Halogeton glomeratus* (Stephen ex Bieb.) C.A. Mey.



**Halogeton**  
Chenopodiaceae  
(Goosefoot family)

An annual weed ranging in height from a few inches to over 18 inches. Main stems branch from the base, spreading at first, and then becoming erect. Plants are blue-green in the spring and early summer, turning red or yellow by late summer. Leaves are small, fleshy, and nearly tubular, ending abruptly, tipped with a delicate needle-like spine. Flowers are green and inconspicuous, borne in leaf axils. Plants resemble Russian thistle in early stages but they can be distinguished by leaf shape, and by the presence of minute cottony hairs in the leaf axils.

Halogeton is a native of Asia that has rapidly invaded millions of acres in the western states. It seems ideally adapted to the alkaline soils and semi-arid environment of high-desert winter livestock ranges. Halogeton is not an extremely competitive plant, but it readily invades disturbed or over-grazed lands. It is usually most concentrated along roadsides, sheep trails and near areas where livestock congregate. The plant produces toxic oxalates that are especially poisonous to sheep, though cattle may also be affected. Halogeton is readily grazed at times, and is responsible for thousands of livestock poisonings.



*Fleshy leaves terminating with a needle-like structure are connected to a red colored stem.*



*Cream-colored flowers borne in leaf axils in the fall surround each plant stem.*

## Kochia

*Kochia scoparia* (L.) Schrad.



**Kochia**  
Chenopodiaceae  
(Goosefoot family)

Annual, 1 to 6 feet tall, stems much branched, round, slender, usually soft-hairy, but occasionally smooth, often red-tinged. Leaves alternate, lance-shaped, entire 1/2 to 2 inches long, margins fringed with hairs; the upper surface is usually smooth, the lower surface usually covered with soft hairs; leaf blades with 3 or 5 prominent veins. Flowers are inconspicuous, sessile in the axils of upper leaves and form short, dense, bracted spikes. Seed wedge-shaped, dull brown, slightly ribbed and approximately 1/16 inch long.

Native of Asia, introduced from Europe, kochia has escaped from cultivation as an ornamental and is now found throughout North America. It is common in cultivated fields, gardens, roadsides, ditchbanks and waste areas throughout the West. While it is usually considered an objectionable weed, kochia is readily grazed by livestock. It sometimes contains high nitrate levels and can be toxic. Flowering and seed production may occur from July to October.

Five-hook or bassia (*Bassia hyssopifolia* (Pallas) Kuntze), is easily distinguished from kochia by the 5 hooked structures on each seed.



Seedlings of kochia emerge in very early spring, are often hairy with alternate leaf distribution surrounding the stem.



Flowers are inconspicuous, forming dense spikes in leaf axils.



**Russian thistle**  
*Salsola tragus* L.



**Russian thistle**  
Chenopodiaceae  
(Goosefoot family)

A rounded, bushy, much branched annual, 1/2 to 3 feet tall, reproducing by seed. Stems are usually red or purple striped. Leaves are alternate; the first are long, string-like and soft, with later leaves short, scale-like and tipped with a stiff spine. Inconspicuous green flowers are borne in axils of upper leaves, each flower accompanied by a pair of spiny bracts.

Seeds are spread as mature plants break off at ground level and are scattered by the wind as tumbleweeds. Rapid germination and seedling establishment occur after only brief and limited amounts of precipitation. Since Russian thistle was introduced (from Russia) in the late 1800s, it has become one of the most common and troublesome weeds in the drier regions of North America. It is well adapted to cultivated dryland agriculture, but is also found on disturbed wastelands, overgrazed rangeland, and even some irrigated cropland. Barbwire Russian thistle (*S. paulsenii* Litv.) is similar in overall appearance but is generally more coarse and robust, with broader and more rigid spine-tipped leaves.

Synonyms include: *S. kali* L., *S. kali* L. var. *tenuifolia* Tausch, *S. kali* L. var. *ruthenica* (Iljin) Soo, and *S. pestifer* A. Nels. Non-standard name: tumbleweed.



Seedling plants have long, fleshy leaves.



Stems are striped with purple at most growth stages. Flowers are found in leaf axils at maturity.

**Greasewood**

*Sarcobatus vermiculatus* (Hook.) Torr.



## Greasewood

Chenopodiaceae  
(Goosefoot family)

A native perennial shrub becoming a dominant species on saline alkaline flood plains. This woody species has rigid stems that are white to gray, growing over 7 feet tall. Linear round leaves are pale green, usually less than 1 inch long and attached without a petiole to a woody stem. Flowers appearing in late summer are yellow, inconspicuous, with female flowers located below male flowers on the same plant. The plant starts growth in early spring and loses its leaves after frost. This plant readily resprouts after fire or other disturbances. Stems splinter when broken, which can cause injury to animal digestive systems, or potential flat tires!

Greasewood is a moderately poisonous plant if consumed in large amounts by sheep and cattle. Sheep are often poisoned in the fall from eating large amounts of fallen leaves. Toxicity increases as the plants mature. Leaves contain oxalates of potassium and sodium which cause death of livestock in 4 to 6 hours after they have been consumed. Sheep may die after eating up to 2 pounds of leaves while cattle need to consume 3 to 4 pounds for death to occur.



*Young greasewood plants have fleshy leaves that are individually connected to white woody stems.*



*In late summer, flowers appear inconspicuously.*

**Common St. Johnswort**  
*Hypericum perforatum* L.



**Common St. Johnswort**  
Clusiaceae  
(St. Johnswort family)

A perennial reproducing by seeds or short runners. Stems are 1 to 3 feet high, erect, with numerous branches, somewhat 2-ridged, rust-colored, woody at their base. Leaves are opposite, sessile, entire, elliptic to oblong, not over 1 inch long, covered with transparent dots. Flowers are 3/4 inch in diameter, bright yellow, numerous in flat-topped cymes, with 5 separate petals with occasional minute black dots around the edges. Petals are twice as long as the sepals. Stamens are numerous, arranged in 3 groups. Seed pods are 1/4 inch long, rust-brown, 3-celled capsules, each with numerous seeds.

St. Johnswort, originally from Europe, is frequently found in the Pacific Northwest, on sandy or gravelly soils. The weed contains a toxic substance which affects white-haired animals. Affected animals rarely die, but will often lose weight and develop a skin irritation when exposed to strong sunlight.

Clusiaceae synonym: Hypericaceae.  
Non-standard name: Klamath weed.



*Leaves of St. Johnswort are oval in shape with prominent veins. Tiny transparent dots are visible when leaves are held up to a light source.*



*Yellow flowers with 5 petals and many stamens appear in early summer.*

**Hedge bindweed**

*Calystegia sepium* (L.) R. Br.



**Hedge bindweed**  
Convolvulaceae  
(Morningglory family)

Perennial from elongated rhizomes with stems trailing or climbing, up to 9 feet or more in length. Leaves are alternate, long-stalked, the leaf blades 1 to 5 inches long, and generally heart-shaped with basal lobes that are rounded or variously angled but do not flare out. Flowers are generally solitary in the leaf axils, trumpet-shaped, white to deep pink, and 1 to 3 inches long. The fruit are nearly round, about 3/8 inch long, splitting at maturity to release 2 to 4 seeds. Seeds are dull gray to brown or black and minutely roughened.

Hedge bindweed is native to the eastern U.S., but is now widely distributed. It presents problems in fence rows and ornamental planting where it climbs and spreads over shrubbery and other ornamentals and is difficult to control.

Synonym: *Convolvulus sepium* L.

Non-standard names: lady's nightcap, bell-bind, Rutland beauty.



*Cotyledon leaves of hedge bindweed.*



*Large bracts enclosing the base of the flower distinguish this species from field bindweed which has 2 minute bracts on the flower stem.*



**Field bindweed**  
*Convolvulus arvensis* L.



**Field bindweed**  
Convolvulaceae  
(Morningglory family)

Field bindweed is a perennial from an extensive root system, often climbing or forming dense tangled mats. Stems are prostrate, 1 to 4 feet long. Leaves alternate, more or less arrowhead-shaped, pointed or blunt lobes at the base. The flowers are bell- or trumpet-shaped, white to pinkish, approximately 1 inch in diameter with 2 small bracts located 1 inch below the flower. Fruit is a small, round capsule, usually 4-seeded.

Field bindweed was introduced from Europe and has become a widespread and serious weed problem in all parts of the U.S. except the southeastern states. In the western United States, it is extensively distributed in cultivated fields and waste places. Because of its remarkable adaptability to different environmental conditions, it may be found at altitudes as high as 10,000 feet. It is a difficult weed to eradicate because of a root system that can penetrate the soil to a depth of 20 feet and which gives rise to numerous long lateral roots. Seeds remain viable for up to 50 years. The flowering period is from late June until frost in the fall.

Non-standard names: creeping jenny, wild morningglory, perennial morningglory.



*Seedlings have ovate cotyledons with a notched apex. True leaves are heart-shaped at the base with a spatulate shape.*



*Flowers are funnel-shaped and vary in color from white to pink. Note tiny bracts 1 inch below base of flower.*

**Dodder**  
*Cuscuta* spp.



## Dodder Cuscutaceae (Morningglory family)

This parasitic annual lacks chlorophyll. Stems are yellowish, thread-like and twining, leaves are reduced to thread-like scales. Flowers are numerous in compact clusters, 5-parted and shallowly cupped, white to pink. Fruit is a 2- to 4-seeded globular capsule which is somewhat depressed on the top. Seeds are small, oval, gray to red and 1/25 inch in length.

Dodder is widely distributed over much of North America with several species present in the West. Largeseed dodder (*C. indecora* Choisy) and field dodder (*C. pentagona* Engelm.) are the major problem species in the West. Dodder seeds germinate on the soil surface and the resulting plant develops a small root system and 2- to 4-inch long thread-like stalk which attaches to green plants. Once attached, the root system disappears and the dodder becomes wholly parasitic. Many broadleaf plants serve as hosts for this parasite, but alfalfa, clover, tomatoes, potatoes, and safflower are especially susceptible. Dodder seeds are fairly long-lived in the soil and infestation may occur in areas where host plants were not grown for several years. Flowering period is July to October.



Seeds of field dodder germinate in early spring and seedlings quickly attach to host plants to obtain food supplies.



This parasitic annual attaches to alfalfa and produces clusters of flowers in late summer.

**Red morningglory**  
*Ipomoea coccinea* L.



**Red morningglory**  
Convolvulaceae  
(Morningglory family)

Red morningglory is a vining or twining hairless annual with reddish, ridged stems. Leaves are alternate, on petioles 1 to 4 inches long, with 2 principle shapes. On some plants the leaves are unlobed with a heart-shaped base, usually 1 1/2 to 2 1/2 inches long, and conspicuously long-pointed. On other plants, some or all of the leaves are deeply cut into 3 to 5 finger-like lobes. Flowers are scarlet red and narrowly trumpet-shaped, 1 to 1 1/4 inches long. Two to several flowers are borne on a 3- to 5-inch stalk arising from the leaf axils. The globe-shaped seedpod is plump, somewhat egg-shaped, but angular, and about 1/8 inch long.

Red morningglory is native in the southwestern United States and tropical America.

Non-standard names: scarlet morningglory, starglory.



*The leaf shape of red morningglory varies from unlobed to multi-lobed.*



*Flowers of red morningglory are narrowly trumpet-shaped and scarlet red in color.*

**Ivyleaf and Tall morningglory**

*Ipomoea hederacea* Jacq. and *I. purpurea* (L.) Roth



## Ivyleaf and Tall morningglory

Convolvulaceae  
(Morningglory family)

Both species are annuals, often cultivated as ornamentals. Ivyleaf morningglory has a taproot with leaves that vary in shape, from heart-shaped to commonly three-lobes to five-lobes. Tall morningglory has a fibrous root with all its leaves heart-shaped. Flowers of both species vary from whitish to blue or purple with a conspicuously hairy calyx.

Both species are native of tropical America and are commonly found throughout the southwestern United States.

Photo on adjacent page is of tall morningglory, showing the heart-shaped leaves.



*Ivyleaf morningglory leaves are 3-lobed but have variations which range from heart-shaped to 5-lobed.*



*Ivyleaf morningglory flowers are blue, purple, and even white.*



**Ivy gourd**

*Coccinia grandis* (L.) J. Voigt



**Ivy gourd**  
Cucurbitaceae  
(Cucumber family)

Ivy gourd is a climbing perennial with tendrils and a tuberous root system. Leaves are simple, up to 4 inches wide and long and can vary from being several-angled to deeply palmately lobed. Flowers are white, and dioecious. Mature fruits contain numerous seeds, are red, oblong, and 2 to 3 inches long.

Probably introduced as an ornamental, ivy gourd is a vigorous vine that is found in Hawaii throughout the lowlands of the island of Oahu, and in the Kona District on the island of Hawaii. It climbs over shrubs and trees, forming a dense, sun-blocking canopy. Seed dispersal is attributed to birds that feed on the red fruits. Ivy gourd is reportedly used for food or medicinal purposes in southeast Asia and India.



*Several-angled leaves up to 4 inches long and wide and flowers up to 3 inches long are formed on ivy gourd.*



*Oblong fruits contain many seeds and often plants have tendrils.*

**Western wildcucumber**

*Marah oreganus* (Torr. ex S. Wats.) T.J. Howell



## Western wildcucumber Cucurbitaceae (Cucumber family)

A perennial regenerating from an enormous woody taproot. The stem is long, thick, angled, and trailing or climbing. Leaves are stalked, blades lobed, roughened, and sometimes reaching 6 inches or more in length and width. Flowers are waxy-white and somewhat star-shaped. The fruit is gourd-like, several inches long, beaked at the apex, somewhat football-shaped, fleshy at first and somewhat spiny. Western wildcucumber is native to the western U.S. and Canada. It occurs along roadsides and fence rows as well as in open fields and waste areas.

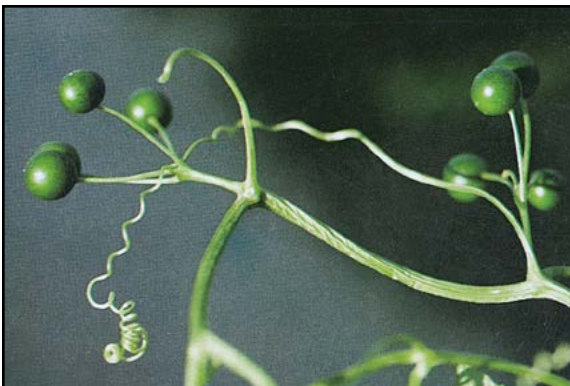
At least two other related climbing vines occur in the western U.S. Annual wildcucumber (*Echinocystis lobata* (Michx.) Torr. & Gray), also known as balsam apple, has fruits that are more round and have more spines than fruits of the perennial western wildcucumber. Annual wildcucumber lacks an enlarged taproot. White bryony (*Bryonia alba*) is a perennial with a large taproot. Leaves are five-lobed, and tendrils are unbranched. Bryony fruits develop as clusters of smooth round berries, which change from green to black at maturity.

Synonym: *Echinocystis oregana* Cogn.

Non-standard names: bigroot, manroot, old-man-in-the-ground.



Fruits of annual wildcucumber.



Berry-like fruits of white bryony.

**Yellow nutsedge**  
*Cyperus esculentus* L.



## Yellow nutsedge Cyperaceae (Sedge family)

Yellow nutsedge is an aggressive perennial superficially resembling a grass. Plants range from 6 to 30 inches tall, with 3-ranked leaves, and 3-angled (triangular in cross section) pithy stems. True leaves originate from the base of each stem, while long leaf-like bracts radiate out from a common point just below the umbrella-like flower cluster; otherwise, stems are naked. Leaves and stems have a waxy or shiny appearance. Spikelets are yellowish-brown, and are borne on the ends of several to many slender branches of unequal length. Yellow nutsedge can spread by seed, creeping rootstocks, or by small underground nutlets. The many hard brown nutlets (1/2 to 3/4 inch long) may lie dormant in the soil for several years before producing new plants.

Yellow nutsedge was probably introduced from the Old World, and has now invaded cultivated agricultural lands throughout North America. It prefers moist soils, becoming most troublesome in potatoes, beans, corn, gardens and ornamentals. *Cyperus* is a genus of some 600 species, but yellow and purple nutsedge are the primary weedy sedges in our region.



*Immature plants have 3-ranked leaves, a characteristic unlike grasses which are 2-ranked.*



*Underground nutlets often propagate new plants in cultivated areas.*

**Purple nutsedge**  
*Cyperus rotundus* L.



## Purple nutsedge Cyperaceae (Sedge family)

A spreading perennial with upright stems 1 to 2 feet high. Leaves are 3-ranked and grass-like, 1/8 to 1/3 inch wide and 2 to 6 inches in length. Flower stems are 3-cornered and generally longer than the basal leaves. Leaf-like bracts subtending the inflorescence are shorter than the inflorescence itself which consists of numerous purplish spikelets. The underground tubers or nutlets are oblong and covered by persistent reddish scales and are often formed in chains while tubers of yellow nutsedge (*C. esculentus* L.) are almost smooth, rounder and are usually formed at the tip of numerous rhizomes.

Purple nutsedge was imported from Europe and thrives in moist conditions in sandy soil. It is commonly found in Arizona and southern California, in turf, ornamental areas, cultivated fields and ditch banks.



*Inflorescence of purple nutsedge (left) has subtending leaf-like bracts which are shorter than the inflorescence itself. Yellow nutsedge with its longer subtending bracts is pictured right.*



*Tubers and subsequently generated new plants of purple nutsedge are formed in chains (left). Yellow nutsedge tubers are larger and formed at the end of numerous rhizomes (right).*



**Green kyllinga**  
*Kyllinga brevifolia* Rottb.



**Green kyllinga**  
Cyperaceae  
(Sedge family)

A rhizomatous, perennial sedge. When left unmowed, it can reach a height of about 15 inches, however, once established, can survive mowing heights of 1/2 inch. At every rhizome node, green kyllinga roots and sends out a new shoot. Leaves are long and narrow, ranging from one to more than five inches in length. Flowering stalks are triangular in cross section and are generally two to eight inches in length. The flowering stalks terminate in a globular inflorescence. The inflorescence is green, 1/4 inch in diameter, globe-shaped and subtended by a group of three leaves. There are 30 to 75 spikelets within each inflorescence, each producing one seed. In contrast to yellow and purple nutsedge, green kyllinga seed is oval, flat in cross section (about 1/8 inch long and 1/16 inch wide). Kyllinga is becoming a major problem in turf and ornamental plantings in the southwestern U.S., and Hawaii.



*The rhizomes of green kyllinga grow rapidly in summer months, forming a dense mat, rooting and sending up new shoots at each node.*



*Globe-shaped seedhead of green kyllinga is subtended by 3 leaves.*

**Western brackenfern**

*Pteridium aquilinum* var. *pubescens* Underw.



## Western brackenfern Dennstaedtiaceae (Fern family)

Coarse, medium-sized to large perennial ferns, 1 1/2 to 6 feet tall, with branched, creeping, woody rhizomes. Fronds are leathery, pinnate to decompound and densely hairy on the underside. Brown spores are borne along the undersurface edge of each frond segment, and are protected by a narrowly inrolled leaf margin. Newly emerging unrolled fronds appear as fiddleheads in the spring.

*Pteridium* is distinguished from other fern genera primarily by the fact that its rhizomes have no scales. Other genera will have scales, or scales and hairs on rhizomes. Brackenfern is a native species found throughout most of the West. It is most likely to occur in open woods or mountains where soil pH is neutral or acidic. It is not generally considered aggressive, but it is included for its potential to cause livestock poisoning. Poisoning in horses and sheep appears to be cumulative, and symptoms may not be evident until some time after initial feeding. A second variety without hair, eastern brackenfern (*Pteridium aquilinum* (L.) Kuhn var. *latiusculum* (Desv.) Underw. ex A. Heller), is also found in Colorado and Wyoming.

Synonym of Dennstaedtiaceae: Polypodiaceae.



*Fronds (fern leaves) have a knobby appearance in early spring as they develop.*



*The underside of compound fronds are hairy, developing reddish-brown reproductive spores in late summer.*

**Common teasel**  
*Dipsacus fullonum* L.



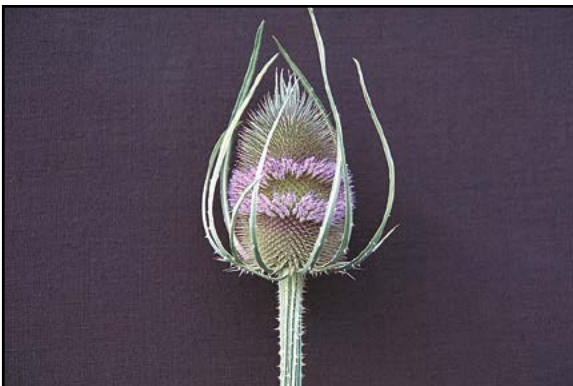
**Common teasel**  
Dipsacaceae  
(Teasel family)

Teasel is a stout, taprooted biennial which grows to 6 feet tall, branched above. The stem is striate-angled with several rows of downward turned prickles. Leaves are conspicuously veined, with stiff prickles on the lower midrib. The basal rosette of leaves usually dies early in the second season. Stem leaves lanceolate up to 10 inches long, the opposite leaves of the stem have fused bases which trap rain water. Flowers are purple, borne in dense heads, each flower subtended by spine-like bractlets. Corolla is 4-lobed. Involucral bracts at the base of the head are generally longer than the head. Fruits are 4-angled, each with a single seed.

Common teasel is a native of Europe, now widespread as a weed in North America. It is spreading rapidly in the Pacific Northwest, in moist sites, especially along irrigation ditches, canals and disturbed sites. In the fall the stems and fruiting heads are commonly silvered or gilded for winter bouquets. Flowering occurs from July to August.



*Teasel is a biennial plant producing a rosette the first year. It has a wrinkled appearance and spines on the midrib of the leaf.*



*In the second year of the growth cycle, teasel produces spiny heads often reaching lengths over 2 inches. Purple flowers are protected by spine-like bractlets.*

**Russian-olive**

*Elaeagnus angustifolia* L.



**Russian-olive**  
Elaeagnaceae  
(Oleaster family)

A fast-growing tree of moderate size, normally reaching heights from 10 to 25 feet. Trunks and branches are armed with 1- to 2-inch woody thorns. Leaves are narrow, 2 to 3 inches long, and covered with minute scales which give the foliage a distinctive silvery appearance. Scales are usually more abundant on the underside of leaves. Flowers are yellow, and arranged in clusters. Fruits, shaped like small olives, are silvery when first formed, but turn tan to brown at maturity.

Introduced from Europe, Russian-olive is promoted as a desirable ornamental shade tree, and is recognized as a source of food and protection for wildlife. However, when allowed to invade low-lying pastures, meadows, or waterways it can become a serious weed problem.



*Leaves are silvery, especially on the lower surface. Woody stems are often reddish brown.*



*Stems have stiff woody thorns. Fruits resemble small tan or silvery olives.*



**Field horsetail**

*Equisetum arvense* L.



**Field horsetail**  
Equisetaceae  
(Horsetail family)

A perennial with aerial stems and underground tuber-bearing rootstocks. Field horsetail has dimorphic stems: a fertile cone-bearing stem which arises in early spring is flesh-colored and 1/2 to 1 foot tall with cones 3/4 to 1 1/2 inches long; a sterile or vegetative stem arises after the fertile stem and is 1 1/5 to 2 feet tall with many whorls of slender, green jointed branches. Giant horsetail (*E. telmateia* Ehrh.) resembles field horsetail but is much more robust with sterile stems over 1 1/2 feet high and cones which are 1 1/2 to 4 inches long.

Both species are native and common in areas with high water tables.

Non-standard name: jointgrass.



*Tall, robust sterile stems of giant horsetail.*



*Green, tall sterile stems and shorter cone-bearing fertile stems of giant horsetail.*

**Smooth scouringrush**  
*Equisetum laevigatum* A. Braun



## Smooth scouringrush

Equisetaceae  
(Horsetail family)

A tenacious perennial plant with deep, spreading rootstocks. Stems are rough (high silica content), jointed and hollow. Leaves are scale-like appendages located at stem nodes. Fertile stems have a terminal spore-producing cone. Several species of *Equisetum* are found in the West, including field horsetail (*E. arvense* L.), and scouringrush (*E. hyemale* L.). Field horsetail produces whorls of branches at each stem node while scouringrush is coarse with evergreen stems and very apparent bands at the base of each collar.

Field horsetail is adapted to wet areas, while scouringrush can be found either along streambanks and or in relatively dry soils. *Equisetum* can create serious maintenance problems along highway rights-of-way and irrigation waterways; and is difficult to control in cropland. At least some species within this genus are poisonous to livestock, affecting primarily horses and cattle.



*Reproductive spore producing cones develop in July and August.*



*Rigid hollow stems are segmented and are easily pulled apart at nodes.*

**Spotted spurge**

*Chamaesyce maculata* (L.) Small



**Spotted spurge**  
Euphorbiaceae  
(Spurge family)

Prostrate annuals, often forming a dense mat, with dark green opposite leaves, 1/8 to 1/2 inch long and 1/8 inch wide. Stems exude a milky latex juice when broken. The tiny pinkish flowers consist only of stamens and pistils and are grouped into small flower-like clusters in the leaf axils. The 3-lobed seedpods are 1/16 inch or less long. The oblong seeds are about 1/25 inch long.

There are three commonly found prostrate spurge species in western North America. Prostrate and spotted spurge are currently classified as the same species (*C. maculata* L.). They have hairy stems and leaves. Spotted spurge has a large purple spot on each leaf while prostrate spurge does not. Ridge-seeded spurge (*Chamaesyce glyptosperma* (Engelm.) Small) has entire leaf margins with smooth stems and leaves and seeds which are coarsely transcorrugated. Creeping spurge (*Chamaesyce serpens* (Kunth) Small) has somewhat smaller, rounded, gray-green leaves. It roots at the stem nodes.

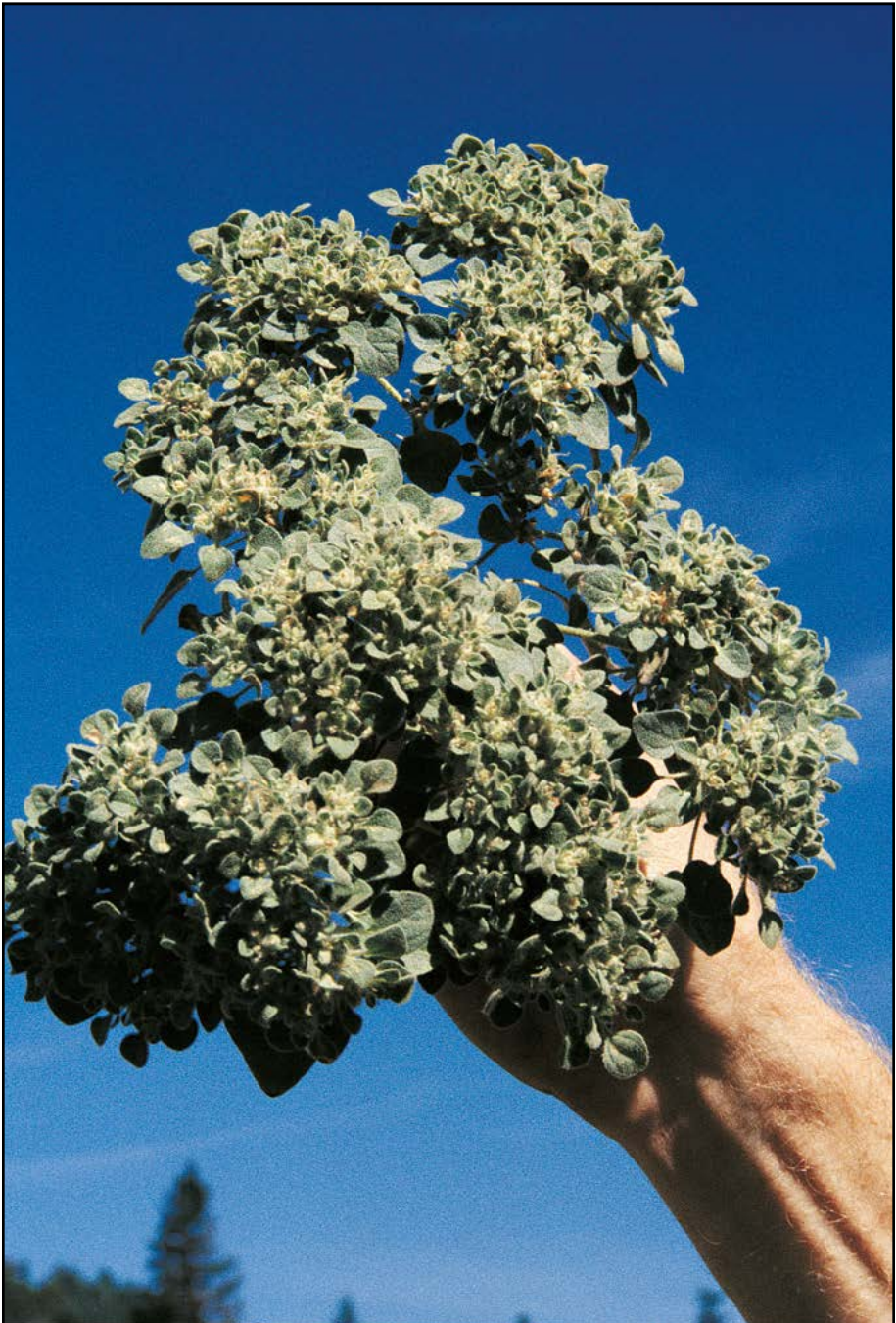


*Spotted spurge has a purple spot on each leaf.*



*All prostrate spurge plants contain milky juice as shown. Tiny pinkish flowers are grouped into clusters in the leaf axils.*

**Turkey mullein**  
*Croton setigerus* Hook.



**Turkey mullein**  
Euphorbiaceae  
(Spurge family)

A grayish-green, spreading or prostrate annual, branching from the base. A single plant may cover an area from 3 inches to 2 feet in diameter. The leaves are thick and broadly ovate to rounded, with 3 main veins from the base. The entire plant surface is covered by a thick gray layer of minute star-shaped hairs. Flowers are inconspicuous, of 2 kinds, borne in the lower leaf axils and at the ends of branches.

Turkey mullein is a native of the Pacific Coast and is found east to Nevada. It thrives on dry sandy soils. The hairy covering of the stems and leaves is as irritating to many persons as poison oak.

Non-standard name: doveweed.



*The entire plant is covered with a thick gray felt-like layer of hairs.*



*Flowers are borne in the lower leaf axils and at the ends of branches.*



**Toothed spurge**  
*Euphorbia dentata* Michx.



## Toothed spurge

Euphorbiaceae  
(Spurge family)

This native annual species is found from New York to Arizona. Stems are erect or curve upward, 8 to 24 inches tall, with branches that also curve upward. Leaves are opposite (lower ones sometimes alternate), 1/2 to 3 inches long, ovate to lance-shaped, usually hairy, with prominent veins on the undersides, often with a central dark reddish spot; margins are coarsely toothed. Flowers are small, without petals, and occur in clusters at the ends of shoots and branches. Seed capsules are 3-celled, smooth, yellow-green to green, and normally produce 3 seeds. Seeds are spherical and egg-shaped, inconspicuously 4-angled, tuberculate, gray, and about 1/6 inch long. White, milky juice is found in all plant parts.

Toothed spurge grows well in dry or moist soils. Habitats include roadsides, waste areas, gardens, and cultivated fields, particularly spring-planted crops.



*Upper leaves are opposite with lower ones sometimes alternate. Stems contain a milky juice.*



*Seeds are contained in 3-valved capsules and leaves are often blotched with red markings.*

**Leafy spurge**

*Euphorbia esula* L.



**Leafy spurge**  
Euphorbiaceae  
(Spurge family)

Perennial, up to 3 feet tall; reproduces by vigorous rootstalks and seed. Leaves are alternate, narrow, 1 to 4 inches long. Stems are thickly clustered. Flowers are yellowish-green, small, arranged in numerous small clusters and subtended by paired heart-shaped yellow-green bracts. Roots are brown, containing numerous pink buds which may produce new shoots or roots. The entire plant contains a milky juice. Seeds are oblong, grayish to purple, contained in a 3-celled capsule, each cell containing a single seed.

Leafy spurge is native to Eurasia and was brought into the United States as a seed impurity about 1827. However, it seems to be a serious problem only in North America where it infests almost 2.5 million acres, mostly in southern Canada and the northcentral United States. It has been reported to cause severe irritation of the mouth and digestive tract in cattle which may result in death. Capsules explode when dry, often projecting seeds as far as 15 feet. Seeds may be viable in the soil for up to 8 years. An extensive root system containing large nutrient reserves makes leafy spurge extremely difficult to control.



*Heart-shaped yellow bracts surround the 3-celled seed capsule, each cell containing a single seed.*



*Pink buds which form new shoots are common on leafy spurge crowns, and roots. Rooting depths of over 14 feet are reported with this prolific species.*

**Castorbean**

*Ricinus communis* L.



**Castorbean**  
Euphorbiaceae  
(Spurge family)

A tall, stout herb 4 to 6 feet in height. Leaves, large, palmately-lobed with 5 to 22 lobes with serrated leaf margins, having petioles with conspicuous glands. The flowers are borne in racemes or paniced clusters having female flowers above the male flowers. Each fruit contains up to 3 seeds, borne in a round spiny fruit that is often reddish. Seeds are smooth and bean-shaped, often variously marked and colored.

Castorbean is a cultivated oil crop which escapes to ditchbanks, roadsides and waste areas. It has caused poisoning in animals and humans. Skin irritation may result from handling seeds which are also highly toxic when eaten.



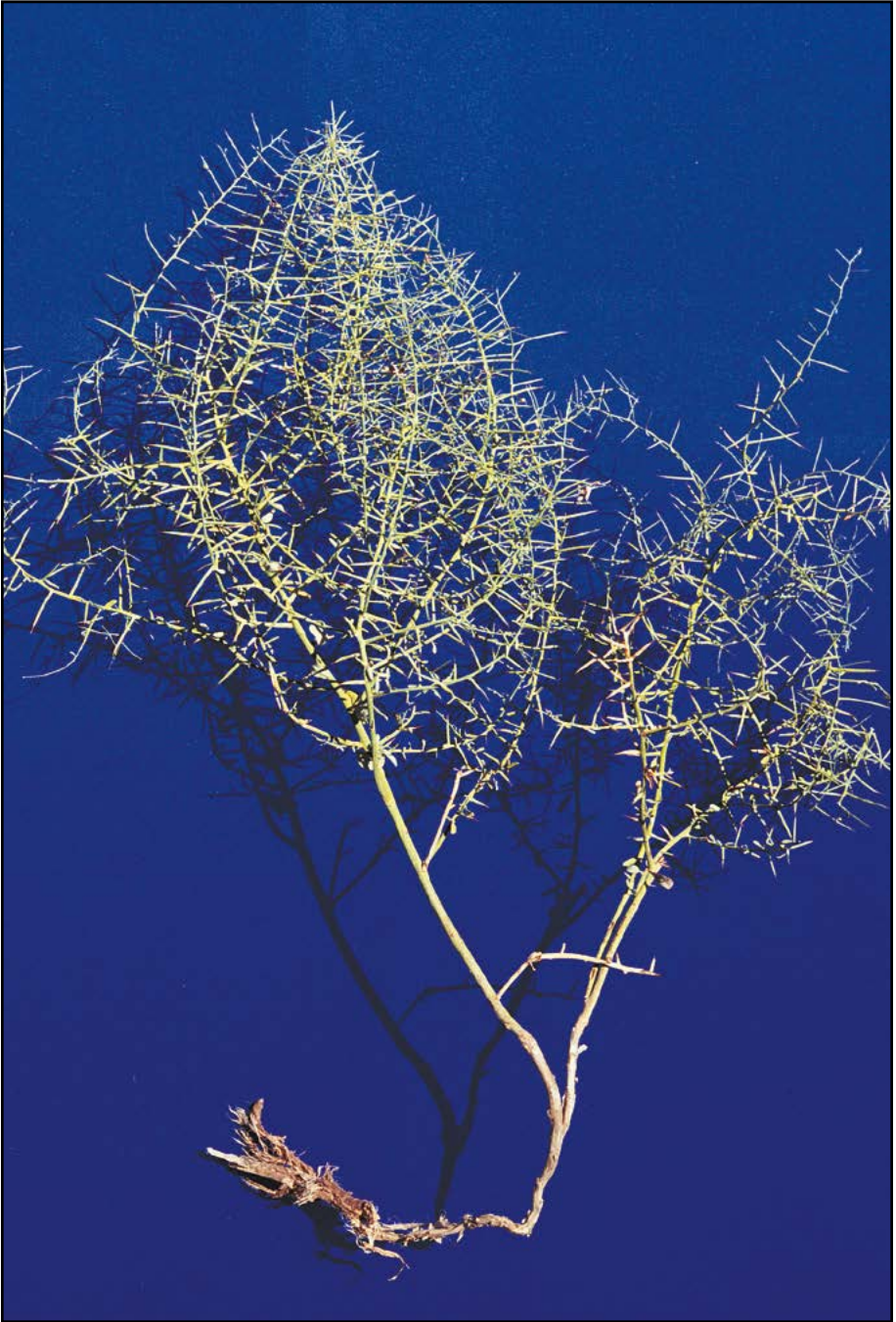
*Spiny fruits grow in clusters, each containing up to 3 seeds.*



*Poisonous seeds are smooth and bean-shaped with a mottled appearance.*

**Camelthorn**

*Alhagi maurorum* Medik.



**Camelthorn**  
Fabaceae  
(Pea family)

Camelthorn is a spiny, intricately branched, perennial shrub 1 1/2 to 4 feet tall. Reproduction is by seed and deep vertical and horizontal roots and rhizomes branching extensively at depths of 2 to 4 feet. The greenish stems are striate, glabrous, with slender spines 1/4 to 1 3/4 inches long. Single leaves are alternate, wedge-shaped, hairless on the upper surface, with hairs on the underside. They are 1/4 to 1 1/4 inches long and 1/8 to 1/2 inch wide. Flowers are small, pea-like, pinkish purple to maroon, occurring on short spine-tipped branches along the upper portion of the plant. The reddish-brown jointed seedpods are curved upward, deeply indented, with each seed being clearly outlined in the pod.

Camelthorn was introduced from Asia and grows well on dry or moist sites. It is now reported in the southwestern U.S. as well as Washington, but has been reported to spread rapidly along streams and canals.

Synonym: *A. camelorum* Fisch.



*Spines, 1/4 to 1 3/4 inches long, with yellow tips, are arranged along plant stems.*



*Flowers are pea-like, 3/8 inch long, pinkish purple to maroon.*



**Twogrooved milkvetch**

*Astragalus bisulcatus* (Hook.) Gray



## Twogrooved milkvetch

Fabaceae  
(Pea family)

Twogrooved milkvetch is a perennial upright herb growing up to 30 inches tall. Stems are dark purple as plants mature. Opposite, paired, hairy leaflets, oblong in shape, vary in numbers but generally are from 11 to 30 per leaf. Flowers are generally purple, sometimes blue or white, clustered near the end of plant branches. Fruit is a pod having two parallel rounded grooves.

Plants are indicators of saline soils and often have a strong selenium odor. There are many milkvetches in the West. Many milkvetches are poisonous, affecting cattle, sheep, and horses. Plants are poisonous throughout the growing season, containing glucosides that cause respiratory problems and paralysis of the hind legs in livestock. As little as 2 pounds can cause acute poisoning in mature cows within a few hours after being eaten. Animals often seek out plants, and have become addicted to milkvetches once they graze them. Moving affected livestock to non-infested areas will reduce losses.

Non-standard name: locoweed.



*Seed formation takes place in pods with two grooves running parallel down each pod. Stems are purple-striped.*



*Typical flowers of Astragalus species. These flowers are of Drummond milkvetch (*A. drummondii* Dougl. ex Hook.).*

## Scotch broom

*Cytisus scoparius* (L.) Link



**Scotch broom**  
Fabaceae  
(Pea family)

A woody shrub, up to 10 feet tall with many more-or-less erect branches that are angled and dark green. Leaves are mostly 3-parted with entire leaflets. Flowers are showy, yellow and abundant. Pods are flattened, brown or black, with white hair on the margins.

Scotch broom is a widespread pest of the Pacific coast, where it was introduced as an ornamental. This aggressive shrub is a problem in pastures, forests and wasteland. There are several weedy species of the genus *Cytisus* that are found on the Pacific Coast and Cascade Mountains. The seeds remain viable in the soil for many years.



*The pods at maturity can split noisily, ejecting the seeds some distance from the plant.*



*The showy yellow legume flowers illustrate why this plant was first introduced as an ornamental.*

**Goatsrue**

*Galega officinalis* L.



**Goatsrue**  
Fabaceae  
(Pea family)

A taprooted perennial legume, growing 2 to 5 feet tall, reproducing by seed. Leaves are odd-pinnate with 5 to 8 pairs of leaflets. Flowers are purple, blue or white, borne in terminal and axillary racemes. Pods are narrow, round in cross section, and slightly more than 1 inch long.

Goatsrue was intentionally introduced from the Middle East as a potential livestock forage, but was found to be unpalatable and highly toxic. It was allowed to escape, eventually spreading into cropland, waterways, pastures, fencelines, roadways, and marshy areas. Goatsrue seeds are spread primarily in irrigation water; but have also been known to move in contaminated harvest equipment, soil-moving equipment, animal manure, or alfalfa seed.



*Seedpods are narrow, round in cross section and slightly more than 1 inch long.*



*Flowers appear at stem terminals and range in color is purple, blue or white.*

**Wild licorice**

*Glycyrrhiza lepidota* (Nutt.) Pursh



**Wild licorice**  
Fabaceae  
(Pea family)

Wild licorice is a perennial reproducing from deep, spreading roots or seeds. Stems 1 to 3 feet tall, erect, simple or with upper part producing erect branches. Leaves alternate, pinnately compound with 11 to 19 deeply veined lanceolate leaflets with glandular dots when mature. Flowers in short axillary spikes on long peduncles; calyx with 2 upper teeth shorter and partly united; corolla with narrow standard and blunt keel, green-white to white, stamens – 9 fused by filaments and 1 separate. Seed pod about 1/2 to 3/4 inch long, burlike, covered with stout, hooked prickles; seeds to 1/10 inch long, bean-shaped, reddish-brown, smooth and dull.

Wild licorice is a widely distributed native plant commonly found in moist, sandy soils of meadows, pastures, prairies, ditch and river banks and waste areas. The common licorice used to flavor candy is a different species, though the root of wild licorice is equally sweet and was an important food source for the Native Americans.

Non-standard name: American licorice.



*Alternate leaves are pinnately compound with 11 to 19 lanceolate leaflets.*



*Burs less than 3/4 inch long appear in August and September on wild licorice.*



## Hogpotato

*Hoffmanseggia glauca* (Ortega) Eifert



**Hogpotato**  
Fabaceae  
(Pea family)

A low-growing weak-stemmed perennial up to 1 foot tall, that reproduces from seed or underground tubers. The plant has bipinnately compound subbasal leaves are 5 to 10 inches long, arranged as odd-bipinnate or pinnate with 2 to 6 pairs plus 1; leaflets 6 to 11 pairs. Leaflets are oblong from 1/8 to 1/4 inch long and with glandular dots. Flowers are pea-like, yellow or red-orange, about 1/2 inch long. Pods are about 1 1/2 inches long containing dark reddish-brown seeds. Seeds are smooth, and egg-shaped, up to 1/8 inch long.

Hogpotato is a native weed of the Southwest and is found in large colonies growing in alkaline soil along roadsides and ditchbanks.

Synonym: *Hoffmanseggia densiflora* Benth. ex Gray.



Seedling plants have bipinnately compound leaves with small paired leaflets.



Hogpotato has pea-like yellow to orange flowers.

**Everlasting peavine**  
*Lathyrus latifolius* L.



**Everlasting peavine**  
Fabaceae  
(Pea family)

A perennial with stems 2 to 7 feet long that are broadly winged, with a more or less climbing growth habit. The 2 leaflets are broadly lance-shaped with stipules 1 to 2 inches long. Tendrils are well developed. Flowers (5 to 15 per cluster) are approximately 1 inch long, white, pink or red.

This native of Europe is our common weedy genus.

Non-standard name: perennial peavine.



*Well developed tendrils and lance-shaped leaves are useful in the identification of the plant.*



*Sweetpea-like flowers of everlasting peavine vary from white to red.*

**Wyeth's lupine**  
*Lupinus wyethii* S. Wats.



## Wyeth's lupine

Fabaceae  
(Pea family)

A perennial plant reproducing by seeds. Stems are upright and branched, often forming large showy clumps up to 18 inches in height. Flowers range from white to purple on Wyeth lupine which are more open than those of other species. Leaflets and stems are covered with fine hair. Palmate leaves are composed of 6 to 8 leaflets radiating from a central point. Flowers mature from the bottom of the plant to the top forming hairy pods containing several round seeds.

Silver lupine (*L. argenteus* Pursh) is another species very common in the West. Hungry sheep are often poisoned by lupine plants when being trailed through ranges in late summer. Cows eating lupines during early pregnancy sometimes have calves with skeletal defects. Lupines contain poisonous alkaloids throughout the growing season and even though there are some species that are not poisonous, precautions should always be taken with livestock. Poisoning can occur in sheep ingesting less than 1/4 pound of the plants, while cattle must eat over 1 pound for poisoning to occur.



Generally lupines have palmate leaves composed of 6 or 8 leaflets radiating from a central point.



Flower color varies from white to blue and white on Wyeth's lupine as well as other species of lupine.

**Black medic**

*Medicago lupulina* L.



**Black medic**  
Fabaceae  
(Pea family)

A low trailing annual or short-lived perennial reproducing from seeds. Stems prostrate, 4-angled, branching from the base and radiating out from a taproot, 1 to 2 feet in length. Leaves are compound with 3 oval-shaped leaflets which are finely toothed and have prominent veins. The central leaflet is borne on a short stalk. Flowers are small and bright yellow, about 1/8 inch long, borne in clusters about 1/2 to 3/4 inch long. Flowers produce small pods which are kidney-shaped, thick-walled and curved. The pods are hairy but not spined and contain one seed.

The spiny pods of California burclover (*Medicago polymorpha* L.) differentiate it from black medic. Black medic and California burclover are natives of eastern Europe and Asia. They are found in the West and are a nuisance in lawns and gardens and along roadsides and waste areas. Flowering occurs from April to September.



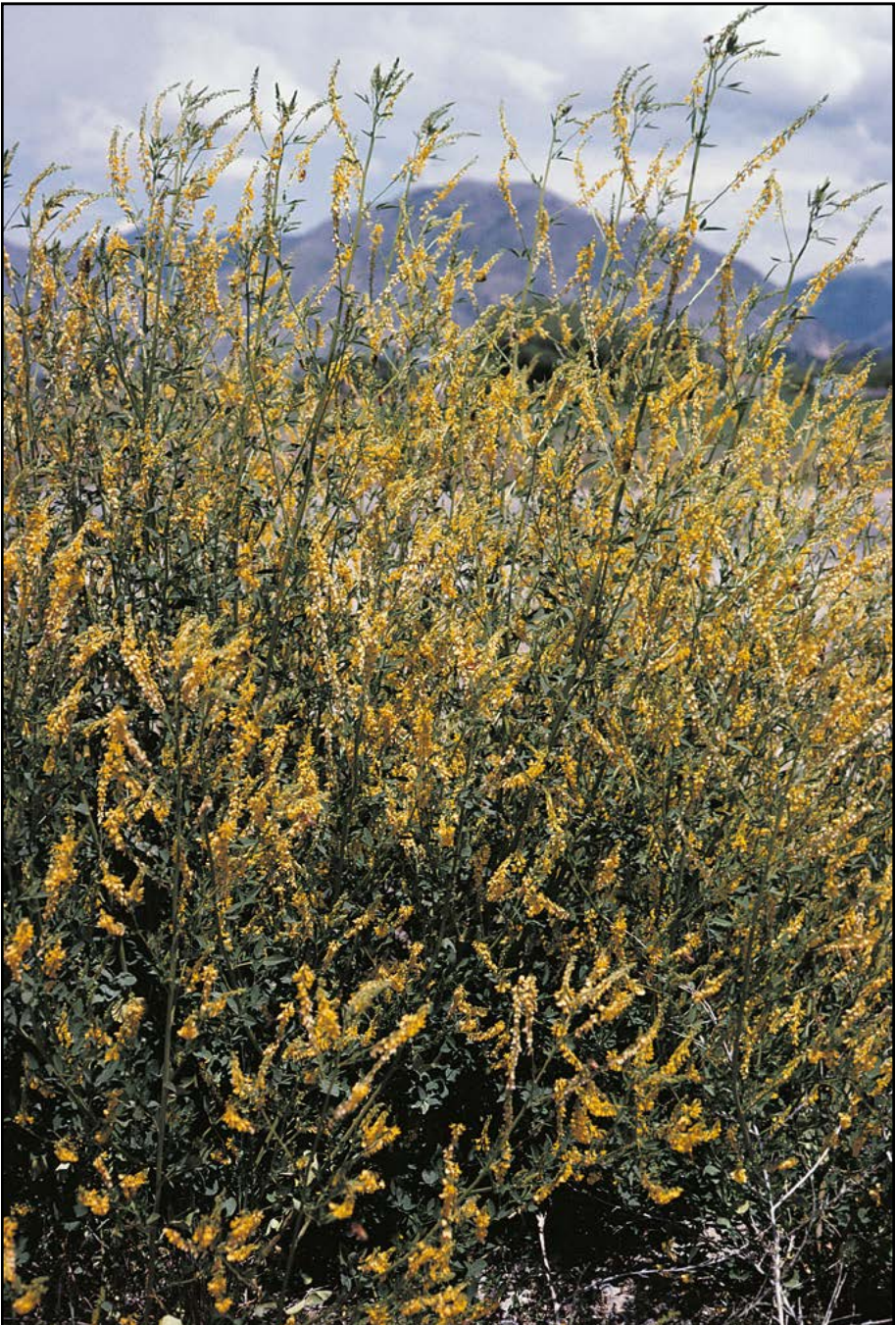
*California burclover has spiny curved seedpods.*



*Yellow flowers of black medic are about 1/8 inch long and produce small kidney-shaped pods.*



**Yellow sweetclover**  
*Melilotus officinalis* (L.) Lam.



## Yellow sweetclover

Fabaceae  
(Pea family)

An annual, winter annual, or biennial legume normally growing 2 to 6 feet tall. Trifoliate leaves resemble those of alfalfa, except that leaflet margins are serrated halfway or more back from the tip. Flowers are small, yellow (often fading to cream color), and arranged in many-flowered terminal and axillary racemes. Pods are 1- or 2-seeded, and cross-ribbed.

White sweetclover (*Melilotus albus* Medik.) is similar to yellow sweetclover, but has white flowers and net-veined pods. Indian sweetclover (*Melilotus indicas* (L.) All.) is a less common species with yellow flowers, and net-veined pods. The sweetclovers were introduced from Europe and Asia, becoming common along roadsides and waste areas. Sweetclover is often one of the first plants to appear on disturbed sites, and is sometimes promoted for soil stabilization or soil improvement. It is also favored by honey producers. The common sweetclovers, often causing bloat in cattle, are high in coumarin which causes anticoagulation of blood. Commercially improved forage varieties have been developed with reduced levels of coumarin and are less likely to cause bloat.



Sweetclover leaf (right) with leaflet margins serrated more than halfway back from tip. Alfalfa leaf (left) with leaflet margins serrated less than halfway back from tip.



Flower color is used to identify white sweetclover (left), and yellow sweetclover (center), Following flowering seedpods develop (bottom).

**Silky crazyweed**  
*Oxytropis sericea* Nutt.



## Silky crazyweed and Lambert crazyweed

Fabaceae  
(Pea family)

Silky crazyweed and Lambert crazyweed, *O. lambertii* Pursh, are perennial herbaceous legumes common on western rangelands. Mature plants range in height from 6 to 12 inches. Leaves are covered with fine hairs giving it a whitish-gray appearance. Flowers vary in color by species, with silky crazyweed having white flowers and Lambert crazyweed having purplish-pink flowers. Flowers are borne on a leafless stalk emerging from the center of the plant, forming a spike-like cluster. The plant produces kidney-shaped seeds which are formed in a hairy, leather-like pod.

Even though silky crazyweed is much more toxic than Lambert crazyweed, all livestock species can be poisoned by eating plants in this genus. Horses never recover once they are poisoned. Cattle gain weight slowly and often have abortions, while sheep abortions are common from eating these plants. Livestock generally avoid eating crazyweed until feed is scarce, but once they have eaten it, they seek out the plants.

Non-standard name: locoweed.



*Early growth stage of silky crazyweed is shown. Pinnately compound leaflets are covered with fine hair.*



*Lambert crazyweed flowers are purplish-pink and appear in mid-summer.*

## Honey mesquite

*Prosopis glandulosa* Torr. var. *glandulosa*



## Honey mesquite

Fabaceae  
(Pea family)

A spiny deciduous shrub or small tree up to 30 feet or more in height and having a trunk 1 to 4 feet in diameter. Branches are armed with 1 to 2 straight, yellowish, 1/4- to 3-inch spines at each node. Leaves alternate, petiolate, compound with 6 to 20 pairs of leaflets arranged on both sides of the axis, and each leaflet finely hairy or hairless and 1/8 to 3/4 inch long. Small greenish flowers, sessile or pedicellate, are crowded on stems 2 to 5 inches long. Oblong, flat, tan, leathery seedpods (legumes) are finely hairy or hairless and 3 to 8 inches long.

Infrequent to abundant on a variety of soils, honey mesquite is a native woody plant that is more commonly found on dry ranges in the Southwest. Mesquite pods are relished by all livestock. Unlike most other pea pods, they do not shed their seeds. Associated species include western honey mesquite (*Prosopis glandulosa* Torr. var. *torreyana* (L. Benson) M.C. Johnston) and velvet mesquite (*Prosopis velutina* Woot.). Mesquite is considered weedy on rangeland because of its ability to compete for soil moisture and its reproductive ability. It grows well on dry sites and resprouts if complete root kill is not achieved.



*Yellowish spines up to 3 inches long are characteristically found on mature plants.*



*The beans of mesquite are edible and readily eaten by livestock. The digestive process scarifies the seed, allowing them to germinate the following year.*

## Swainsonpea

*Sphaerophysa salsula* (Pallas) DC.



**Swainsonpea**  
Fabaceae  
(Pea family)

Swainsonpea is a creeping perennial reproducing by seeds and lateral roots. Leaves are compound, composed of numerous opposite leaflets which are oval and covered with hair. Flowers occur from May to July, are 1/4 to 1 inch in length and are orange-red. Many seeds are formed in bladder-like translucent pods. Seeds are green with an attachment indentation.

This plant was introduced from Asia and is commonly found in western states along roadsides and fences. It is a potential threat to grain and alfalfa growing areas; the seed is a contaminant in alfalfa seed which is the same size, shape and weight, making it impossible to separate.



*Seedlings have pinnately divided leaflets.*



*Orange-red showy flowers, 1/4 to 1 inch long, appear from May to July.*



**Round-leaved thermopsis**

*Thermopsis rhombifolia* Nutt. ex Richards.



## Round-leaved thermopsis

Fabaceae  
(Pea family)

Round-leaved thermopsis is a creeping perennial herb with 1 to 5 stems, erect from the crown, 6 to 16 inches tall. Leaves and stems are usually without hair. Leaves alternate and trifoliate, leaflets broadly elliptic, 1/2 to 1 inch long, 1/3 to 2/3 inch wide. Flowers in clusters up to 4 inches long, containing 10 to 30 individual yellow flowers.

A common plant on roadsides, pastures and rangeland, ranging from Wyoming to New Mexico. It is not palatable to livestock and is competitive with native vegetation. Flowering occurs from April to June. Mountain thermopsis (*T. montana* Nutt.) is similar to goldenpea, but has straight rather than curved pods and is poisonous to livestock.



Round-leaved thermopsis leaves contain three leaflets and have up to 5 stems coming from the same crown.



Round-leaved thermopsis is highly competitive and populations often cover large areas of range or pasture land.

**Gorse**

*Ulex europaeus* L.



**Gorse**  
Fabaceae  
(Pea family)

Gorse is a many-branched, rigid perennial often over 6 feet tall, with leaves modified into thorns. Flowers are bright yellow, pea-like, solitary or in clusters on short axillary stalks, developing into inch-long pods containing 1 to 4 seeds. When ripe, pods dehisce and eject seeds for some distance.

Gorse, native to Europe, was introduced to Hawaii as a hedge plant and to Oregon as an ornamental. It now infests many acres along the coasts of California, Oregon and Washington and upper elevation pasture lands on the islands of Hawaii and Maui, where it forms impenetrable stands due to its dense, thorny growth. Although goats and sheep will feed on its young growth, the plant is not grazed by other animals. Seeds are reported to stay viable in the soil for 30 years or more.



*Gorse is impenetrable by animals because of its sharp thorns growing up to 3 inches long.*



*Yellow, pea-like flowers develop into pods containing 1 to 4 seeds.*

**Hairy vetch**

*Vicia villosa* Roth



**Hairy vetch**  
Fabaceae  
(Pea family)

A hairy annual with stems up to 6 feet long. Leaves have 10 to 20 leaflets which are linear to narrowly lance-shaped and 3/4 to 1 inch long. Tendrils are well developed. There are 20 to 60 flowers per cluster, all usually on one side of the stalk. Flowers are purplish-red and 3/4 to 1 inch long. Fruit is 3/4 to 1 inch long with several seeds.

Common vetch (*V. sativa* L.) is an escaped domestic species with larger seeds and leaves. Hairy vetch was brought from Europe to be used as a rotation crop. It has escaped and is now common along roadsides and on idle land. It persists because of its hard dormant seeds and is frequently a problem in cropland.

Non-standard names: woolly vetch, winter vetch.



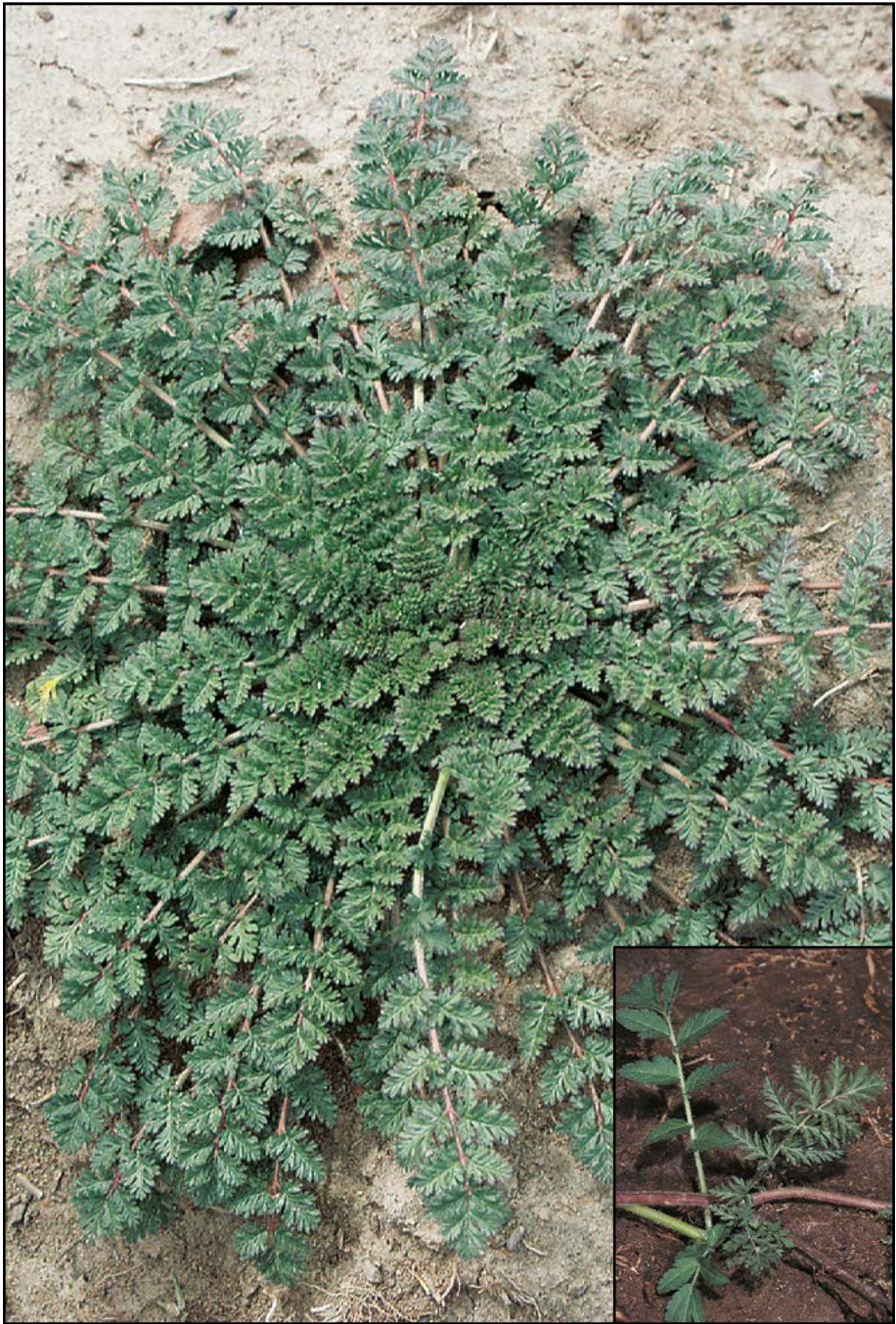
*Flowers, leaves, and tendrils of hairy vetch are used in identifying this species.*



*The flowers and leaves of common vetch (shown here) are larger than those of hairy vetch.*

**Redstem filaree**

*Erodium cicutarium* (L.) L'Her. ex Ait.



**Redstem filaree**  
Geraniaceae  
(Geranium family)

Winter annual or biennial with stems 1 inch to 2 feet long, spreading or erect, generally from a rosette. Leaves are divided into narrow feather-like lobed or toothed segments, both leaves and stems are hairy. Flowers are purplish-pink and generally borne in clusters of 2 or more. The fruit is 5-lobed and long-beaked, with each lobe splitting away at maturity.

A native of Europe or Asia, redstem filaree is common worldwide. It has been grown for forage and is only considered a serious problem when it crowds out more valuable crops.

Insert on opposite page compares the broad, more entire leaves of whitestem filaree (*E. moschatum* (L.) L'Hér. ex Ait.) to the more deeply cut leaves of redstem filaree.

Non-standard name: storksbill.



*Cotyledons are deeply lobed, young leaves are also deeply lobed or cut.*



*Flowers are generally borne in clusters of 2 or more. The beaked fruit splits at maturity into five, one-seeded sections with coiled appendages.*



**Western blueflag iris**  
*Iris missouriensis* Nutt.



**Western blueflag iris**  
Iridaceae  
(Iris family)

A perennial from stout, branching rootstock, stems 1 to 2 feet tall, nearly leafless. Basal leaves 1/4 to 1/2 inch wide. Flowers 1 to 4 per stem, blue-violet, 2 to 3 inches long.

Widespread in mountain meadows east of the Cascades, they are common along streambanks and in seepage areas on rangeland. In addition to being highly competitive with grasses they often cause problems when cutting hay. Western blueflag iris has been reported toxic to cattle.

Non-standard name: iris, Rocky Mountain iris, wild iris.



*Spreading of wild iris from branched rhizomes is common.*



*One to four flowers occur on each stem, blue-violet and 2 to 3 inches long.*

**Rush**

*Juncus* spp.



## Rush Juncaceae (Rush family)

Perennial or rarely annual low growing herbs with erect stems. Perennials have rhizomatous roots. Leaves are located on basal portions of the plant and can be flat, folded, rolled or round. The seedheads appear near the top of stems, flowers are numerous as clusters subtended by several leafy or chaffy bracts.

There are over 300 species of *Juncus* worldwide. Most are found in moist sites but certain species grow on dry sites. Forage value is low, having limited use by livestock as hay and forage.

Non-standard name: wiregrass.



*Leaves are found at the base of the plant. Stems are round in cross-section.*



*Mature fruit is surrounded by chaffy bracts.*

**Toad rush**

*Juncus bufonius* L.



**Toad rush**  
Juncaceae  
(Rush family)

An annual 1 to 8 inches tall with branched stems. Leaf blades flat, less than 1/16 inch wide and up to 4 inches long. Flowers are usually borne singly at the nodes and subtended by 2 bracts. The fruit is not angled, opening along 3 lines to release numerous minute seeds.

Found in wet soils throughout most of North America. It is especially common in lawns and gardens along coastal areas.



*The fruit opens along 3 lines to release numerous minute seeds.*



*Mature plants are tufted with inconspicuous leaves and seedpods which are subtended by 2 bracts.*

**Seaside arrowgrass**  
*Triglochin maritimum* L.



**Seaside arrowgrass**  
Juncaginaceae  
(Arrowgrass family)

Seaside arrowgrass is a native perennial, reproducing from rhizomes and seeds. Roots are short and fibrous. Basal leaves thick and succulent, having a round appearance but a rounded indentation on one side. Small, green, inconspicuous flowers are borne on stalks 1 to 3 feet high. Fruit borne in small pods having 6 compartments, each containing a single seed. The pods surround the seed stalk, but each is attached by a short pedicel or stalk.

Seaside arrowgrass grows in patches in wet alkaline soils, starting growth in early spring with flowering and seed formation occurring in late summer. The plant contains hydrocyanic acid, especially when drought-or frost-stressed, making it highly poisonous to livestock. As little as 1/4 pound of plants under stress can cause sudden death in yearling cattle if eaten in a short period of time. The poison, which causes respiratory failure, does not accumulate in the animal. Cured hay containing seaside arrowgrass has been reported toxic to young livestock. Two other species, Howell arrowgrass (*Triglochin concinna* Davy var. *debilis* {M.E. Jones}) and marsh arrowgrass (*Triglochin palustre* L.), are more delicate and slender than seaside arrowgrass.



Leaves of arrowgrass resemble grass leaves, but they are fleshy with a semi-circular groove down each leaf.



Fruit are individually connected to a main stem by a pedicel or short stem.



## Henbit

*Lamium amplexicaule* L.



**Henbit**  
Lamiaceae  
(Mint family)

An annual with spreading or weakly erect, 4-angled stems, much-branched at the base. Leaves opposite, the lower ones long petioled, more or less rounded in outline, coarsely toothed or lobed, upper leaves similar in outline, but sessile and clasping the stem. Flowers pink to purple and white, 2-lipped, 1/2 to 3/4 inch long, borne in compact whorls in the axils of the upper leaves. Each of the 4 brown and white mottled nutlets, produced by each flower, are narrow at the base.

Fields and waste places are common habitats of this species. Even though henbit was introduced from Eurasia and North Africa, it has become well established throughout North America. It is a problem weed of cropland, gardens, and in newly seeded lawns. It appears in early spring and flowers from April to July.



*Cotyledons of seedlings are round to oblong on hairy petioles. First true leaves are opposite, prominently veined and crinkled.*



*Flowers are pink to purple and white, 2-lipped from 1/2 to 3/4 inch long and are in compact whorls in the axils of upper leaves.*

**Purple deadnettle**

*Lamium purpureum* L.



**Purple deadnettle**  
Lamiaceae  
(Mint family)

An annual with square stems, usually branched from the base. Leaves are opposite and mostly crowded near the top, with lower leaf petioles longer than upper ones. Upper leaves are usually purplish. Flowers are 2-lipped, mostly 3/8 to 5/8 inch long, pink to purple and borne in the axils of upper leaves. The fruit consists of 4 nutlets.

Purple deadnettle is native to Europe and is established in North America. It often forms a showy ground cover in early spring in gardens, orchards, and fields. Henbit (*L. amplexicaule* L.) is similar to purple deadnettle but can be distinguished by upper leaves having no petioles.

Non-standard name: red deadnettle.



*The square stem and opposite leaves of purple deadnettle are good identification characteristics.*



*A typical patch of purple deadnettle in early spring appears light purple.*

**White horehound**  
*Marrubium vulgare* L.



**White horehound**  
Lamiaceae  
(Mint family)

An erect perennial 1 to 2 1/2 feet tall. Stems are 4-sided, woolly, and have a somewhat woody base. Leaves have petioles and are paired at each stem joint. Leaves have a white-woolly wrinkled surface and coarsely-toothed margins. Flowers are small, white, and borne in dense clusters in the leaf axils. The calyx of each flower surrounds the fruit and develops a whorl of small hooked spines, forming a characteristic cluster of bur-like structures in each leaf axil.

White horehound is a native of Europe that was probably introduced into the United States as a garden herb. It escaped cultivation and has become widely distributed along roadsides, dry waste areas, and in gardens.



*The white-woolly stems are square when viewed in cross section.*



*Flowers and bur-like fruits develop as clusters in leaf axils.*

**Mediterranean sage**  
*Salvia aethiopsis* L.



**Mediterranean sage**  
Lamiaceae  
(Mint family)

An aromatic biennial, growing 2 to 3 feet tall. In the first season it develops a rosette of large grayish woolly leaves. In the second season the plant bolts, producing multi-branched stems with white to blue-green, woolly, felt-like leaves. Lower leaves have petioles, are lobed with coarsely-toothed blades 1/3 to 1 foot long. Upper leaves are smaller and clasp the stem. The upper surface of leaves may eventually shed some of the pubescence, revealing the green wrinkled leaf. Flowers are yellowish-white, borne in clusters on profusely branched stems. The 4 nutlets, developing from each flower, are smooth with dark veins. One plant may produce thousands of seeds which are spread easily because the mature plant forms a tumbleweed.

Mediterranean sage is a native of the Mediterranean or northern Africa. It is spreading rapidly in many parts of the West, invading pastures, meadows, rangeland, and other open areas. Meadow sage (*S. pratensis* L.) resembles Mediterranean sage, but usually has blue flowers, and is more coarsely hairy.

Non-standard name: African sage.



*Rosettes have woolly, blue-green, felt-like leaves.*



*Hooded "2-lipped" flowers are white to yellowish-white.*



**Lanceleaf sage**

*Salvia reflexa* Hornem.



**Lanceleaf sage**  
Lamiaceae  
(Mint family)

Lanceleaf sage is a native annual, reproducing from seed. The stem is 4-sided and greatly branched. Leaves are opposite, lance-shaped with a blunt tip and narrow at the base, are 1 to 2 inches long and are both toothed and entire. Flowers are bell-shaped, 1/3 to 1/2 inch long, with an extended lower lip. They are usually opposite but sometimes have up to 4 flowers together, arranged in a whorl. The fruit is covered with dry chaffy bracts and contains 4 light brown seeds with dark brown markings.

Sometimes called blue sage, it is common throughout the Rocky Mountain region, growing at elevations from 3,500 to 8,000 feet. The plant has a strong sage aroma and is normally unused by livestock. Livestock have been poisoned when lanceleaf sage is chopped or mixed with other feed. It is reported to contain large amounts of nitrates. Symptoms include muscular weakness followed by sudden death.



*Seedlings have a 4-sided stem with opposite lance-shaped leaves with a blunt tip which narrows at the base.*



*Flowers are bell-shaped, on short stalks, ranging from 1/3 to 1/2 inch long. When mature each fruit is made up of 4 nutlets surrounded by dry chaffy bracts.*

**Textile onion**

*Allium textile* A. Nels. & J.F. Macbr.



**Textile onion**  
Liliaceae  
(Lily family)

Textile onion is a native perennial reproducing by bulbs, aerial bulblets, and seed. The underground single bulb has no bulblets which are common on wild garlic. Leaves are fleshy and the whole plant has a strong onion odor. White flowers are borne on leafless flower stalks up to 18 inches tall. Seeds are black, 1/8 inch long or longer, with sharp angles.

Textile onion is common in meadows and pastures and sometimes found in grain fields. The plant causes a strong onion flavor in milk and is difficult to control. Several *Allium* species are common, with flowers ranging in color from white to rose.



*Underground bulbs are single, with no offsets.*



*White flowers, borne on leafless flower stalks, are surrounded by a thin membrane.*

**Wild garlic**

*Allium vineale* L.



**Wild garlic**  
Liliaceae  
(Lily family)

Perennial from bulbs, often clustered together. The outer coat of a bulb is papery and brittle; individual bulblets are asymmetrical. Leaves are few, originating from the base of the stem and are long-pointed. The stem is slender and solid, up to 3 feet tall, bearing a terminal cluster of flowers. The flowers, all or in part, are replaced by small bulbils. The bulbils are shed to form new plants or sometimes sprout in the head to form a bushy mass of green seedlings. All parts of the plant have a strong odor.

Wild garlic was introduced from Europe by early settlers as a food flavoring. A problem of pastures and cultivated crops in the East, as well as Washington, Oregon, northern California, and a small area of Wyoming.



*Flowers, all or in part, are replaced by aerial bulbils.*



*Large bulb and secondary bulbs from base of the plant; secondary bulbs are not found in prairie onion.*

**California false-hellebore**  
*Veratrum californicum* Durand



## California false-hellebore

Liliaceae  
(Lily family)

A stout, coarse perennial from short, thick rootstocks, with leafy stems 3 to 7 feet tall. Leaves 6 to 12 inches long and 1/2 to 2/3 as broad, strongly sheathing at the base. Inflorescence a dense branching panicle, 1 to 2 feet long, or in *Veratrum californicum* var. *caudatum* (Heller) C.L. Hitchc., the upper 1/3 to 1/2 a densely flowered raceme. Flowers 6-parted, white, yellowish or even greenish-tinged. Fruits 3/4 to 1 1/4 inches long, containing yellowish, winged seeds.

This native plant is found most commonly in swamps, creek bottoms, meadows and moist woodlands at medium altitudes in our mountainous areas. False-hellebore is toxic to humans and livestock, the poison reaction occurring within 2 to 3 hours after the plant is consumed. It causes a congenital deformity in lambs known as “monkey face,” as well as abortion, when pregnant ewes feed on the plant. Since it is commonly found in mountain meadows around watering places, it is readily accessible to grazing livestock. Flowering occurs from June to August.



Leaves are 6 to 12 inches long and 3 to 6 inches wide, with strong sheaths surrounding stems.



Flowers are 6-parted, white, yellowish to green-tinged at the top of the central stem.



**Meadow deathcamas**

*Zigadenus venenosus* S. Wats



## Foothill deathcamas and Meadow deathcamas

Liliaceae  
(Lily family)

Foothill deathcamas, *Z. paniculatus* (Nutt.) S. Wats., and meadow deathcamas, native perennials, have underground scaly bulbs and emerge in early spring. Plants have 5 or 6 basal, thickened V-creased leaves with a grass-like appearance. Plants reach heights of 2 feet. White to yellowish flowers are borne as a terminal cluster in early summer. Meadow deathcamas flowers have a panicle-like appearance with lower florets spaced apart from the terminal cluster. Foothill deathcamas flowers form a terminal compact plume. The rough brown seeds are formed in a capsule.

All parts of the plant contain a poisonous alkaloid at all growth stages. Bulbs, often mistaken for wild onions, can cause severe illness in humans. Deathcamas is often eaten by sheep or cattle in early spring before other plants start producing forage. Sheep are the most commonly poisoned, but cattle deaths have also been reported. Respiratory problems occur in sheep after eating 1/2 to 2 pounds of either *Zigadenus* species.



*Leaves of immature plants have 5 or 6 unbranched V-creased leaves with a grass-like appearance.*



*Foothill deathcamas has a compact flower arrangement forming a single cluster rather than individual flowers up and down the terminal stem.*

**Purple loosestrife**  
*Lythrum salicaria* L.



**Purple loosestrife**  
Lythraceae  
(Loosestrife family)

A rhizomatous perennial with erect stems, often growing 6 to 8 feet tall, usually associated with moist or marshy sites. Leaves are simple, entire, and opposite or whorled. Rose-purple flowers having 5 to 7 petals are arranged in long vertical racemes.

Purple loosestrife, is an introduced European ornamental species that often escapes to aquatic sites such as streambanks or shorelines of shallow ponds. Infestations can become dense and impede water flow in canals and ditches. Reports of reduced habitat for wildlife are common.

Non-standard name: purple lythrum.



*Showy rose-purple flowers bloom in long vertical racemes.*



*Lance-shaped leaves have smooth margins.*

**Velvetleaf**

*Abutilon theophrasti* Medik.



**Velvetleaf**  
Malvaceae  
(Mallow family)

This is an annual, completely covered with soft hairs, with stems erect, branched, 2 to 7 feet tall. Leaves alternate, heart-shaped, pointed at the apex, 5 inches or more in width and attached on slender petioles. Flowers are solitary in leaf axils with 5 yellow petals and numerous fused stamens that form a tube. Fruit are rounded with 9 to 15 segments arranged in a disk, each containing 3 to 9 egg-shaped, somewhat flattened, rough gray-brown seeds.

Introduced into North America from Asia, velvetleaf is widely distributed. Velvetleaf thrives on rich soils and is found in cultivated fields, gardens, fence rows and waste areas. The seeds retain their viability in soil for more than 50 years, making eradication difficult. Flowering and seed production occur from late June to October.



*Velvet leaf seedlings are covered with soft hair, stems often have a purple tinge.*



*Yellow-orange flowers containing 5 petals appear in leaf axils from June to October.*

**Spurred anoda**

*Anoda cristata* (L.) Schlecht.



**Spurred anoda**  
Malvaceae  
(Mallow family)

An erect annual, branching at the base, usually 1/4 to 3 1/2 feet tall. Leaves are alternate, 1 1/2 to 3 inches long, usually triangular in shape, with some arrowhead-shaped, others lance-shaped. Flowers are solitary on stalks, arising from the leaf axil and are purplish-red to bluish-violet. The 5 green outer flower parts are apparent, with the lobes widely spreading under and extending beyond the flattened disk of the fruit. The disks contain 8 to 20 carpels united in a ring, each conspicuously beaked with an elongated dorsal spur. Fruits break apart at maturity.

This plant, native of the Southwest, has spread from Iowa to Arizona. It is troublesome in crops, gardens, ditches, along roadsides and waste areas.



*The leaves are triangular in appearance, though some may look more arrowhead- or lance-shaped.*



*The individual fruit structures (carpels) have a characteristic spur.*



**Venice mallow**  
*Hibiscus trionum* L.



**Venice mallow**  
Malvaceae  
(Mallow family)

An annual, typically growing 10 to 18 inches tall. Stems and petioles are usually covered with stiff hairs. Stems generally originate from a central base, and tend to be more spreading than erect. Leaves are deeply cleft into 3 or 5 coarsely toothed lobes. The showy flowers are light sulfur-yellow with a purple or blackish center, reaching up to 1 1/2 inches in diameter. Petals are shed soon after flowers open. Dark brown seeds develop within a large papery sac-like structure formed from the inflated calyx.

Venice mallow was introduced from Europe. It is typically found in waste areas, gardens, orchards, and cultivated fields.

Non-standard name: bladder ketmia, flower-of-an-hour, rose mallow.



*Seedling plants have deeply lobed leaves.*



*Flowers are light sulfur-yellow with a deep purple center and golden anthers. Seeds develop in a strongly-veined, papery, inflated calyx.*

**Common mallow**  
*Malva neglecta* Wallr.



**Common mallow**  
Malvaceae  
(Mallow family)

Annual, winter annual or biennial with stems generally low spreading, the branches erect from 2 to 20 inches long. Leaves long-petioled, rounded with a heart-shaped base, 3/4 to 3 1/2 inches in diameter, inconspicuously 5 to 7 lobed. Flower petals, ranging from white to pale lavender, are fused and about twice the length of the calyx. Fruit consists of a circle of rounded one-seeded lobes separating at maturity.

This species, introduced from Europe, has long been present in the North America. It is common in waste areas, gardens and cultivated land.

A similar species, little mallow (*M. parviflora* L.), is less common and differs from common mallow by having shorter flower petals and the lobes of the fruit being flattened and wrinkled.

Non-standard names: buttonweed, cheeseweed.



*Seedling plants, have heart-shaped cotyledons, true leaves have round, lobed leaves with a V-notched base.*



*Lavender-striped flowers and round button-like fruit are formed in mid-summer.*

**Alkali Mallow**

*Malvella leprosa* (Ortega) Krapov.



**Alkali Mallow**  
Malvaceae  
(Mallow family)

A low-growing perennial, somewhat resembling common mallow. Foliage is densely hairy with prominent star-shaped hairs, giving leaves a gray-green color or sometimes the foliage may have a yellowish cast due to an abundance of scurfy yellow scales. Leaves have petioles, are fan-shaped or kidney-shaped, with toothed margins. Flowers are axillary. Petals are less than 1/2 inch long, whitish, yellow, or cream-colored; often fading or drying to pink.

Alkali Mallow is a native species that can become troublesome in meadows, pastures, and cultivated crops, especially in somewhat alkaline or saline soils.

Synonym: *Malva hederacea* Dougl., *Sida hederacea* (Dougl.) Torr. Non-standard name: dollar weed, alkali sida.



Petioled leaves are fan-shaped with toothed margins. A dense covering of star-shaped hairs gives foliage a gray-green appearance.



Cream-colored flowers are 1/2 to 3/4 inch wide, with a ball-like cluster of stamens in the center.

**Yellow devil's-claw**

*Ibicella lutea* (Lindl.) Van Eselt.



**Yellow devil's-claw**  
Pedaliaceae  
(Unicorn-plant family)

A foul smelling, native annual with prostrate, spreading stems that are diffusely branched, covered with glandular hair. The heart to kidney shaped leaves are opposite below to alternate above. The leaves are 1 to 7 inches long and 1 to 8 inches wide with rounded to pointed tips and smooth margins. The funnel-shaped flowers, depending on species, vary from yellow to pale pink with red to yellow lines and purple or dark red spots. The body of the fruit is 4 inches long with a beak that is as long or longer than the fruit. The fruit and beak splits at maturity forming two claws. The claws function as a seed dispersal mechanism attaching to animals and equipment. The dry fruits are used to make a variety of dry ornaments.

Non-standard names: Unicorn plant, aphid trap.



*The first pair of true leaves on seedling plants are covered with fine, soft hair. Variation among leaves makes identification difficult unless mature fruit is present.*



*Five-petal showy flowers are usually pomegranate red.*



## Fireweed

*Chamerion angustifolium* (L.) Holub



**Fireweed**  
Onagraceae  
(Evening primrose family)

Perennial from spreading rootstocks with stems that are usually simple, up to 9 feet tall. Leaves are lance-shaped, entire or remotely toothed and up to 8 inches long. Flowers are showy, rose to purple and borne in a long terminal raceme, or with some flowers in the axils of the upper leaves. The fruit is 2 to 3 inches long, splitting open at maturity to release the numerous brown seeds, each with a tuft of fine, off-white hairs, aiding in their dispersal.

Common throughout North America, fireweed occurs on burned timberland, along roadsides and on wasteland. It is used by bees and is reported to be good sheep forage.

Non-standard name: blooming Sally.



*Terminal raceme of fireweed showing flowers and immature fruit.*



*The mature fruit splits to release numerous seeds, each bearing a tuft of hairs, aiding in their dispersal.*

**Panicle willowweed**

*Epilobium brachycarpum* K. Presl



**Panicle willowweed**  
Onagraceae  
(Evening primrose family)

A native annual weed that typically blooms in late summer or early autumn. Plants are much-branched and generally 1 to 3 feet tall. Leaves are 1/3 inches long, willow-like and mostly alternate. The inflorescence is an open panicle. Flowers have 4 deeply notched petals that are white to pale pink or rose colored. Fruits containing numerous seeds are 4-celled elongated capsules somewhat resembling mustard siliques. Seeds are tipped with a prominent tuft of long soft hairs – a key distinguishing feature used in differentiating willowweeds from mustards.

Panicle willowweed is highly variable species found mostly on non-cultivated sites, and especially on dry soils and open areas. There are numerous other species and/or varieties of willowweed found throughout the West.

Non-standard name: autumn willowherb.



*Flowers have 4 notched petals ranging in color from white to pink.*



*Fruits are elongated 4-parted capsules that open to release numerous small tufted seeds.*

**Small-flowered gaura**

*Gaura parviflora* Dougl. ex Lehm.



**Small-flowered gaura**  
Onagraceae  
(Evening primrose family)

An erect biennial or winter annual that grows 5 to 6 feet high. Leaves are lance-shaped, with little or no petioles. Leaves and stems are covered with long, spreading, soft hairs. Flowers are small and numerous, borne on long spike-like inflorescences. Sepals and petals are both reddish, about 1/10 inch long. Flowers have 4 petals and 8 stamens. Seeds are retained in 4-angled, nut-like fruits.

Scarlet gaura (*G. coccinea* Nutt. ex Pursh) resembles small-flowered gaura, but branches more from the base, lacks spreading hairs on the stem, and has larger flowers. Small-flowered gaura is found in pastures, waste areas, along roadsides, and even in dryland wheat fields. Both species of *Gaura* are native to the United States.

Non-standard name: willow gaura, velvety gaura.



*Leaves and stems are covered with long, soft, spreading hairs.*



*Numerous small 4-petaled flowers are borne on long spike-like inflorescences.*

**Creeping woodsorrel**  
*Oxalis corniculata* L.



## Creeping woodsorrel

Oxalidaceae  
(Woodsorrel family)

A prostrate creeping perennial from a slender taproot. Stems root at the joints. Leaves alternate and trifoliate with broad, heart-shaped leaflets borne at the tip of a long petiole. Leaves are green to purplish, often closing and drooping at night. Flowers have 5 yellow petals 1/8 to 1/3 inch long and occur in clusters of 1 to 5 at the ends of slender flower stalks. Seed pods are erect, hairy, cylindrical, 1/3 to 1 inch long, and pointed at the tip. When seeds are mature, pods open explosively, often spreading seeds more than 10 feet. Seeds are rough and reddish.

Yellow woodsorrel (*O. stricta* L.) resembles creeping woodsorrel but lacks stipules and normally does not root at the nodes. Creeping woodsorrel is a native of Europe and is distributed in the southwestern United States. Its habitats include lawns, flower beds, gardens and greenhouses.



Yellow 5-petal flower and cylindrical seedpods of creeping woodsorrel.



Creeping woodsorrel often roots at stem nodes.



**Annual pricklepoppy**

*Argemone polyanthemus* (Fedde) G.B. Ownbey



## Annual pricklepoppy Papaveraceae (Poppy family)

Annual pricklepoppy has erect, prickly, sparingly branched stems up to 3 feet tall. The entire plant contains a yellow sap. Leaves are grayish-green, coarsely lobed, spiny on margins and midrib. Flowers are terminal, large, white. Seeds are small, round blackish-brown, ridged on one side.

Annual pricklepoppy is a native plant to the Rocky Mountain region occurring in pastures, waste areas, and along roadsides. It is seldom abundant and can be an indicator of overgrazing. Its spines make it undesirable for livestock feed. The prickles have been known to irritate the skin of some people. Although it produces beautiful flowers, it is generally considered a nuisance because of its unpalatability.



*Yellow spines along the main stem and leaves prevent livestock from using this plant.*



*Large showy flowers with yellow centers blossom in late summer.*

**Buckhorn plantain**  
*Plantago lanceolata* L.



**Buckhorn plantain**  
Plantaginaceae  
(Plantain family)

This is a perennial from a stout fibrous rootstock. The crown of the plant is covered with tan woolly hairs. Leaves all basal, 3- to several-veined, narrowly elliptic or lance-elliptic, 4 to 12 inches long, usually less than 1 1/2 inches wide. Flowering stalks are several, up to 18 inches tall, bearing a dense spike of small flowers, subtended by thin ovate bracts; stamens, 4, exerted, conspicuous. Seeds, shiny, 4 per fruit, blackish, about 1/16 inch long.

Buckhorn plantain is native to Eurasia and is a weed of roadsides, pastures and other disturbed sites such as lawns and gardens. Flowering period is May to August.

Non-standard name: English plantain, lanceleaf plantain.



*Seedlings of buckhorn plantain have long narrow leaves with prominent parallel veins.*



*Flowering begins in late summer. This ring of white flowers appears first at the base of the inflorescence but progresses to the tip.*

**Broadleaf plantain**  
*Plantago major* L.



**Broadleaf plantain**  
Plantaginaceae  
(Plantain family)

This is a fibrous-rooted perennial, from an erect caudex, the crown not woolly, sometimes blooming the first year. Leaves are all basal, broadly elliptic to ovate, blade abruptly contracted to the well-defined petiole. The blade is entire or irregularly toothed, 3 to 7 inches long, 3- to several-veined. The flowering stem is 5 to 15 inches long, topped with a dense, elongated spike of small flowers. Corolla lobes are papery, reflexed; stamens, 4, exerted. Fruit is 1/4 inch long; there are 6 to 30 seeds per fruit, black or brown, seeds minutely netted.

Broadleaf plantain is supposedly a native of Europe; but today it is cosmopolitan in distribution, inhabiting roadsides, lawns, disturbed sites and cultivated fields. It can be found in valleys to midmontane sites and flowers from April to September.



*Strap-shaped cotyledons with oval-shaped true leaves having scattered hairs.*



*Small inconspicuous flowers are borne on spike-like inflorescences.*

**Woolly plantain**  
*Plantago patagonica* Jacq.



**Woolly plantain**  
Plantaginaceae  
(Plantain family)

A small annual with stems, 3 to 10 inches tall and covered with hairs. Leaves, 1 to 5 inches long, upright, narrow, pubescent and clustered at the base of the plant. Flowers are whitish, in spikes 1 to 5 inches long, and surrounded by woolly bracts.

Woolly plantain is a common invader of abused, native ranges. After maturity it is not utilized by livestock if other forage is available. This native warm-season forb is not a highly competitive species with native rangeland perennials. It grows on plains, slopes and is common on sandy soils. Flowers appear from May to July.



*Leaves appear in late winter, are 1 to 5 inches long and narrow, and are clustered at the base of the plant.*



*Woolly bracts surround seedpods which contain two small seeds in each pod.*



**Jointed goatgrass**  
*Aegilops cylindrica* Host



## Jointed goatgrass

Poaceae  
(Grass family)

Jointed goatgrass is a winter annual, 15 to 30 inches tall with one to many erect stems or tillers. Leaves are alternate, simple, with auricles at the base and a leaf blade 1/8 to 1/4 inch wide, with hairs. The spike is cylindrical, more than 10 times as long as it is wide. It contains 2 to 12 spikelets that fit into the contour of the rachis, spikelets 1/2 inch long with 1 to 3 viable seeds (see opposite page insert). Glumes several-ribbed with a keel on one side extending into a single awn or beard. At maturity the spike falls intact and spikelets separate with a segment of the rachis still attached.

Jointed goatgrass is native to southern Europe, but it is now established in most winter wheat growing areas of North America, spread as a seed contaminant or by custom combiners. It is found mostly in wheat fields, but it survives along roadsides, in waste areas, alfalfa fields and pastures. The plant is most difficult to control in areas where winter wheat is grown continuously. Flowering and seed production may occur from May to July.

Non-standard name: jointgrass.



*Immature jointed goatgrass plants have marginal hairs on the leaf at the stem juncture.*



*Jointed goatgrass (on left) a principal weed of winter wheat (right) has a similar appearance and is closely related to winter wheat. The two will cross to form a hybrid.*

**Creeping bentgrass**  
*Agrostis stolonifera* L.



## Creeping bentgrass

Poaceae  
(Grass family)

A low-growing perennial, 8 to 20 inches tall, from stolons which creep and root along the surface of the ground. The panicle is closed most of the season and open only when blooming. The leaf ligule is membranous, thin, 1/32 to 1/8 inch long, entire or finely toothed.

Colonial bentgrass (*A. capillaris* L.), also known as common bentgrass, differs from creeping bentgrass in that it can spread by short rootstalks and rhizomes and has panicles that are open most of the season.

Non-standard name: seaside bentgrass.



*Creeping bentgrass can be distinguished by its stoloniferous growth habit.*



*The panicles of colonial bentgrass are open most of the season compared to the closed panicles of creeping bentgrass.*

**Blackgrass**

*Alopecurus myosuroides* Huds.



**Blackgrass**  
Poaceae  
(Grass family)

Annual with erect culms which are closely clustered, slightly rough to the touch and up to 2 feet tall. Leaf blades are usually 1/10 to 1/8 inch wide. The panicle is spike-like, somewhat tapering at each end and 1 to 4 inches long. The glumes are pointed, whitish with 3 green nerves; lemma is about as long as the glumes and the awn is bent.

Rare in the western U.S. but widespread and a serious problem in Europe.

Non-standard name: slender foxtail.



*Smooth leaves have long papery ligules.*



*Panicle is slender, somewhat tapering at each end.*

**Tall oatgrass**

*Arrhenatherum elatius* (L.) Presl var. *bulbosum* (Willd.) Spenner



**Tall oatgrass**  
Poaceae  
(Grass family)

Perennial with stems up to 6 feet tall, from bulbous bases, these bulb-like structures are often borne in short chains. Leaves with flat blades, roughened, 3/8 inch or less wide with short, membranous ligules. The panicle is 1/2 to 1 foot long and open, with short, whorled branches, these usually bear spikelets to the base; spikelets are 5/8 inch long with each spikelet having 2 florets, the lower floret with a bent awn.

Tuber oatgrass is a native of Europe that can be found throughout the Pacific Northwest. It occurs on roadsides, in waste areas and in cultivated fields. It is difficult to control because the bulbs are spread as the soil is tilled by farm equipment.



*Bulb-like root structures in chains resembling strings of beads are found near the soil surface.*



*The inflorescence with whorled branches usually bears florets at the base of each branch.*



**Wild oat**  
*Avena fatua* L.



**Wild oat**  
Poaceae  
(Grass family)

Wild oat is an annual, 1 to 4 feet tall with erect hollow stems. Leaf blades are 1/8 to 5/8 inch wide, sheaths open, ligules membranous. The seedling leaves twist counterclockwise. The inflorescence is an open panicle, 4 to 18 inches long, drooping, spikelets contain 2 to 3 florets which disarticulate above the glumes. Seeds are yellow to black, narrowly oval, 1/4 to 1/2 inch long.

This species is distinguished from domestic oats by the twisted awn which bends at right angles and a horseshoe-shaped scar at its seed base. Slender oat (*Avena barbata* Pott ex Link) has smaller florets and a more slender rachis. Wild oat is a native of Europe, but is common throughout much of western North America. It is a serious problem in spring-seeded small grain, but it also occurs along roadsides, in pastures and waste areas. Seed can remain dormant in the soil for as long as 10 years, making it difficult to eliminate once established. Flowering and seed production occur from June to August.



*Seedling leaves twist counterclockwise when viewed from above the plant stem. Small marginal hairs can be seen on leaf edges.*



*A long pointed papery ligule arises from the leaf collar. Sparse hairs are found along leaf margins.*

**California brome**

*Bromus carinatus* Hook. & Arn.



**California brome**  
Poaceae  
(Grass family)

California brome is a perennial, often short-lived, 20 to 40 inches tall. Leaf blades are 8 to 12 inches long and 3/8 to 1/2 inch wide, rough or sparsely hairy. Inflorescence 6 to 12 inches long with spreading or drooping branches. Spikelets are 3/8 to 1 inch long, broad and flat with sharply keeled lemmas, awns 1/4 to 5/8 inch long.

This highly variable grass invades open waste areas and cropland. In the vegetative stage it is difficult to distinguish from several other weedy bromes. Seed germination usually occurs in the fall; young plants over-winter, grow rapidly in the spring and reach maturity by early summer. It is a vigorous competitor throughout the West and is palatable throughout its life cycle.

Non-standard name: mountain brome.



*California brome spikelets are compressed with sharpened edges.*



*The ligule and tiny auricles shown are typical of California brome but are not positive identification for separating Bromus species.*

## Rescuegrass

*Bromus catharticus* Vahl



**Rescuegrass**  
Poaceae  
(Grass family)

Rescuegrass is an annual or short-lived perennial, up to 40 inches tall. Leaf blades are 8 to 12 inches long and 3/8 to 1/2 inch wide, rough or sparsely hairy. Inflorescence open and up to 8 inches long. Spikelets are 3/4 to 1 inch long, broad and flat with sharply keeled lemmas. Spikelets are awnless or with awns to 1/8 inch.

Rescuegrass was introduced from South America and is cultivated as a winter forage in the southern states; it is similar to California brome. Seeds germinate in the fall, young plants grow slowly throughout the winter and make rapid growth in the spring maturing in the early summer. If they are harvested or grazed, the plants will continue to be vegetative and produce forage into the fall.



*The spikes are compressed and sharply keeled as with California brome.*



*The ligule and tiny auricles are typical of rescuegrass, but are not positive characteristics for separating brome species.*

**Japanese brome**

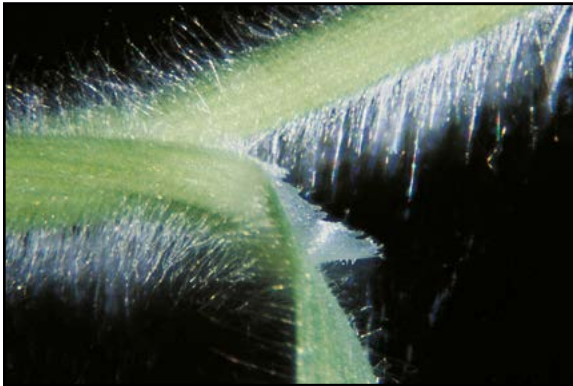
*Bromus japonicus* Thunb. ex Murr.



**Japanese brome**  
Poaceae  
(Grass family)

Japanese brome is an annual or winter annual, 14 to 30 inches tall. It reproduces by seed. Leaf blades and sheaths are soft and hairy. Inflorescence diffuse, 4 1/2 to 8 inches long with 3 to 5 lower, usually drooping branches. Spikelets are 1/4 inch wide and about 1/2 inch long, awns are 1/4 to 3/4 inch long, somewhat twisted and widely spreading at maturity.

This European introduction has become a nuisance in depleted ranges, hayfields, and dry soils in waste or disturbed areas. It is often confused with downy brome. Seed germination usually occurs in the fall; young plants overwinter, grow rapidly in the spring and reach maturity by June. It occurs throughout the West and is only palatable in the early stages of growth before seeds dry in the spring. A vigorous cover of desirable, perennial grasses is a good method of prevention in pastures and rangelands.



*Stems and leaves are covered with soft hairs at all growth stages.*



*Mature spikelets about 1/2 inch long have awns from 1/4 to 3/4 inch long.*



**Soft brome**

*Bromus hordeaceus* L.



**Soft brome**  
Poaceae  
(Grass family)

An annual, up to 3 feet tall, softly pubescent throughout. Panicle erect with crowded spikelets 3/8 to 7/8 inch long. Glumes are distinctly broad and blunt. Awns are 1/4 to 1/2 inch long.

This European introduction is widespread in the region as a weed of waste land and cultivated fields. Seed germination usually occurs in the fall; young plants then overwinter, grow rapidly in the spring and reach maturity in early summer.

Non-standard names: soft cheat, soft chess.



*Leaf sheaths are closed with spreading hairs. The ligule is membranous up to 1 mm long.*



*Spikes are pubescent, rounded and uncompressed along the outer margin.*

## Ripgut brome

*Bromus diandrus* Roth



**Ripgut brome**  
Poaceae  
(Grass family)

Ripgut brome is an annual growing 1 to 3 feet tall. Leaf blades are flat, with sheaths that are usually hairy, 1/8 to 1/2 inch wide with soft, straight hairs. Ligules are membranous, unevenly fringed, 1/8 to 1/4 inch long. The inflorescence is open, with spreading, or drooping branches bearing 1 to 2 spikelets. Spikelets, 1 1/4 to 1 1/2 inches long, have 5 to 8 awned florets. Awns up to 2 1/4 inches are stout and rough-textured.

Ripgut brome is native to Europe and northern Africa. It is common along the Pacific Coast of North America, occurring from British Columbia south to Mexico with isolated infestations found in other western states. Ripgut brome is a common weed of waste areas, roadsides and railroads, and is invasive on rangelands. The long stiff awns at maturity can cause injury to the nose and eyes of grazing animals.

Synonym: *Bromus diandrus* Roth.



*Ligules are membranous and unevenly fringed while leaf blades and sheaths have soft, spreading hairs.*



*Individual spikelets have multiple florets, each having long offensive awns.*

**Cheat**

*Bromus secalinus* L.



**Cheat**  
Poaceae  
(Grass family)

An annual up to 30 inches tall. Leaves are 1/8 to 1/4 inch wide and sparsely hairy. Panicle is nodding and open. Spikelets are 1/2 to 3/4 inch long and 1/4 to 3/8 inch wide. Margins of lemmas are deeply in-rolled at maturity in contrast to most bromes in our region. Awns are 1/8 to 1/4 inch long.

Although introduced from Europe it is common throughout much of North America. Seeds usually germinate in the fall; young plants overwinter, grow rapidly in the spring, and reach maturity by early summer.

Non-standard name: chess.



*The ligule and tiny auricles are typical of many of the bromes.*



*The spikes of cheat are smooth with shortened awns.*

**Downy brome**

*Bromus tectorum* L.



**Downy brome**  
Poaceae  
(Grass family)

Downy brome is an annual or winter annual, 4 to 30 inches tall, reproducing by seed. Leaf sheaths and flat blades are densely covered with soft hair. Ligules are short. Inflorescence is dense, slender, usually drooping, 1-sided, 2 to 6 inches long. Spikelets are nodding, slender 3/8 to 3/4 inch long. Awns are 3/8 to 5/8 inch long, usually purplish at maturity.

Downy brome was introduced from the Mediterranean region in packing material and first found near Denver, Colorado. It is now widely distributed throughout North America and is common along roadsides, waste areas, misused pastures and rangelands, and cultivated crop areas. Although downy brome is considered an invader, on certain intermountain ranges it has become the primary green forage utilized by livestock. The plant competes with more desirable perennial grasses for moisture because of its winter and early spring growth habit. After maturity it becomes a nuisance and a fire hazard. It is also a common crop seed contaminant very difficult to separate from grass seed.

Non-standard names: cheat, cheatgrass.



*A papery thin ragged edged ligule is found in the leaf collar area above the leaf sheath. All parts of the plant are covered with soft, dense hair.*



*Mature downy brome seedheads, 2 to 6 inches long, contain seed, 3/8 to 3/4 inch long, with awns up to 5/8 inch long.*



**Longspine sandbur**

*Cenchrus longispinus* (Hack.) Fern.



## Longspine sandbur

Poaceae  
(Grass family)

A warm-season annual grass with tufted stems. It grows 8 inches to 3 feet tall, occasionally erect, but usually spreading horizontally and forming dense mats. Leaf sheaths are flattened, very loose, smooth with hairy margins. Leaf blades are flat, roughened, 2 to 6 inches long and 1/4 inch wide with rounded margins. The spikes are 1 to 3 inches long and bear clusters of 10 to 30 burs. Burs are thickly set with stiff, sharp, spreading spines. They usually contain two light brown, oval to oblong seeds.

A native species, longspine sandbur is a nuisance throughout most of North America. It grows in cultivated fields, pastures and waste areas; but favors sandy or well-drained, gravelly soils. It can be particularly troublesome to livestock causing injury to mouths, noses or eyes that come in contact with the mature burs. The presence of burs also reduces the value of wool. Sandbur is commonly spread by animals and machinery. Flowering and seed production occur from July to September.

Other sandbur species in the West include: field sandbur (*C. spinifex* Cav.).



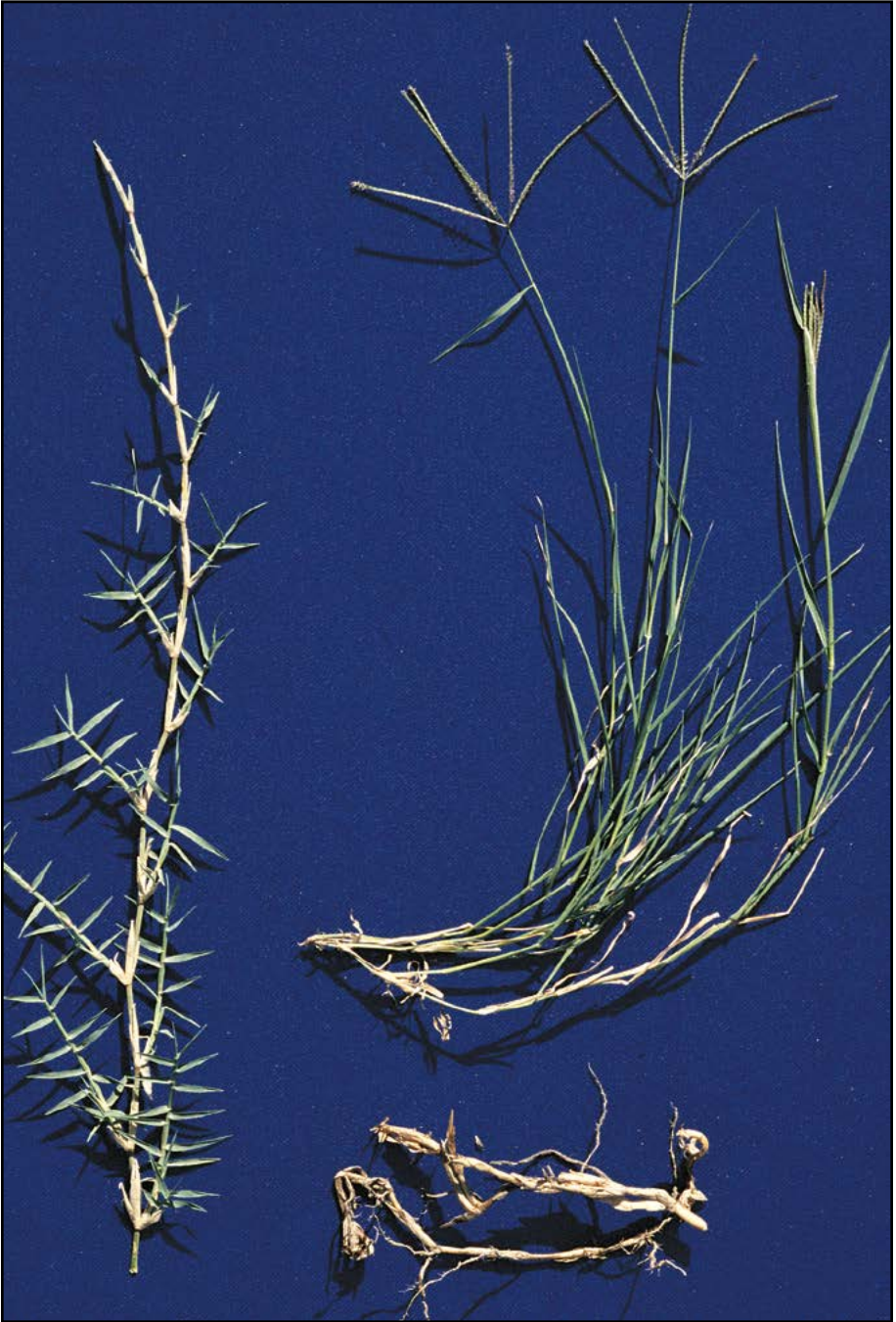
*Immature plants, often purplish, have flattened stems usually spreading horizontally. All these plants came from the same seed.*



*Longspine spikes are 1 to 3 inches long with 10 to 30 burs contained in each cluster.*

**Bermudagrass**

*Cynodon dactylon* (L.) Pers.



## Bermudagrass

Poaceae  
(Grass family)

A wiry perennial with long, slender, creeping rhizomes and stolons. Leaves are generally smooth, with a conspicuous ring of white hairs at the junction of blade and sheath. Decumbent stems typically have papery leaf sheaths at each node. Decumbent stems spread laterally over the soil surface, rooting freely at lower nodes. Flowering stems are upright and bear a terminal group of 3 to 7 spike-like branches, usually originating in a single whorl on the ends of stems (in a configuration resembling fingers on a hand). Individual spikes are 1 to 2 inches long and bear 2 rows of sessile spikelets along one side of a somewhat flattened rachis.

Bermudagrass was probably introduced from Africa. It is widely established in warmer regions of the West and Southwest, where it is frequently used as a pasture or lawn grass. More recently it has become established in colder regions of the West, posing a serious threat to crop production and turf management. Bermudagrass is sometimes confused with large crabgrass (*Digitaria sanguinalis* (L.) Scop.) because of a superficial resemblance between inflorescences, and both have prostrate spreading stems that may root at nodes. Crabgrass spikelets are attached to the rachis by an obvious short pedicel.



Stolons spread laterally over the ground, rooting freely at any node.



The flowering stems are upright and bear a terminal group of 3 or 7 spikes up to 2 inches long.

**Large crabgrass**

*Digitaria sanguinalis* (L.) Scop.



**Large crabgrass**  
Poaceae  
(Grass family)

A summer annual, 6 inches to 2 feet in height, which reproduces by seeds. It often roots along the stem spreading from the plant base. Leaf blades are flat and 1/4 to 1/2 inch wide with sheaths that have long stiff hairs. The inflorescence is made up of 3 to 11 slender finger-like spikes or branches, 2 to 6 inches long, most arising from the same point at the stem tip but may have several additional branches below the stem tip. The small spikelets are 1/8 to 3/16 inch long and lie along only one side of the spike or flowering branch. The seed is oval and about 1/12 inch long.

Smooth crabgrass (*Digitaria ischaemum* (Schreb.) Schreb. ex Muhl.) is similar to large crabgrass but the leaves are smaller and not hairy. Large crabgrass was introduced from Europe and is a weed in lawns and cultivated fields in the West.



Leaves of large crabgrass (left) are hairy and larger than those of smooth crabgrass (right).



Inflorescence of large crabgrass with slender finger-like spikes, some of which arise slightly below the stem tip.

**Saltgrass**

*Distichlis spicata* (L.) Greene



**Saltgrass**  
Poaceae  
(Grass family)

A low, stiff perennial 4 to 16 inches high, reproducing by seed and creeping underground rhizomes that root at the joints to produce new stems, often forming a dense colony. Leaves are alternate but come up the stem in 2 rows. They are 1/2 to 4 inches long and 1/8 inch wide, sometimes folded lengthwise or rolled inward. At the base of the leaf blade the collar or ligule forms a ring of white, twisted hairs. Saltgrass is one of a few species of grass that have male and female plants. The flower groups are similar in appearance. Spikelets clustered at the top of the stems, are somewhat flattened, 1/3 to 1/4 inch long with 5 to 9 flowers per spikelet.

Saltgrass is found in the West and is common in alkaline soil or sometimes soils in drainage, flood plains, and marshes in the desert. As a weed it has spread to irrigated lands and is a pest in ditches and on the margins of cultivated fields.



*Flower spikelets are clustered at the top of the stems.*



*Leaves are alternate along the stem. Saltgrass usually has creeping rhizomes.*



## Junglerice

*Echinochloa colona* (L.) Link



**Junglerice**  
Poaceae  
(Grass family)

A summer annual 2 to 3 feet tall. Leaf blades are smooth and flat, about 1/4 inch wide and 3 to 6 inches long. Leaves often contain purple bands or stripes that are perpendicular to the length of the leaf. The panicle is 2 to 6 inches long with short branches up to 1 inch long. The spikelets, which are about 1/8 inch in length, are crowded on the rachis in 2 to 4 regular rows.

The spikelets do not end in a bristle as does barnyardgrass, but they are sharp-pointed. Jungle rice is a native of Europe and can be found in cultivated fields and waste areas throughout the southwestern United States. Junglerice is called *E. colonum* in many publications but recent literature refers to it as *E. colona*.

Non-standard name: watergrass.



*Small flat seedlings have purple striped leaves.*



*Short branched panicle having spikelets crowded along the rachis.*

**Barnyardgrass**

*Echinochloa crus-galli* (L.) Beauv.



**Barnyardgrass**  
Poaceae  
(Grass family)

Barnyardgrass is a vigorous, warm season annual grass reaching 1 to 5 feet in height with bases of many stems reddish to dark purple. Leaf blades are flat, 3/8 to 5/8 inch broad, smooth, and without a ligule or auricles at the junction of sheath and blade. Leaf sheaths are open lacking auricles and ligules. Panicles are often reddish to dark purple. Spikelets are crowded; awns might be absent or can be found up to 1 inch long, stiff scattered hairs are common.

Barnyardgrass was introduced from Europe and has become widespread throughout our region, especially in irrigated crops, gardens and other cultivated areas.

Non-standard names: Japanese millet, watergrass.



*Seedlings are often purple and flattened at the base.*



*Leaf sheaths are open, lacking auricles and ligules.*

**Goosegrass**

*Eleusine indica* (L.) Gaertn.



**Goosegrass**  
Poaceae  
(Grass family)

Spreading annual with flattened stems 15 to 36 inches long. Leaf blades are flat or folded, 1 to 3 inches long and 1/8 to 1/2 inch wide. Stems at maturity terminate in an inflorescence consisting of 2 to several stout spikes which are finger-like, sometimes with 1 or 2 spikes a short distance below the summit. Spikelets are compressed and form 2 rows along one side of the spike rachis.

Goosegrass is a native of the old world and common in lawns in the warmer parts of the West.

Non-standard name: silver crabgrass.



*Seedling of goosegrass with flattened stem.*



*Leaves are generally smooth with a few long hairs on the leaf sheaths and a marginal fringe of shorter hairs.*

**Quackgrass**

*Elymus repens* (L.) Gould



## Quackgrass

Poaceae  
(Grass family)

Quackgrass is an aggressive perennial grass reproducing by seed, or spreading by a shallow mass of long, slender, branching rhizomes. Rhizomes are usually yellowish-white, sharp-pointed, somewhat fleshy. They are able to penetrate hard soils or even tubers and roots of other plants. Stems are erect and usually 1 to 3 feet tall. Leaf blades are 1/4 to 1/2 inch wide, flat, pointed and have small auricles (ear-like appendages) at the junction of blade and sheath. Leaf sheaths and the upper surface of leaf blades may be thinly covered with soft hairs. Spikelets are arranged in two long rows, borne flatwise to the stem. Florets are awnless, or with short straight awns.

Quackgrass was introduced from the Mediterranean area. It has spread over much of North America, adapting well to moist soils in cool temperate climates. Quackgrass reduces productivity in crops, rangeland and pasture. It is also a nuisance in lawns, ornamentals and home gardens and is believed to be allelopathic. Because of the ability of broken rhizome segments to grow and produce new plants, it is extremely difficult to control mechanically.

Synonym: *Agropyron repens* (L.) Beauv.



*Quackgrass leaves are often constricted near the leaf tips allowing for identification of vegetative stages.*



*New plants develop in dense stands from sharp-pointed, yellow-white rhizomes.*



## Stinkgrass

*Eragrostis cilianensis* (All.) Vigin. ex Janchen



## Stinkgrass

Poaceae  
(Grass family)

An annual with small glandular structures on the foliage and spikelets which give off a disagreeable odor. Stems hollow, 6 inches to 2 feet tall. Leaves flat to folded, 1/16 to 5/16 inch wide. Sheaths open, the ligule a fringe of straight hairs. Panicles congested, rounded to oblong, 1 1/2 to 9 inches long. Seed shatters readily at maturity, and appears as naked, egg-shaped, tiny grains (approximately 1/35 inch long).

Stinkgrass, introduced from the old world, is found throughout the United States. It is common in waste places, gardens, alfalfa and other crops. More than one species is reported to occur in the western U.S.

Non-standard names: lovegrass, candy-grass.



*Below the leaf at the stem juncture is a fringe of straight hairs.*



*Many egg-shaped seeds are contained in these multifloreted spikelets of stinkgrass.*

**Southwestern cupgrass**  
*Eriochloa acuminata* (J. Presl) Kunth



## Southwestern cupgrass

Poaceae  
(Grass family)

This is an annual, 1 to 3 feet tall, that reproduces by seed and by prostrate stems that root at the nodes. The inflorescence is pubescent, 2 to 6 inches long, with short, erect to spreading branches that are 1 to 2 inches long. Spikelets, 1/4 to 3/16 inch long, having scattered hairs, and tapering into a point at the tip, and a darkened cup-like ring around the base. Seed is oval, flat on one side and rounded on the other, about 1/3 inch long, and has a short point at the tip.

Seedlings look similar to large crabgrass (*Digitaria sanguinalis* (L.) Scop.) and can be distinguished by the lighter green color and absence of hairs. A second species, prairie cupgrass (*E. contracta* Hitchc.), looks similar to southwestern cupgrass and can be distinguished by pubescent leaf blades and awned florets. Both species are native grasses and can be found in the Southwest.



During seedling stage, southwestern cupgrass resembles large crabgrass and can be distinguished by having bright green leaves and no pubescence.



Spikelets, found in seedheads 1 to 2 inches long, have a darkened ring around the base.

**Common velvetgrass**  
*Holcus lanatus* L.



## Common velvetgrass

Poaceae  
(Grass family)

A perennial up to 3 feet tall with stems that are closely clustered. The entire plant is more or less grayish and velvety. Leaves are broad, long and pointed at the apex. Flower panicles, 3 to 6 inches long, are plume-like, dense, pale-green to purplish and hairy. The second floret of each spikelet possesses a small curved, hook-like awn.

German velvetgrass (*H. mollis* L.), also known as creeping velvetgrass, is a perennial with a spreading rootstock. It is greener and less hairy, stems are hairy only at the nodes. The awn of the second floret is bent but not hooked. Both grasses are native to Europe.

Non-standard names: Yorkshire-fog.



*The medium length ligule is fringed. The leaves and stems are covered with fine, soft hair.*



*Rhizomes of German velvetgrass are densely matted, therefore excluding other vegetation.*

**Foxtail barley**  
*Hordeum jubatum* L.



## Foxtail barley and Squirreltail

Poaceae  
(Grass family)

Foxtail barley is a perennial that reproduces by seed. Plants grow 1 to 2 feet tall and produce a pale green, bushy spike. Leaf blades are 1/8 to 1/4 inch wide; the sheaths may vary from smooth to densely hairy. At maturity the heads break into 7-awned clusters consisting of 3 spikelets (1 fertile and 2 sterile). Spikelets are 1-flowered. Awns are 1 to 2 1/2 inches long.

Squirreltail, *Elymus elymoides* (Rafin) Swezey, is a related perennial grass with open spikes and long, minutely-barbed awns. The most obvious difference between the 2 genera is the fact that *Elymus* has 2 or more florets per spikelet, and 2 spikelets per node. Foxtail barley is a native of North America, and is especially common in wet or alkaline soils, and rundown meadows and pastures. Squirreltail is more common on dry hills, plains, open woods and rocky slopes. Both foxtail barley and squirreltail are palatable to livestock at younger stages; but awns of mature plants can cause serious injury to animals' eyes, nose, throat and ears. At least 4 species of *Elymus* and at least 7 species of *Hordeum* (in addition to barley) are reported to occur in the West.



Once established, plants are blue-green in color, and appear as clumps.



Squirreltail resembles foxtail, but has open spikes with long, minutely-barbed awns.



## Hare barley

*Hordeum murinum* L. ssp. *leporinum* (Link) Arcang.



**Hare barley**  
Poaceae  
(Grass family)

Annual up to 10 inches tall. Leaf blades are 1/16 to 3/16 inch wide and smooth to hairy. Auricles at base of blade are well developed. Inflorescence a spike 1/2 to 4 inches long with awns 1/4 to 1 inch long.

Foxtail barley (*Hordeum jubatum* L.) does not have auricles and Mediterranean barley (*Hordeum marinum* Huds. ssp. *gussonianum* (Parl)) may have one small auricle. Hare barley was introduced from southern Europe and a common weed of cropland and waste areas in most western states. Awns of mature plants can cause serious injury to eyes, nose, and throat of grazing animals.

Non-standard name: wild barley.



*The conspicuous awns of hare barley are typical of the wild Hordeum.*



*The well developed clasping paper thin auricles are easily observed on hare barley.*

**Mexican sprangletop**

*Leptochloa fusca* (L.) Kunth var. *uninervia* (J. Presl) N. Snow



## Mexican sprangletop

Poaceae  
(Grass family)

A tall or spreading often reddish or purplish annual 1 to 3 feet high. Leaf blades are thin and flat, 1/4 to 1/3 inch wide and up to 12 inches long. The central nerve of the leaf is nearly white, giving the leaf a 1-nerved appearance from which the species name is derived. Spikelets are grouped to form a loose, fine-textured panicle. Mature spikelets are no more than 1/4 inch long and are dark grey.

Bearded sprangletop (*Leptochloa fusca* (L.) Kunth var. *fasciculais* (Lam.) N. Snow) is similar to Mexican sprangletop but has awned spikelets. Red sprangletop (*Leptochloa panicea* (Retz.) Ohwi) is also a similar species having a reddish panicle, often as long as 18 inches. Mexican, bearded, and red sprangletop occur in the southwestern United States. They grow particularly well in wet areas at the edges of fields, irrigation and drainage canals. They are also troublesome summer annual weeds in irrigated crops.

Synonym: *Megastachya uninerva* Presl.



This leaf of Mexican sprangletop illustrates its prominent central nerve.



Red sprangletop has a large, reddish, open panicle.

## Italian ryegrass

*Lolium perenne* L. ssp *multiflorum* (Lam.) Husnot



**Italian ryegrass**  
Poaceae  
(Grass family)

An upright annual, often purplish at the base, from 1 to 2 1/2 feet tall. Leaves are shiny and have flat blades 1/8 to 1/4 inch wide, dark green with prominent veins. Spikes are terminal and flat with spikelets that are placed edgewise and alternate along the flowering stem. The spikes are often as long as 12 inches.

Italian ryegrass was introduced from Europe and is a common weed of roadsides, waste areas and cultivated crops. It is used as a temporary turf before establishing lawns and as a temporary pasture grass.

Non-standard name: annual ryegrass.



*Leaves have small clasping auricles, are smooth, shiny and have prominent veins.*



*The flat terminal spikes have spikelets that alternate along the stem.*

## Witchgrass

*Panicum capillare* L.



**Witchgrass**  
Poaceae  
(Grass family)

Witchgrass is an annual, soft and hairy throughout, 1 to 2 feet tall, reproducing by seed. Leaf blades are 1/8 to 9/16 inch wide. Spikelets form a large open panicle with many stiff branches, each bearing a single, small, shiny, green or grayish seed at the tip.

Witchgrass is a common weed found along roadsides, waste places, cultivated fields, depleted hayland and ranges in poor condition. It may become a nuisance in cultivated fields with poorly established crops. It does not compete well with established perennial grasses, therefore, it is not a serious problem on ranges in good condition. Witchgrass is somewhat palatable before seedheads develop, but is worthless once it matures, and lowers hay quality. When mature the whole plant breaks away, scattering seed as it tumbles across the land.

Non-standard name: ticklegrass.



*Witchgrass seedlings have wide, flat pubescent leaves. All parts of this plant are extremely hairy. Leaves are often 1/2 inch wide on immature plants.*



*Ligule is a fringe of short hairs. The leaf blades and stems are hairy.*



**Fall panicum**

*Panicum dichotomiflorum* Michx.

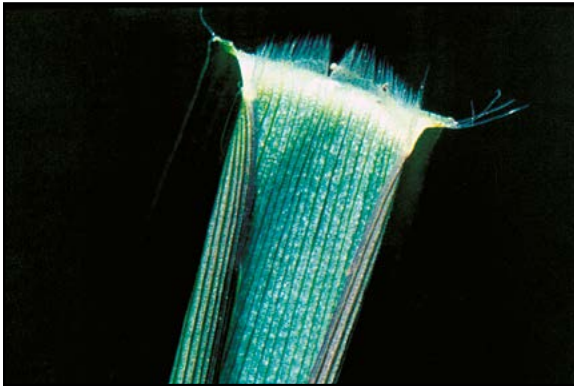


**Fall panicum**  
Poaceae  
(Grass family)

An annual with an upright or spreading growth habit, up to 3 feet tall from a bent or twisted base. Leaf blades are up to 3/4 inch wide, usually with a prominent white midrib. Ligule is a dense ring of white hairs up to 1/16 inch long. Open panicles are both terminal and axillary.

A native of central and eastern North America, it has now spread to the West. It is an aggressive, widespread weed of cropland in the East.

Non-standard name: western witchgrass.



*The ligule consists of a dense ring of white hairs.*



*The open seedhead of fall panicum has individual seeds at the ends of the branches.*

**Wild-proso millet**  
*Panicum miliaceum* L.



## Wild-proso millet

Poaceae  
(Grass family)

Wild-proso millet is an annual, 2 to 6 feet tall, with erect stems that branch at the base. Leaf blades are hairy, 1/2 to 3/4 inch wide; sheaths open with long spreading hairs. The ligule is a fringe of dense hairs 1/16 inch long that are fused at the base. The inflorescence is a spreading panicle 6 to 12 inches wide and not fully extended from the leaf sheath. Spikelets are 2-flowered, the upper floret is fertile, the lower is sterile. Glumes are 1/8 inch long, ovate, pointed at the tip and strongly nerved. Seeds are smooth, shiny, olive brown to black. Seedlings can often be identified by the attached seed on the roots.

The exact origin of wild-proso millet is not known; however, it may have come from Asia or central Europe. Wild-proso millet is a prolific seed producer and a vigorous competitor in row crops. The seed can be spread by harvesting equipment, uncomposted manure, birds, small animals and irrigation water. Infestations often start at field entrances or along roadsides, so careful attention should be paid to these areas to prevent establishment. Flowering and seed production occur from July to September.



*Seedlings are hairy with wide leaves. Careful removal from the soil often exposes the characteristic black undeteriorated seed.*



*Seed color, ranging from olive brown to black, is the only positive identification characteristic distinguishing wild proso millet from domestic proso millet (which has yellow or light brown seed as shown in the lower right corner of photo).*

## Dallisgrass

*Paspalum dilatatum* Poir.



**Dallisgrass**  
Poaceae  
(Grass family)

A perennial, 1/2 to 5 feet high, originating from a hard, knotty base, that reproduces only by seed. Leaf blades are flat, 2 to 6 inches long and 1/4 to 1/2 inch wide. The inflorescence consists of 3 to 5 narrow branches which are 1 to 3 inches long and alternate along the upper part of the flowering stem. Spikelets are about 1/8 inch long and form an even row along one side of the spike. The seed is yellowish, about 1/8 inch long and circular.

Dallisgrass is a native of South America and can be found in the southwestern United States in moist areas such as irrigated pastures, turf and ornamental groundcovers.



*Flower stems of dallisgrass are branched with spikelets arranged on one side.*



*Dallisgrass leaves are flat, smooth and without hairs or auricles and are produced in abundance at the base of the plant.*

## Kikuyugrass

*Pennisetum clandestinum* Hochst. ex Chiov.



**Kikuyugrass**  
Poaceae  
(Grass family)

A prostrate perennial which grows rapidly and aggressively, particularly during the summer months, spreading from rhizomes and stolons. Leaves vary from 1 to 6 inches in length and 1/8 to 1/2 inch in width with a collar of upright bristles where the leaf blade joins the stem. The flowers are borne inconspicuously at the stem nodes. However, filamentous anthers are produced in the early morning that appear above the surface of the turf, giving a whitish cast to the area.

Kikuyugrass is an introduced species from East Africa and is commonly a weed problem in turf, groundcover and along ditchbanks in the coastal regions of California and Hawaii. Flowering begins in March and continues through October.



*Stolon of kikuyugrass.*



*Leaves of kikuyugrass contain upright bristles within the collar.*



**Reed canarygrass**  
*Phalaris arundinacea* L.



**Reed canarygrass**  
Poaceae  
(Grass family)

Stout perennial that regenerates from large rootstocks, with stems 2 to 7 feet tall that are covered with a waxy coating that gives it a blue-green color. Leaf blades are flat, 1/4 to 3/4 inch wide. The panicle is more or less compact at first, then the branches spread.

This aggressive species is found on wet ground, along streams and in marshes in all of the western region. It is especially a problem when growing in canals and irrigation ditches.



*Ligules of reed canarygrass are distinct while auricles are somewhat blunt.*



*Panicles are initially compact but open fully at maturity.*

**Littleseed canarygrass**  
*Phalaris minor* Retz.



**Littleseed canarygrass**  
Poaceae  
(Grass family)

Erect winter annual, 1/2 to 3 feet tall, with bluish-green foliage and weak stems that are bent at the base. Leaves are flat or folded, 1/4 to 1/2 inch wide, 10 to 18 inches in length. Flowering head short, thick and oblong, 1 to 3 inches in length. Spikelets densely crowded and overlapping in the heads. Glumes surrounding the spikelet are sharply pointed and sharply folded. Shiny straw-colored seeds are egg-shaped, pointed at the tip and about 1/8 inch long.

Littleseed canarygrass is a native of the Mediterranean and can be found in barley, wheat, seedling alfalfa and other winter-cultivated crops in California and Arizona. It flowers in April and May.

Non-standard name: canarygrass.



*Flat or slightly folded leaves are 1/4 to 1/2 inch wide and 10 to 18 inches long with open leaf sheaths.*



*Young seedlings often exude a red pigment or "blood" when broken at the base.*

**Common reed**

*Phragmites australis* (Cav.) Trin. ex Steud.



**Common reed**  
Poaceae  
(Grass family)

A tall rhizomatous perennial that is often strongly stoloniferous. Plants are typically 6 to 10 feet tall. Leaf blades can be more than 2 feet long and 1 to 2 inches wide. Blades of lower leaves may break off naturally due to an abscission layer near the membranous ligule. The inflorescence is a large, dense, feathery panicle that is sometimes used in dried floral arrangements. Panicle colors ranges from nearly black, to purplish, to brown, to light tan.

Common reed is found along waterways, and in brackish and freshwater marshes throughout the world. It can form dense stands of nearly impenetrable vegetation when allowed to invade shallow marshes and wetlands. Common reed has been called *Arundo phragmites*, and is sometimes confused with giant reed (*Arundo donax*) which can grow up to 30 feet tall. Unlike common reed, giant cane has hairy lemmas and a glabrous rachilla.



Leaves of common reed are typically aligned in 1 or 2 vertical rows along the stem.



The inflorescence of common reed is a large, dense, "feather-like", showy plume that is sometimes used in floral arrangements.

**Annual bluegrass**  
*Poa annua* L.



**Annual bluegrass**  
Poaceae  
(Grass family)

Annual with more or less flattened stems that are spreading or erect. The stems are from 2 to 12 inches long, sometimes forming dense clumps. The leaves are bright green and soft with the tip curved and prow-like. The inflorescences are more or less pyramidal, the branches spreading.

This native of Europe is found throughout the West. It thrives in lawns, gardens, cultivated crops, roadsides, and other open areas. Annual bluegrass can be especially troublesome in lawns where it tends to grow faster than other grasses and once mature it dies, resulting in brown spots in the lawn. It is commonly found as an impurity of lawn grass seed, and is a weed for grass seed producers. The flowering and seed production period is March to August.

Non-standard names: poa, poa annua.



*Seedlings can develop rapidly to maturity, producing seed in as little as 6 weeks.*



*Leaf blades are curved upward on the edges and tip, giving them a canoe shape.*



**Bulbous bluegrass**

*Poa bulbosa* L.



**Bulbous bluegrass**  
Poaceae  
(Grass family)

A perennial that grows from basal bulbs, the culms closely clustered, 1/2 to 2 feet tall. Leaf blades are narrow, flat or loosely rolled; with membranous ligules about 1/8 inch long. Flowers are modified to bulblets with a dark purple base.

Introduced from Europe, bulbous bluegrass is now weedy in pastures, grain fields and roadsides in scattered areas of most states in the West.



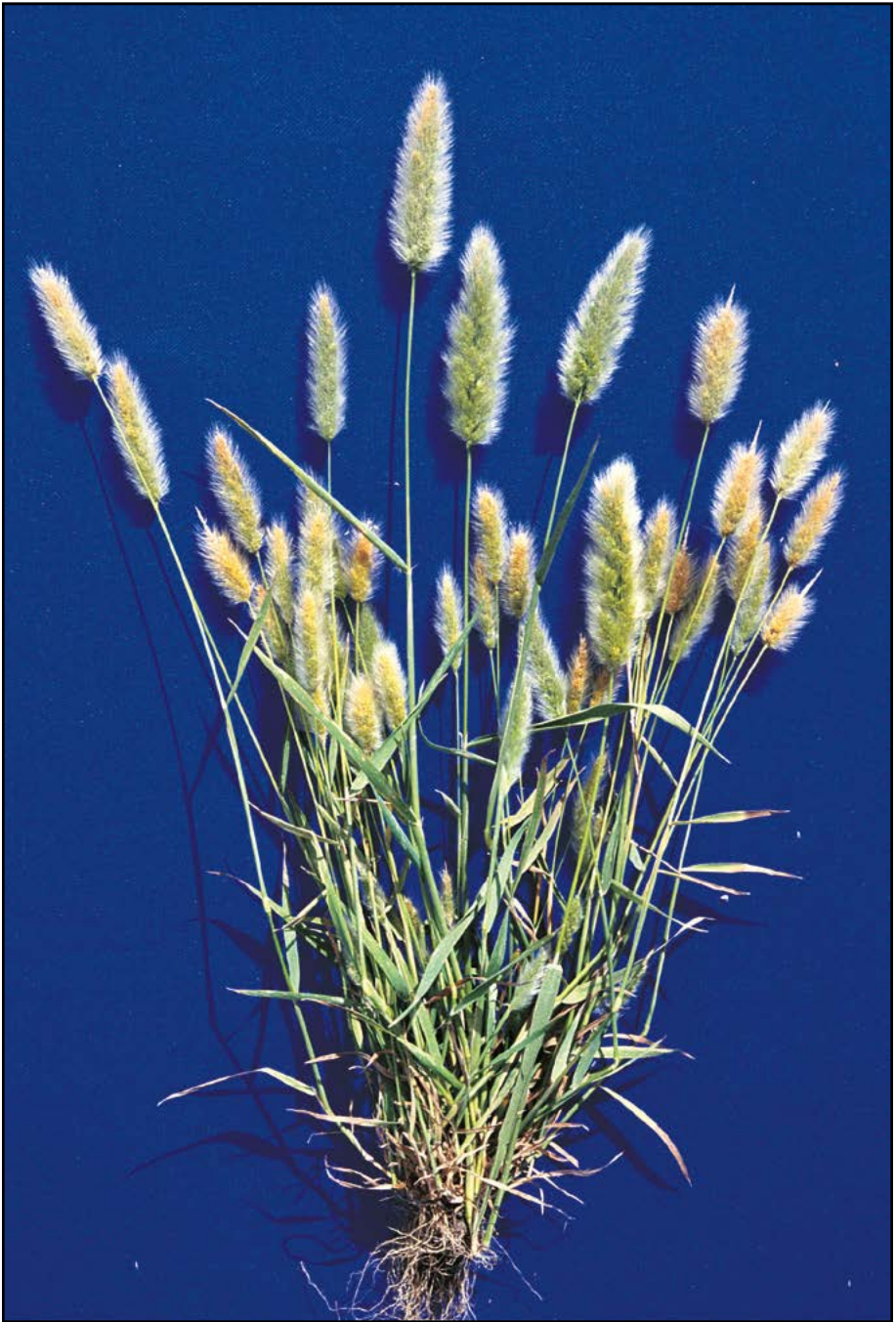
*Panicles produce flowers which are modified to propagative bulblets.*



*Bulbs are found at the base of mature bulbous bluegrass plants.*

**Rabbitfoot polypogon**

*Polypogon monspeliensis* (L.) Desf.



## Rabbitfoot polypogon

Poaceae  
(Grass family)

An erect or prostrate-based, shallow-rooted, annual grass growing 1/2 to 2 feet tall. Leaves are narrow and often abruptly bent. Large, soft, pale green, spike-like panicles somewhat resemble the shape of a furry rabbit foot, hence the common name.

Rabbitfoot grass is an introduced species native to Eurasia and Africa that has become widely distributed in the United States. It is often found along roadsides, waterways, and marshy or saline waste areas. It can become a problem in pastures and lawns.

Non-standard name: rabbitfoot grass.



*The leaf sheath, leaf blade, and collar region are useful identification characteristics of the plant.*



*Large "furry" seedheads somewhat resemble the shape of a rabbit's foot.*

**Cereal rye**  
*Secale cereale* L.



**Cereal rye**  
Poaceae  
(Grass family)

An annual, or occasionally biennial, 18 to 40 inches tall. Leaf blades flat, 1/16 to 3/8 inch wide, rough, at least above, with open sheaths, usually with well-developed auricles, and a membranous ligule. Leaf sheaths may be hairy or smooth. The inflorescence is a terminal spike, somewhat flattened, and often with short awns.

This is the domestic cereal rye grown widely throughout North America. However, field contamination from volunteer rye often creates a serious problem for wheat producers. When rye escapes cultivation it can become established on roadsides, waste places, and even open rangeland.

Non-standard name: common rye, feral rye.



*Leaf sheaths of Cereal rye may be smooth or hairy and have auricles that are usually well developed.*



*Flattened 2-sided seedheads have short awns.*

## Yellow foxtail

*Setaria pumila* (Poir.) Roemer & J.A. Schultes



## Yellow foxtail and Green foxtail

Poaceae  
(Grass family)

Yellow foxtail is a tufted annual, 1 to 3 feet tall, with erect stems that branch at the base. The leaf blade is smooth, 1/8 to 3/8 inch wide with distinct hairs on leaf margins near the base. Leaf sheath smooth, 2 to 8 inches long and 1/2 inch wide. Panicles cylindrical, with crowded spikelets that are subtended by 6 to 10 long yellowish bristles. Seeds are broadly oval, green to yellow to dark brown, coarsely roughened and approximately 1/8 inch long.

Green foxtail (*Setaria viridis* (L.) Beauv.) is generally shorter in height with roughened leaf sheaths, without hairs, and has much smaller seeds.

These plants are native to Eurasia, but common throughout most of North America (green foxtail is more common than yellow foxtail in the West). They are often serious problems in spring-seeded alfalfa, row crops, and small grain crops, but they also occur along roadsides and in waste areas. These plants are responsible for reductions in yield, increased cleaning costs, and expensive control measures. Flowering and seed production occur July to September.

Nonstandard name: pigeongrass.



Prior to seedhead emergence, yellow foxtail and green foxtail look identical, except that yellow foxtail has numerous long hairs at the base of the leaf.



The heads of green foxtail (top) are usually greener and larger than yellow foxtail. Yellow foxtail (bottom) has larger seed that can be seen in the head.



**Bristly foxtail**

*Setaria verticillata* (L.) Beauv.



**Bristly foxtail**  
Poaceae  
(Grass family)

An annual, 1 to 3 feet tall. Leaf blades flat, 3/16 to 1/2 inch wide, smooth or with a few hairs near the base on the upper surface, having open sheaths and lacking auricles, with a ligule of hairs or a hair-fringed membrane. The inflorescence is a spike-like panicle that appears somewhat segmented or interrupted. Spikelets are subtended by long scabrous bristles that remain attached to the rachis after seeds drop.

Bristly foxtail, a native of Eurasia and Africa, closely resembles green foxtail when in the vegetative growth stage. The primary difference between this and other *Setaria* species is the fact that minute barbs on the stiff bristles of *S. verticillata* are oriented downward, rather than outward, causing seed-heads to cling strongly to clothing and animals.

Non-standard name: bur bristlegrass.



*Comparisons of bristly foxtail (top) and green foxtail seedheads.*



*Notice the open leaf sheath and hairy ligule of bristly foxtail.*

## Johnsongrass

*Sorghum halepense* (L.) Pers.



**Johnsongrass**  
Poaceae  
(Grass family)

Johnsongrass is a vigorous perennial plant resembling sudangrass that spreads by seed or by creeping, robust fleshy rhizomes. Erect stems are generally solid, have prominent nodes, and grow 2 to 8 feet tall. Leaf blades are flat with conspicuous midveins, and are often as much as 1 inch wide. Ligules are short and membranous, with a terminal fringe of fine hairs. Mature inflorescence is a large open panicle bearing many awn-tipped, shiny, reddish to purple spikelets. Awns are bent and needle-like, and not all spikelets have awns.

Johnsongrass was introduced from the Mediterranean region as a hay or forage crop. Once thought of as strictly a warm season grass, it has adapted and can be found in most of the western states. Plants form hydrocyanic acid when frosted or under moisture stress, making the plant toxic to livestock.



*Ligules are short and membranous, with a fringe of fine hairs.*



*A common method of propagation is from large fleshy rhizomes in addition to seed.*

## Medusahead

*Taeniatherum caput-medusae* (L.) Nevski



## Medusahead

Poaceae  
(Grass family)

An aggressive winter annual 6 to 24 inches tall. Leaf blades more or less rolled, generally 1/8 inch wide or less. Inflorescence a long-awned spike that is nearly as wide as long. Mature awns twisted, 1 to 4 inches long, stiff, and minutely barbed.

Flowering and seed formation occur in May and June. Sometimes confused with foxtail barley or squirreltail, medusahead can be distinguished by the fact that its spike or head does not break apart as seeds mature and that it is an annual. Instead, individual awned-florets fall away, leaving a bristly head made up of awn-like glumes that will persist over winter. Medusahead seedlings appear similar to downy brome, except the latter is much hairier.

Medusahead, introduced from Eurasia, is predominant on millions of acres of semi-arid rangeland in the Pacific Northwest. It is extremely competitive, crowding out even such undesirable species as downy brome. Infested ranches have suffered 40 to 75 percent reductions in grazing capacity.

Non-standard name: medusahead rye.



*Medusahead is a highly competitive plant that crowds out all other vegetation on infested rangeland.*



*Twisted awns or beards are a good identification characteristic of medusahead.*

**Ventenata**

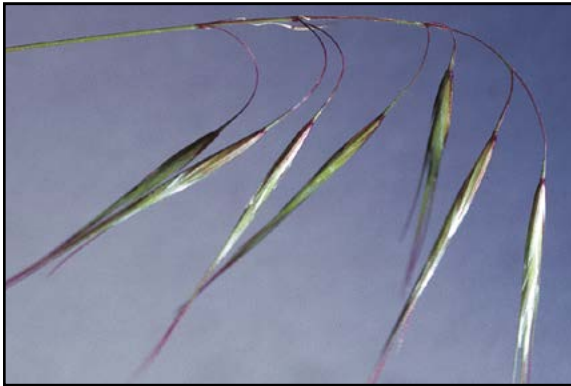
*Ventenata dubia* (Leers) Coss. in Dur.



**Ventenata**  
Poaceae  
(Grass family)

A slender erect annual, 6 to 27 inches tall. Leaves rolled lengthways or folded, narrow,  $\frac{3}{4}$  to  $2\frac{3}{8}$  inches long, sheaths open, ligules membranous, cut into narrow segments. Inflorescence a more or less lax, open, pyramidal panicle, to 8 inches long, tawny to light yellow, with a distinct sheen. Spikelets are  $\frac{7}{16}$  to  $\frac{5}{8}$  inch long, near the ends of long branches; lowest floret is sharp-pointed to short-awned, the awns to  $\frac{3}{16}$  inch long, straight. The awns on the upper florets are  $\frac{3}{8}$  to 1 inch long, bent and twisted (see insert on opposite page).

A Eurasian species, ventenata occurs in grain crops, rangeland and disturbed sites. Cattle will not graze it once the panicles emerge.



*The upper florets in a ventenata spikelet have bent awns and a hairy callus.*



*Ventenata seed resembles wild oat but is smaller. Spikelets are  $\frac{7}{16}$  to  $\frac{5}{8}$  inch long, near the ends of long branches.*



**Rattail fescue**

*Vulpia myuros* (L.) K.C. Gmel.



**Rattail fescue**  
Poaceae  
(Grass family)

An annual up to 25 inches tall. Leaf blades are folded and less than 1/16 inch wide. The sheaths and blades are hairless. The panicles are narrow and up to 8 inches long. Florets have awns which are 5/16 to 3/8 inch long.

Introduced from Europe and irregularly scattered in the West in wasteland, fields, and in overgrazed areas.

Synonym: *Festuca myuros* L.



*A seedling of rattail fescue; notice the narrow, tightly folded leaves.*



*The narrow, awned panicles of rattail fescue are a useful identification characteristic.*

**Prostrate knotweed**  
*Polygonum aviculare* L.



**Prostrate knotweed and Silversheath knotweed**  
Polygonaceae  
(Buckwheat family)

Prostrate annual, 1 to 3 feet tall, with wiry corrugated stems that are enlarged at each joint. Leaves are hairless, alternate and lance-shaped to oblong, 1/2 to 2 1/2 inches long and 1/8 to 1/3 inch wide with silvery papery sheaths at each node. Flowers are small and pink, occurring in clusters along the flower stems at leaf axils. Flowering stems compose about half of the height of a mature plant. The seed is about 1/16 inch long, 3-angled and reddish-brown.

Silversheath knotweed (*Polygonum argyrocoleon* Steud. ex Kunze) was probably introduced from central Asia and is a weed in croplands, horticultural and ornamental production areas in Arizona and California. It flowers in late winter and early summer.



Seedling with strap-shaped cotyledons and lance-shaped true leaves.



Silversheath knotweed has showy papery sheaths at the axil of each leaf.

**Wild buckwheat**

*Polygonum convolvulus* L.



**Wild buckwheat**  
Polygonaceae  
(Buckwheat family)

An annual weed with stems trailing along the ground, often twining about other plants. Leaves are heart-shaped with a tapered point, and are arranged alternately along the stem. An inconspicuous papery sheath encircles the stem at the base of each leaf petiole. Clusters of tiny greenish flowers are borne in leaf axils. Seeds are triangular, dull black, slightly roughened and about 3/16 inch long.

Wild buckwheat was introduced from Europe, and is now a common weed in cultivated fields, gardens, orchards and non-crop areas of our region. Superficially resembling field bindweed, wild buckwheat can be distinguished by its annual habit, pointed leaves, papery leaf sheaths and small green flowers. (Bindweed flowers are white to lavender, large, showy and trumpet-shaped.)



*Seedling plants have strap-shaped cotyledons and distinctive heart-shaped leaves.*



*Clusters of greenish flowers are borne in leaf axils. Each flower produces a hard, triangular black seed.*

## Japanese knotweed

*Polygonum cuspidatum* Sieb. & Zucc.



**Japanese knotweed**  
Polygonaceae  
(Buckwheat family)

Perennial from long creeping rhizomes. Stems are stout, reddish-brown, 4 to 9 feet tall, woody but die back at end of growing season. The nodes are slightly swollen and surrounded by thin papery sheaths. Leaves are short-petioled, broadly ovate, 2 to 6 inches long and about two-thirds as wide, narrowed to a point. The flowers are greenish white to cream, borne in large plume-like clusters at ends of stems and in leaf axils. The fruit is 3-sided, black and shiny.

Introduced from Asia as an ornamental, now escaped to become a weed of roadsides, waste areas, ditchbanks, and pastures.

Non-standard names: fleecflower, Japanese bamboo.



*Leaves are short-petioled and broadly ovate, 2 to 6 inches long.*



*Small flowers are grouped in plume-like clusters at ends of stems and in leaf axils.*



**Erect knotweed**  
*Polygonum erectum* L.



**Erect knotweed**  
Polygonaceae  
(Buckwheat family)

Extremely variable annual with wiry stems. Nodes are somewhat swollen, often surrounded with the torn remnant of a short, papery leaf sheath. Leaves are generally lance-shaped, blue-green and alternate. Inconspicuous, greenish-white flowers are borne in the leaf axils.

Several species occur in the western region. The basal branches of prostrate knotweed (*P. aviculare* L.) become prostrate, while erect knotweed (*P. erectum*) is more upright. Erect and prostrate knotweeds are natives of the Old World, but are now distributed throughout North America. They can become a problem in irrigated and dryland crops, as well as in waste areas and other non-crop sites. Prostrate knotweed seems to thrive in dry compacted soils.

Non-standard names: devil's shoestring, wireweed.



*Prostrate knotweed lies flat on the soil surface; erect knotweed is upright.*



*In erect and prostrate knotweeds inconspicuous greenish-white flowers are borne in leaf axils.*

**Pale smartweed**

*Polygonum lapathifolium* L.



## Pale smartweed and Ladysthumb

Polygonaceae  
(Buckwheat family)

Annual weeds, with erect or spreading stems usually 1 to 3 feet long. Stems may initiate roots at lower nodes. Leaves are alternate, narrow, lance-shaped, often marked with a characteristic pink or purplish “lady’s thumbprint” near the middle. Leaf nodes are conspicuous and sheathed, as is common with most members of this genus. Flowers are small, pink or rose-colored; they are borne in dense, erect, terminal and axillary spikes approximately 1 inch long. Pale smartweed (*P. lapathifolium*) and ladysthumb (*P. persicaria* L.) are similar in appearance, but may be differentiated by the fact that ladysthumb sheaths are tipped with short bristles, while those of pale smartweed lack bristles. Pale smartweed spikes tend to be longer, and the flowers a lighter pink. Ladysthumb seeds are shiny, black, and may be either flattened or 3-angled. Pale smartweed seeds are flattened, shiny and brown.

These species are often found in wet or moist undisturbed sites, but they can also become troublesome in cultivated fields and irrigated pastures. Several other species also occur in our region. Other related species resembling ladysthumb include swamp smartweed (*P. amphibium* L. var. *emersum* Michx.) and water smartweed (*P. amphibium* L. var. *stipulaceum* Coleman).



Ladysthumb leaves have a darkened area near the center of the leaves.



Smartweed leaf sheaths are very apparent clear membranes.

**Red sorrel**

*Rumex acetosella* L.



**Red sorrel**  
Polygonaceae  
(Buckwheat family)

Perennial with slender creeping rootstocks. Stem somewhat woody at the base, 1/2 to 2 feet tall, little branched. Blade of the lower leaves somewhat arrow-shaped with 1 or 2 conspicuous basal lobes. Upper leaves are more slender and sometimes without basal lobes. The slender petiole has a papery sheath at point of attachment to stem. Leaves and stems have a sour taste. Flowers are borne in branched terminal clusters. The plants are dioecious, the male flowers are orange-yellow and the female flowers are red-orange. The fruits are small, 3-angled, enclosed in 3 reddish, persistent flower parts. The triangular seeds are polished mahogany colored.

Red sorrel is native to Europe and can be found throughout the West. While apparently thriving on acid soils, it has adapted to other soils and various growing conditions and often occurs in lawns, fields, gardens, and along roadsides.

Non-standard name: sheep sorrel.



*Arrowhead-shaped leaves lobes at base of blade.*



*Small reddish flowers are found on flower stalks up to 2 feet long.*

**Curly dock**

*Rumex crispus* L.



## Curly dock Polygonaceae (Buckwheat family)

A robust tap-rooted perennial growing 2 to 5 feet tall. Stems are erect, generally unbranched on the lower half, often reddish and slightly ridged. Leaves are mostly basal, with curly or wavy margins, elongated, 4 to 12 inches long and lack hairs. Flowers are small and in dense, green, spike-like, terminal and axillary clusters. Inflorescences and even entire plants turn reddish-brown at maturity. Individual seeds are enclosed in a papery, sometimes corky, winged structure, 1/8 to 3/16 inch long, that facilitates distribution by wind or water.

Broadleaf dock (*R. obtusifolius* L.) can be distinguished by its broader leaves and the presence of 1 to 3 spines on the wing structure of the fruit. *Rumex* species are native to Eurasia. They are especially common in wet meadows, along ditchbanks and in waste areas.

Non-standard names: sour dock and yellow dock.



The wide leaf of broadleaf dock.



The spined wing structure of broadleaf dock fruits (right) compared to the smooth wing margins of curly dock (left).



## Redmaids

*Calandrinia ciliata* (Ruiz & Pavón) DC.



**Redmaids**  
Portulacaceae  
(Purslane family)

Annual somewhat fleshy plant with low and spreading to more or less erect stems. The leaves are narrow and strap-shaped. Flowers are borne in axils of upper leaves and have petals that are rose-red or rarely white. Seeds are numerous, black and shiny.

A native species found in areas that are moist, at least in the spring; it often becomes weedy in cultivated fields and orchards.

Non-standard name: desert rockpurslane.



*Narrow, strap-shaped leaves of a seedling rosette help in early identification.*



*Flowers have 5 petals (usually red), 2 sepals, 5 to 12 stamens and 3 stigmas.*

**Miner's lettuce**

*Claytonia perfoliata* Willd.



**Miner's lettuce**  
Portulacaceae  
(Purslane family)

A low fleshy annual with basal leaves varying from narrow and strap-shaped to those which are long-petioled, and broad-bladed. Two leaf types include the circular leaf pairs below the flowers and ovate singular leaves. Pairs of stem leaves unite around the stem to form a rounded or 2-angled disk below the white or pink flowers.

This species is widely distributed in the West. It is usually found in moist, shady areas.



*Seedlings have long linear cotyledons while first leaves are spatulate.*



*A pair of leaves unite around the stem to form a 2-angled disk below the flower.*

**Common purslane**  
*Portulaca oleracea* L.



**Common purslane**  
Portulacaceae  
(Purslane family)

A fleshy, prostrate annual with smooth reddish or flesh-colored stems. Branches radiating from a central rooting point reach lengths in excess of 12 inches and form dense vegetative mats. Smooth, shiny, succulent leaves are somewhat teardrop-shaped, wider at the tip than at the base. Five-petaled yellow flowers are borne singly in leaf axils, and open only in sunshine. Numerous, tiny, black seeds are produced in capsules resembling flower buds.

Introduced from Europe, common purslane has become a troublesome weed in cultivated fields and gardens. It is especially persistent in soils that remain moist much of the time. Production of seed throughout the growing season, and the ability to root again after cultivation make this plant especially difficult to control. Seeds can remain dormant in the soil for years before germinating. Purslane has limited value as a potherb, but is rarely eaten.



*Seedlings of purslane have teardrop-shaped succulent leaves that are wider at the tip than at the base.*



*Leaves and stems are fleshy with small yellow flowers appearing in leaf axils in late summer.*

**Geyer larkspur**  
*Delphinium geyeri* Greene



**Geyer larkspur**  
Ranunculaceae  
(Buttercup family)

Geyer Larkspur is a perennial with hollow stems that grows up to 2 feet tall with tuberous woody roots. Leaves are finely divided, lobed into 3 to 5 divisions that are lobed again. Flowers, terminal, purple, with a distinct spur pointing backwards; seeds borne in an upright pod.

Geyer larkspur is native to the Rocky Mountain region and is common on western rangelands in the plains and mountain areas. It is similar in appearance to duncecap larkspur but may be distinguished by its smaller, more finely divided leaves. It flowers in the spring, grows in lower elevations, and is smaller in height. Toxic alkaloids cause fatal poisoning in cattle, whereas sheep and horses are rarely affected. It is rarely eaten after it reaches maturity in late June. Cattle losses may be reduced by keeping them off infested ranges until other forage is available, grazing with sheep before allowing cattle to graze, or by using other management practices.



*Early spring growth of geyer larkspur is the most poisonous to cattle because it is one of the first rangeland plants to appear in spring.*



*Flowers, connected to the main stem by pedicels, have 4 less conspicuous petals and 5 sepals with a spur on their back sides.*



**Low larkspur**

*Delphinium nuttallianum* Pritz. ex Walp.



**Low larkspur**  
Ranunculaceae  
(Buttercup family)

A simple, rarely branched perennial, typically reaching 10 to 20 inches in height, arising from a shallow, clustered, tuberous root system. Leaves are deeply parted into linear finger-like lobes. Large showy flowers are blue-purple or sometimes pale blue to white, with prominent spurs. Normally, 3 spreading, beaked, seed follicles form from each flower.

Low larkspur is widespread throughout the West. It is listed by some authors as *D. menziesii* DC. and *D. nelsonii* Greene. At least 20 species or varieties of *Delphinium* are reported in the West. Like many other members of the genus, low larkspur is poisonous to livestock.



*Leaves are 3- to 5-parted with finger-like lobes.*



*Violet, lavender, or white spurred flowers each produce 3 beaked seed follicles.*

**Duncecap larkspur**

*Delphinium x occidentale* (S. Wats.) S. Wats. (pro sp.) [*barbeyi* x *glaucum*]



**Duncecap larkspur**  
Ranunculaceae  
(Buttercup family)

A hollow-stemmed perennial up to 5 feet tall from woody tuberous roots. Leaves are large, dissected, alternate, lobed into 3 to 5 divisions that are lobed again. Flowers, in terminal racemes, purple, with a distinct spur pointing backwards. Seeds are borne in an upright pod.

It is native to the Rocky Mountain region and may be distinguished from geyer larkspur (*D. geyeri* Greene) because it grows at higher elevations, is usually much taller, has larger leaves and stems, and flowers in the summer instead of spring. All parts of the plant including seeds contain toxic alkaloids. Fatal poisoning occurs mainly in cattle, whereas losses rarely occur in sheep and horses. Cattle losses may be minimized by keeping them off larkspur infested ranges until other forage is available or grazing the area with sheep before allowing cattle to graze.

Non-standard name: tall larkspur.



*Leaves are alternate on stems. Each leaf is lobed into sections then individual sections are lobed again.*



*Purple flowers contain 5 sepals with a spur-like appendage pointing backwards. Each flower is connected to the stem by a pedicel.*

**Tall buttercup**

*Ranunculus acris* L.



**Tall buttercup**  
Ranunculaceae  
(Buttercup family)

Hairy perennial, often reaching 3 feet in height, with stems much branched above. Lower leaves 3- to 5-lobed, deeply cut, upper leaves reduced and consisting of 3 to 4 narrow segments. Flowers yellow, 1 inch or more in diameter.

Roughseed buttercup, also known as spiny-fruited buttercup (*R. muricatus* L.), is an annual, 1/6 to 1 foot tall. Leafy branching stems single or clustered. Leaves petioled, blades 3- to 5-lobed, toothed. Fruit 1/4 inch or slightly longer with smooth border, stout curved beak, and generally a spiny surface.

These species were introduced from Europe. Roughseed buttercup is common in the West, but tall buttercup is now well established throughout most of North America. Buttercup species usually occur in meadows and pastures and are generally avoided by livestock. Like other species of *Ranunculus*, tall buttercup has been reported to cause livestock poisonings.



Leaves of tall buttercup (right) and roughseed buttercup (left) are similar, with lobed and deeply cut margins.



Roughseed buttercup has 1/4 inch long fruit with a smooth border and a spiny surface.

**Creeping buttercup**  
*Ranunculus repens* L.



**Creeping buttercup**  
Ranunculaceae  
(Buttercup family)

Perennial that creeps and roots at the lower nodes of the hairy stems. Leaves are hairy with long petioles, the blades are 3-parted with toothed margins. Flower stems are long and erect; flowers are few and showy with yellow petals. Seedheads contain about 12 fruits, each about 1/8 inch long. Fruits are flattened and rounded, with a short backward-turned beak.

Creeping buttercup was introduced from Europe as an ornamental and now is considered weedy in moist locations. It is aggressive in pastures and is toxic to cattle.



*Seedling cotyledons are ovate with short petioles. The first leaf has 3 lobes.*



*Buttercup flowers have 5 waxy petals, and mature into beaked fruits. Flowers are borne on long stalks.*



**Bur buttercup**

*Ceratocephala testiculata* (Crantz) Bess



**Bur buttercup**  
Ranunculaceae  
(Buttercup family)

A low-growing annual, 2 to 5 inches tall. Grayish-green leaves are basally attached, 1 to 4 inches long, with blades divided into finger-like segments. Yellow flowers, 5-petaled, develop into stiff brown burs about 1/2 to 3/4 inch in length.

Plants emerge, flower, and form fruit early in the spring, soon after snow-melt. Bur buttercup is a native of southeastern Europe. It has become a common weed in small grains, pastures, waste areas and along roadsides in several western states, including California, Oregon, Washington, Nevada, Utah, Idaho and Colorado. Bur buttercup can be competitive, especially in dryland small grain crops. It is highly toxic to sheep.

Non-standard name: testiculate buttercup.



*Seedlings have strap-shaped cotyledons with first leaves deeply toothed.*



*Yellow flower and immature bur.*

**Sulfur cinquefoil**  
*Potentilla recta* L.



**Sulfur cinquefoil**  
Rosaceae  
(Rose family)

Sulfur cinquefoil is a perennial, 1 to 1 1/2 feet tall, with well developed root-stocks. Leaves palmately compound with 5 or 7 toothed leaflets on each leaf. Leaves that are sparsely hairy appear green on the underside rather than silvery as in many *Potentilla* species. Flowers light yellow with 5 petals, producing numerous single-seeded oval achenes.

Sulfur cinquefoil is often found in disturbed areas such as roadsides and pastures. Colonies of plants are also often seen in undisturbed sites. Flowering occurs from May to July.



*Each compound leaf has from 5 to 7 toothed leaflets.*



*Light yellow flowers have 5 petals that are deeply notched. Yellow centers of flowers contain numerous stamens.*

**Catchweed bedstraw**  
*Galium aparine* L.



**Catchweed bedstraw**  
Rubiaceae  
(Madder family)

Native annual with slender taproots. The square stems have downward-pointing bristles, are weak, often tangling and may be up to 80 inches long. Leaves linear, stiff-hairy, mostly in whorls of 6 to 8. Flowers are minute, white, 4-parted, and borne on short branches in the leaf axils. Fruits are 2 nearly round halves, densely covered by fine hooked hairs.

Catchweed bedstraw is common throughout the region, and in recent years has become a serious weed in cultivated fields, particularly in hay or grain fields where it clings to, and tangles with the crop, making harvest difficult. The small bristly-hooked fruits also cling to wool, hair, and clothing. A related species, northern bedstraw (*G. boreale* L.), is perennial, reproducing by seed and creeping roots. This native differs from catchweed bedstraw by the creeping roots, the leaves are in whorls of 4, and the stem is erect.

Non-standard name: cleavers.



*Large ovate cotyledons on prominent petioles. The cotyledons are notched at the apex. The under-surface of the leaves is maroon.*



*Catchweed bedstraw flowers, borne on short branches in leaf axils, develop into 2-parted fruit.*

## Snapdragon

*Antirrhinum majus* L.



**Snapdragon**  
Scrophulariaceae  
(Figwort family)

Annual with stems that are much branched and 8 to 20 inches tall. The leaves are linear and 3/4 to 2 inches long. Flowers are axillary, pink-purple and about 5/8 inch long. The fruit is asymmetrical, opening by pores to release the numerous seeds.

Snapdragon has been found in coastal regions of Oregon, Washington and California.

Non-standard names: weasel's snout, calf's snout, lesser snapdragon.



*Asymmetrical, hairy fruit capsule with persistent style.*



*Flowers in the leaf axils near the plant tops.*



**Foxglove**

*Digitalis purpurea* L.



**Foxglove**  
Scrophulariaceae  
(Figwort family)

A large biennial with erect stems up to 3 to 6 feet tall. The lower leaves are up to 1 or more feet long and 5 inches wide with leaf margins that are toothed. The upper leaves are progressively smaller. Flowers are 1 1/2 to 2 3/8 inches long, nodding, white to pink to reddish purple, the lower side paler and dark-spotted within. The fruits contain many minute seeds.

A native of Europe that is well established in the Pacific Coast states. Originally introduced as an ornamental and for medicinal purposes, it now occurs in logged areas, along roadsides and in coastal pastures. It is reported to be toxic to livestock.

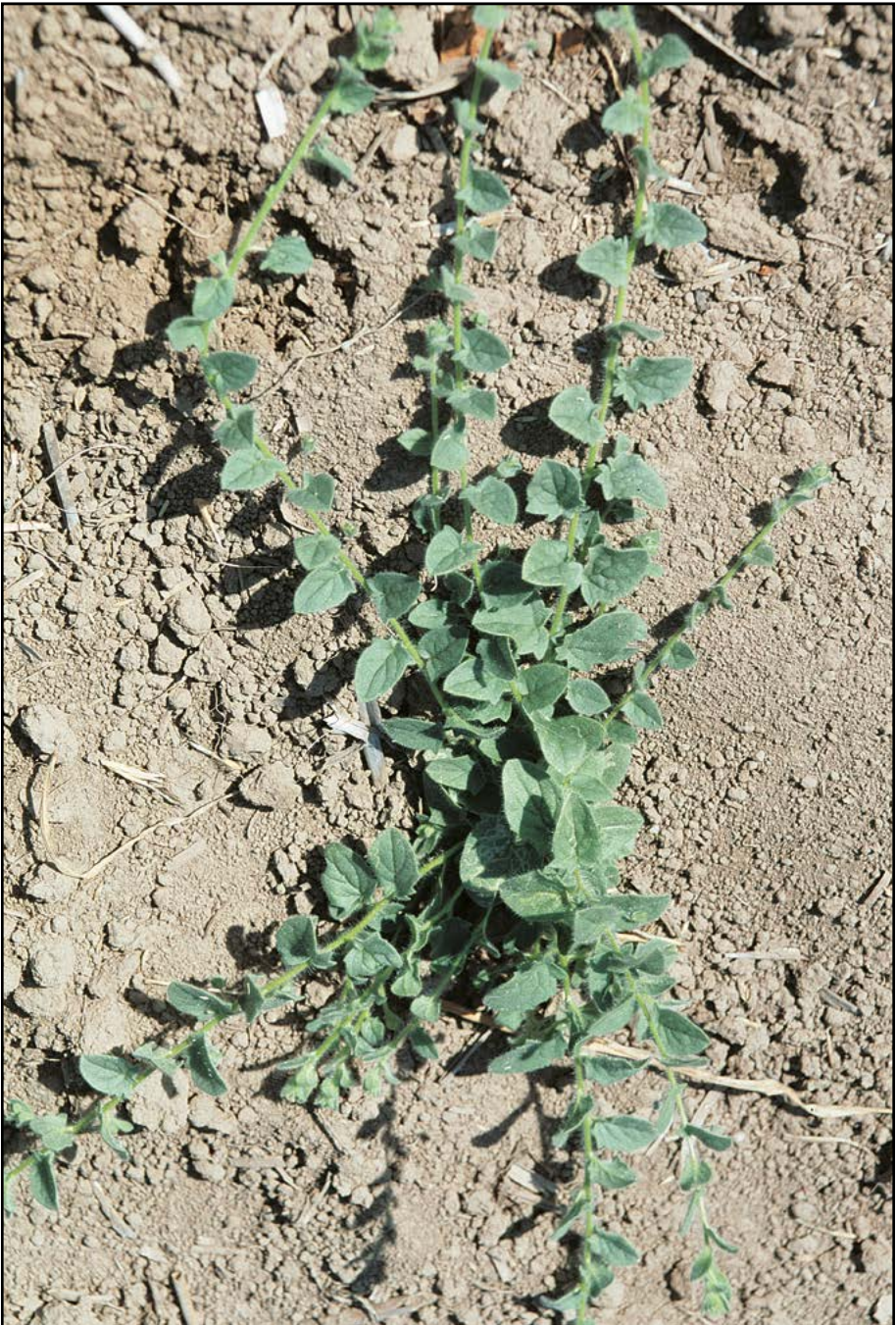


*Pink tubular flowers of foxglove.*



*Grouping of foxglove showing color variation in flowers.*

**Sharppoint fluvellin**  
*Kickxia elatine* (L.) Dumort.



**Sharppoint fluellin**  
Scrophulariaceae  
(Figwort family)

Creeping annual, much-branched, soft-hairy and somewhat sticky. The leaves are alternate, 1/2 to 1 inch long, early leaves are rounded but later leaves are usually broadly arrowhead-shaped but sometimes with more than one pair of basal lobes. Flowers are borne singly from the leaf axils on thread-like stalks up to 1 inch in length. Each is about 3/8 to 1/2 inch long including the spur. Flowers are 2-lipped, white to pale yellow with a purple upper lip. The fruit is nearly round, 3/16 inch across or less, opening at the top to release seeds.

Sharppoint fluellin is native to Europe. It can be found growing in moist, sandy soil, and is beginning to occur as a problem in nursery stock and field crops. Female fluellin (*K. spuria* (L.) Dumort.), also known as roundleaf fluellin, is similar but with rounded leaves.

Non-standard names: cancerwort, kickxia, fluellin.



*Early leaves of sharppoint fluellin are rounded but later become broadly arrowhead-shaped.*



*Irregular flowers have a spur.*

**Dalmatian toadflax**

*Linaria dalmatica* (L.) P. Mill.



**Dalmatian toadflax**  
Scrophulariaceae  
(Figwort family)

Dalmatian toadflax is a perennial, up to 3 feet tall, reproducing by seed and underground root stalks. Leaves are dense, alternate, entire; upper leaves are conspicuously broad-based. Flowers are borne in axils of upper leaves and are 2-lipped, 3/4 to 1 1/2 inches long with a long spur, yellow with an orange, bearded throat. Fruit a 2-celled capsule with many irregularly angled seeds.

Dalmatian toadflax was introduced from southeastern Europe, probably as an ornamental. It is aggressive and may be found along roadsides and on rangeland where it may become a serious problem by crowding out desirable forage. An extensive and deep root system along with a waxy leaf make this an extremely difficult plant to manage.



*Early spring growth of this prolific perennial has waxy leaves with a blue-green color. Leaves individually clasp the stem.*



*Yellow flowers with long spurs appear at mid-summer with plants continuing to flower until early fall.*

**Yellow toadflax**  
*Linaria vulgaris* P. Mill.



**Yellow toadflax**  
Scrophulariaceae  
(Figwort family)

Yellow toadflax is perennial, 1 to 2 feet tall, reproducing by seed and underground rootstocks. Leaves are pale green, numerous, narrow, pointed at both ends, 2 1/2 or more inches long. Flowers are 1 inch long with a bearded, orange throat. Fruit is round, 1/4 inch in diameter, brown, 2-celled, with many seeds. Seeds are dark brown to black, 1/12 inch in diameter, flattened with a papery circular wing.

Yellow toadflax is a native of Eurasia, introduced to the United States in the mid-1800s as an ornamental. This creeping perennial is an aggressive invader of rangelands, displacing desirable grasses. It is also found along roadsides, waste places, and cultivated fields. An extensive root system makes this plant difficult to control.



*Narrow leaves that are pointed at both ends are approximately 2 1/2 inches long and are individually connected to the central stem.*



*Yellow flowers with an orange throat have spur-like appendages.*



**Moth mullein**

*Verbascum blattaria* L.



**Moth mullein**  
Scrophulariaceae  
(Figwort family)

Taprooted biennial, producing a basal rosette of leaves in the first year which may persist through the second year, producing in the second year a single stem, 1 1/2 to 5 feet in height. Leaves of the rosette dark green, often reddish-tinged, usually shallowly lobed and toothed, tapering to a short stalk; leaves of the flowering stem merely toothed, becoming progressively reduced upwards, sessile and more or less clasping the stem. Flowers bright yellow or occasionally nearly white, 3/4 to 1 1/4 inches wide, slightly irregularly 5-lobed. Fruit splitting open to release the numerous seeds. Seeds widest at the top, grooved and deeply pitted.

Moth mullein is a native of Europe that is now widespread in temperate North America. It flowers from May to September. It occurs along roadsides, in waste areas, pastures and, occasionally, in agricultural crops.



*Leaves are dark green, very shallowly lobed and toothed, tapering to a short stalk.*



*Flowers are bright yellow, 3/4 to 1 1/4 inches wide, 5-lobed with maroon colored centers.*

**Common mullein**  
*Verbascum thapsus* L.



**Common mullein**  
Scrophulariaceae  
(Figwort family)

This biennial produces a large, thick rosette of fuzzy leaves the first year and a single, stout, erect stem, 2 to 6 feet tall, the second year. The leaves are alternate, overlapping one another, light green, densely woolly. Flowers are sessile, borne in long terminal spikes, sulfur yellow, 5-lobed and more than an inch in diameter. Fruits are 2-chambered with numerous, small, angular, brownish seeds, 1/32 inch long.

This weed was introduced from Europe, but it is a native of Asia and is common throughout the temperate parts of North America. It is a common sight along river bottoms, in pastures, meadows, fence rows and waste areas, especially on gravelly soils. Because of the large number of seeds produced by each plant, it is difficult to control. Livestock will not eat the plant because of its woolliness. Flowering and seed production occur from June to August.



*Common mullein produces a rosette the first year of its two-year life cycle. Leaves of this plant are covered with soft, fine hair.*



*Yellow 5-lobed flowers are borne on long stalks in late summer.*

**Bilobed speedwell**  
*Veronica biloba* L.



**Bilobed speedwell**  
Scrophulariaceae  
(Figwort family)

A shallow taprooted annual growing 2 to 12 inches tall. Stems may be single or branched, erect or spreading. Leaves are covered with short, stiff or glandular hairs, coarsely toothed, and normally less than 1 inch long. Flowers in terminal racemes of 1 to 25, blue and inconspicuous. Pale yellow seeds are contained in a flattened 2-lobed capsule that is cleft nearly to the base.

Capsule shape is perhaps the most reliable characteristic in distinguishing bilobed speedwell from other annual *Veronica* species. Bilobed speedwell was introduced from Asia. It is known as snow speedwell in some regions, and was listed as *V. campylopoda* Boiss. in some early publications. It is one of the first weeds to appear and complete its life cycle in the spring, taking advantage of early soil moisture, and thereby able to thrive in areas of limited precipitation. Bilobed speedwell is abundant in fields, foothills, waste places, and disturbed sites throughout many parts of the arid and semi-arid West, and a frequent problem in dryland wheat in the Great Basin region.



Seedlings have heart-shaped cotyledons and toothed leaves.



Flowers of bilobed speedwell are small, with blue petal margins and a white center.

**Purslane speedwell**  
*Veronica peregrina* L.



**Purslane speedwell**  
Scrophulariaceae  
(Figwort family)

An annual with stems that are usually much branched, erect or somewhat spreading, up to 12 inches tall. The leaves are linear, alternate or paired in the lower part of the plant. Lower leaves are short-petioled, upper leaves sessile. The flowers are minute, white and borne in leaf axils. The fruit is heart-shaped.

This species is native to North America. There are varieties that are glandular-hairy and others that are smooth.



*Minute white flowers are borne in leaf axils.*



*The fruit of purslane speedwell is heart-shaped.*



**Persian speedwell**  
*Veronica persica* Poir.



**Persian speedwell**  
Scrophulariaceae  
(Figwort family)

Annual or winter annual that forms a dense groundcover. Stems are weak, prostrate, often with ascending tips. Lower leaves are paired on the stem, while the upper leaves are alternate. Leaf blades are somewhat longer than broad, coarsely toothed, with short petioles. Flowers are sky-blue, having dark stripes with white centers and are borne on long slender stalks in the leaf axils. Fruits are heart-shaped and hairy.

A native of Eurasia, this plant was probably introduced as a border or rock garden ornamental. It is now widespread in the United States.

Non-standard names: birdseye speedwell, winter speedwell.



Notice the 3-lobed margin of ivyleaved speedwell (*V. hederifolia* L.) (left) compared to the toothed leaf-margin of Persian speedwell (right).



Persian speedwell has a heart-shaped fruit which develops from an irregular flower.

**Sacred datura**

*Datura innoxia* P. Mill.



**Sacred datura**  
Solanaceae  
(Nightshade family)

Sacred datura is a large, conspicuous grayish-green perennial with stems up to 3 feet tall and covered with fine gray hairs, giving the plant a waxy appearance. Leaves are alternate, egg-shaped, with petioles 1 to 5 inches long. Leaf blades green on the upper surface and grayish underneath, 3 to 10 inches long, remotely and inconspicuously toothed, and have conspicuous whitish veins. Flowers are white or pale lavender, broadly funnel-shaped, 6 to 10 inches across, with 5 slender teeth that are 1/2 to 3/4 inch long. The seedpod is covered with spines which are less than 3/8 inch long. Seeds are light yellowish-brown.

Sacred datura is a native perennial that grows in dry, sandy and gravelly soils. Small datura (*D. discolor* Bernh.) is a related annual plant which forms large clumps. Flowers of this plant are white, tinged with violet, mostly 2 to 4 inches long, 2 inches or less wide and have 10 slender teeth on the flower. Small datura is toxic and sacred datura is hallucinogenic.

Non-standard name of small datura: desert thornapple.



*The trumpet-shaped, white to lavender flowers of sacred datura have a 5-toothed corolla.*



*Globe-shaped seedpods of sacred datura contain many seeds.*

**Jimsonweed**

*Datura stramonium* L.



**Jimsonweed**  
Solanaceae  
(Nightshade family)

A rank-smelling annual with stems 3/4 to 5 feet tall. Leaves alternate, large, usually unevenly toothed to shallowly lobed. Flowers trumpet-shaped, 3 1/2 to 5 inches long, white in var. *stramonium* and purplish in var. *tatula* (L.) Torr. Fruits about 2 inches long, fleshy at first, but becoming dry and hard, covered by stout prickles. Seeds numerous, flattened, dark brown to black, minutely pitted.

Jimsonweed, thought to be of North American origin, is found on dry rangelands, vacant lots, and waste places. It is a source of hyoscyamine, a drug used as a sedative and hypnotic. The entire plant is toxic and people have been poisoned by seeds, flowers and leaves. Flowering occurs from June to September.

Non-standard names: Jamestown weed, thornapple.



Seedlings have linear cotyledons; first true leaves are lanceolate without hair.



Flowers are trumpet-shaped, 3 1/2 to 5 inches long. Colors range from white to purplish.

**Black henbane**

*Hyoscyamus niger* L.



**Black henbane**  
Solanaceae  
(Nightshade family)

Black henbane may be annual or biennial, 1 to 3 feet tall. Leaves are coarsely-toothed to shallowly lobed and pubescent. Foliage has a foul odor. Flowers, on long racemes in axils of upper leaves, are brownish-yellow with a purple center and purple veins. Fruits are approximately 1 inch long and 5-lobed.

Black henbane is a native of Europe and has been cultivated as an ornamental. It has spread throughout the United States and is a common weed of pastures, fencerows, roadsides, and waste areas. Black henbane contains hyoscyamine and other alkaloids which have caused occasional livestock poisoning. However, the plant is usually not grazed by animals and is consumed only when more palatable forage is not available. Henbane alkaloids have been used in the past, and are currently used, as medicines at controlled dosages. It is considered a poisonous plant to humans.



*Large rosettes having serrated leaves covered with fine hair. The plant has a pungent odor at all growth stages.*



*Two rows of pineapple-shaped fruit, about 1 inch long, appear in early fall. Within each capsule are hundreds of tiny black seeds.*



**Virginia groundcherry**  
*Physalis virginiana* P. Mill.



**Virginia groundcherry**  
Solanaceae  
(Nightshade family)

This perennial is 12 to 30 inches tall, reproducing by seeds and rootstalks. Stems are hairy, erect, widely branching. Leaves are alternate, oval, 2 to 3 inches long, with wavy to bluntly-toothed margins. Flowers are bell-shaped, yellow, with dark centers. Fruit is round, 3/8 to 1/2 inch in diameter, fleshy, with many seeds. Seeds are 1/20 inch in diameter, yellow, oval, flattened.

Virginia groundcherry is a native plant in the same family as potatoes and tomatoes. It grows in cultivated fields, along roadsides, ditches and in waste areas. It is especially troublesome in bean fields. Control of this perennial is difficult. Identification is difficult because of the similarity of species.



*Immature plants of Virginia groundcherry have narrow leaves, 2 to 3 inches long, with bluntly toothed margins.*



*Bell-shaped, yellow flowers with dark centers develop into a bladder-like, pear-shaped case which encloses the seed-bearing fruit.*

**Wright groundcherry**

*Physalis acutifolia* (Miers) Sandw.



## Wright groundcherry

Solanaceae  
(Nightshade family)

Summer annual with a bushy growth habit from 1 to 5 feet in height with alternate leaves which vary from 2 to 5 inches in length and 1/4 to 2 inches in width. Leaves are oblong or egg-shaped and mostly pointed at the tip. Leaf margins are irregularly toothed or cut and sometimes wavy. Flowers are wheel-shaped, whitish, 1/2 to 3/4 inch wide, with a large yellow stigma and purplish anthers. The fruit is borne on a thread-like stalk that bends down under the weight of the fruit. Calyx is papery and encloses the fruit, looking like a green Chinese lantern.

Cutleaf groundcherry (*P. angulata* L.) is similar to Wright ground-cherry but leaves are entire to slightly toothed and the flowers are more yellow. Both lanceleaved groundcherry and Wright groundcherry are found in the Southwest from Texas to California in cultivated fields and disturbed waste areas. They flower from April to November.



*The seedling plant of Wright groundcherry has lance-shaped leaves with irregular margins.*



*The inflated, papery calyx encloses the fruit, forming a miniature "Chinese lantern."*

**Bittersweet nightshade**  
*Solanum dulcamara* L.



**Bittersweet nightshade**  
Solanaceae  
(Nightshade family)

A trailing or climbing perennial with spreading stems up to 10 feet. Leaves dark green to sometimes dark purplish, 1 to 4 inches long, often with one to several lobes or leaflets at the base. Flowers are star-shaped, having purple petals and prominent yellow or orange anthers. Fruits are bright red, egg-shaped berries, arranged in open clusters.

Bitter nightshade is a native of Europe that is widely distributed throughout much of North America. It is typically found growing in moist waste areas, in fence rows, along drainage ditches and waterways; and may form large colonies or thickets. It also becomes established in orchards, vineyards, and residential landscapes. All parts of the plant are toxic. Children seem to be especially attracted to the bright red berries, which may cause poisoning if eaten in sufficient quantity.

Non-standard name: bitter nightshade.



*Dark green leaves are heart-shaped, often having one to several basal lobes or leaflets.*



*Flowers are star-shaped with purple petals and bright yellow anthers. Fruits turn from green, to yellow, to bright red as berries mature.*

**Silverleaf nightshade**  
*Solanum elaeagnifolium* Cav.



**Silverleaf nightshade**  
Solanaceae  
(Nightshade family)

A perennial, 1 to 3 feet tall, spreading by roots or seeds. Stems are sparsely covered with short yellow thorns. Leaves and stems are covered with dense short hairs that give the foliage a gray or silvery appearance. Leaves are narrow, lance-shaped, with entire to wavy margins. Flowers are 3/4 to 1 inch wide with violet to light blue (sometimes white) petals. The mature fruit is a yellow or dull orange berry, which may eventually turn blackish.

Silverleaf nightshade is native to the central United States, but has spread to other areas where it is found on rangeland, in pastures, waste areas, and cropland. The berries and foliage are poisonous to livestock. This plant should not be confused with the true horsenettle, *S. carolinense* L., which is also a rhizomatous perennial, but lacks a dense silvery covering of hairs and has broader, more toothed leaves, and more prominent spines.

Non-standard names: white horsenettle, blueweed.



*Flowers of silverleaf nightshade are blue to violet and have 5 petals with yellow anthers in the center. Fruit are yellow or orange and are filled with seed.*



*Small, orange, round fruit of silverleaf nightshade.*



**Black nightshade**  
*Solanum nigrum* L.



**Black nightshade**  
Solanaceae  
(Nightshade family)

An annual 6 to 24 inches tall with glabrous or appressed-hairy stems. Leaves are ovate, smooth to wavy-edged and tapered to the tip. Flowers resemble those of the potato and tomato and are white to pale-blue, 1/4 to 3/8 inch wide, borne in clusters. Calyx is scarcely enlarging, not cupping the fruit.

Black nightshade, a native of Europe, is a weed of waste places and cultivated fields. The berries frequently become mixed with harvested commodities such as dry beans and green peas, decreasing crop quality. The green (immature) fruit and foliage contain toxic alkaloids.

Eastern black nightshade (*Solanum ptycanthum* Dunal) is not normally found in the far western states and provinces.

Non-standard name: garden nightshade.



*Black nightshade seedling leaves are ovate and taper to a pointed tip.*



*Fruits of black nightshade are black when mature. The calyx, or covering on the top of the berry, is smaller than on hairy nightshade. Stems and leaves have a smooth appearance.*

**Eastern black nightshade**  
*Solanum ptycanthum* Dun.



## Eastern black nightshade

Solanaceae  
(Nightshade family)

An annual 1 to 2 feet tall with erect or spreading stems and is widely branched. Leaves are ovate, 1 to 3 inches long, hairless, and alternate with wavy edges. Undersurface of seedling leaves are red-purple. White or purple flowers are borne in umbrella-like, drooping, lateral clusters.

Eastern black nightshade is native to North America and is found east of the Rocky Mountains. It is a serious weed in many cultivated crops. The green (immature) fruit and foliage may contain toxic alkaloids. Eastern black nightshade forms berries in umbrella-like clusters with berry stems arising from a common point, the calyx of eastern black nightshade is the smallest when compared to black and hairy nightshade, and the lobes of the calyx recurve away from the berry. Black nightshade and hairy nightshade berries connect to the stem in a fashion similar to grapes. The calyx of black nightshade is mid-size and the lobes extend outward, while the calyx of hairy nightshade is large and encloses half of the berry.



*Eastern black nightshade cotyledons and seedling leaves are ovate, purple on the underneath side and taper to a pointed tip.*



*Fruits of eastern black nightshade are dark blue to black when mature.*

**Buffalobur**

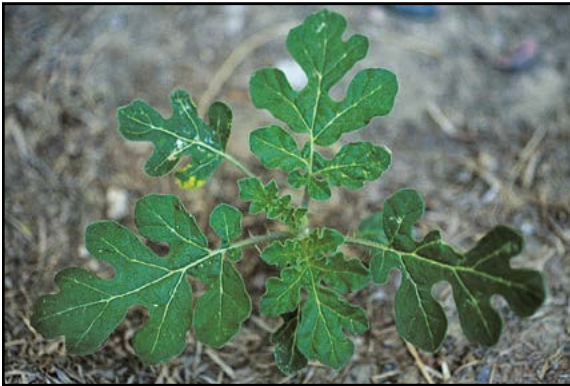
*Solanum rostratum* Dunal



**Buffalobur**  
Solanaceae  
(Nightshade family)

This native annual grows to 2 feet high, has leaves 2 to 5 inches long with deep lobes and is covered with spines. Yellow, 5-lobed flowers, common throughout the summer, are about 1 inch wide. The berry is enclosed by an enlarged calyx and contains many seeds. Seeds are black, wrinkled and flattened.

Buffalobur is widely distributed in the West. It is common on disturbed wastelands and prairies. It is most common on sandy soils, but grows on most soils. It is drought resistant and serves as a host for the Colorado potato beetle. It is not a highly competitive species.



*Leaves of seedling plants of buffalobur are deeply lobed and spiny, underside with prominent veins.*



*Yellow flowers appear in early summer and develop into a spiny seed capsule containing many small seeds.*

**Hairy nightshade**  
*Solanum physalifolium* Rusby



**Hairy nightshade**  
Solanaceae  
(Nightshade family)

Hairy nightshade is an annual, 12 to 24 inches tall. Foliage is spreading, hairy, and may feel sticky when handled. Flowers resemble those of potato and tomato and have 5 white petals, and an enlarging green calyx. They are arranged in clusters. As the fruit matures, the calyx cups the lower half of the greenish or yellowish fruit.

Hairy nightshade, a native of South America, is a widespread weed of waste places and cultivated fields. The plant contains toxic alkaloids, especially in the berries. Hairy nightshade causes problems in field crops similar to those described for black nightshade.



*Immature plants start their growth in early summer. Leaves and stems are quite hairy.*



*White flowers, having 5 petals with yellow centers, develop into green fruit containing very small seeds. Each berry is half-enclosed by the calyx.*



**Turkeyberry**  
*Solanum torvum* Swartz



## Turkeyberry Solanaceae (Nightshade family)

Turkeyberry is a perennial, up to 10 feet tall, with hooked prickles on the stems and leaves. Leaves are simple, alternate, ovate, lobed, and up to 7 inches in length. Flowers are white, about 1 inch in diameter, with prominent yellow stamens and in clusters. Fruits are yellow-green when mature, 1/2 inch in diameter, and numerous-seeded.

Turkeyberry was introduced, probably from Asia. It forms dense, thorny stands in pastures, forests, and waste areas. It is present in Hawaii on the islands of Oahu, Maui, and Hawaii. It has a great potential to spread since fruits are produced throughout the year, and seeds can number between 300 to 400 per fruit. The fruits are apparently used in Southeast Asian cooking.



*Seedlings of turkeyberry resemble those of cultivated eggplants.*



*Fruits, about 1/2 inch in diameter, contain many seeds.*

**Cutleaf nightshade**  
*Solanum triflorum* Nutt.



**Cutleaf nightshade**  
Solanaceae  
(Nightshade family)

This plant is an annual, 4 to 24 inches tall, branched from the base, with ill-smelling foliage. Leaves are deeply lobed and may have short pubescence. Flowers resemble those of potato and tomato and are small, have 5 star-shaped white petals with a center made up of yellow united stamens, a somewhat enlarging calyx and are arranged in groups of three. Fruits are green, with a cream-colored striping.

Cutleaf nightshade is native to North America east of the Cascade Mountains to the Great Plains and is a weed of waste places and cultivated fields. The plant contains toxic alkaloids.



*Seedlings of cutleaf nightshade have deeply lobed leaves and are covered with short hair. Seedlings commonly appear in early spring.*



*Flowers of cutleaf nightshade are white with 5 petals and yellow stamens in the center. Small, striped, tomato-like fruit are abundant and contain many yellow seeds.*

**Saltcedar**

*Tamarix ramosissima* Ledeb.



**Saltcedar**  
Tamaricaceae  
(Tamarisk family)

Deciduous or evergreen shrubs or small trees, 5 to 20 feet tall. Bark on saplings and stems is reddish-brown. Leaves are small and scale-like, on highly-branched slender stems. Flowers are pink to white, 5-petalled.

Saltcedar was introduced from Eurasia and is now widespread in the United States. Smallflower tamarisk (*T. parviflora* DC.) is similar in appearance, but has 4-petalled flowers, with brown to deep purple bark on stems. Smallflowered tamarisk was introduced from southern Europe, and is also widespread. Both species are used as ornamentals, but have escaped and become naturalized along streams, canals, and reservoirs in much of the West. Stands form monocultures which severely limit wildlife biodiversity. Large plants of saltcedar can transpire at least 200 gallons per plant each day and will often dry up ponds and streams.

Non-standard names: tamarisk, tamarik.



*Smooth woody stems are dark brown to reddish-brown.*



*Flowers are pink, small, 5-petalled, and borne in finger-like clusters. Leaves are scale-like, on slender, highly-branched, green stems.*

**Common cattail**  
*Typha latifolia* L.



**Common cattail**  
Typhaceae  
(Cattail family)

Tall perennial herbs with large creeping rhizomes. Stems are simple, cylindrical, erect and pithy. Leaves are long, linear, broad, flat, parallel-veined, and rather spongy. Mature inflorescences are velvety-brown, densely crowded, terminal, spike-like, cylindrical heads. These eventually fall apart, releasing clouds of tiny tufted, air-borne fruits.

Cattail is commonly found in wet or marshy places throughout the West, where it provides habitat for waterfowl and other wildlife. Though cattail is not generally considered a weed, its presence in water storage ponds or along irrigation canals and ditches can reduce holding capacity or impede waterflow.



*Insert on opposite page: Catkin of common cattail.  
Left: Seedling plant of common cattail.*



*Large creeping rhizomes readily propagate new shoots, allowing dense stands to develop.*



**Stinging nettle**  
*Urtica dioica* L.



**Stinging nettle**  
Urticaceae  
(Nettle family)

A perennial slow-spreading plant, with 4-angled stems, 2 to 9 feet tall. Leaves coarsely-toothed, opposite, with numerous, small, bristly, stinging hairs over much of their surface. Greenish flower clusters are of two types, with staminate and pistillate flowers usually on different plants. Clusters are borne on slender branches in axils of upper leaves.

Stinging nettle is a native species, confined primarily to shaded, moist areas along streams, or in deep, rich, undisturbed soils. It is primarily a nuisance to recreationists because of its stinging hairs. It also produces impenetrable, unmanageable stands along waterways used for livestock or irrigation purposes.



*Leaves of stinging nettle are coarsely-toothed, forming opposite pairs. Stems are square. Undersides of leaves and stems have small needle-like structures.*



*Green flower clusters are attached to the axil of the leaf and stem.*

**Prostrate vervain**

*Verbena bracteata* Lag. & Rodr.



**Prostrate vervain**  
Verbenaceae  
(Verbena family)

A rough-hairy annual, or more often perennial, prostrate weed with diffuse branches 1/2 to 1 1/2 feet long. Leaves are 3-parted and 3-lobed. Flowers are pinkish to pale blue, borne in long dense spikes, with long leaf-like bracts extending well beyond the flowers. Fruits are gray to brown, under 1/16 inch long and are ridged and roughened.

Prostrate vervain is widely distributed in North America, where it typically infests fields, roadsides, waste areas, and other disturbed sites.



*Vervain seedlings have leaves that are deeply lobed and toothed.*



*Small trumpet-shaped flowers are borne in long spikes, with a green bract extending beyond each flower.*

**Blue vervain**

*Verbena hastata* L.



**Blue vervain**  
Verbenaceae  
(Verbena family)

An erect perennial 3 to 5 feet tall, spread by seed and by short rhizomes. Stems and foliage are roughly hairy. Leaves opposite or whorled, lance-shaped, with serrate or toothed margins. Flowers blue to purplish or pink in straight spikes which are arranged in upright panicles.

Prostrate vervain (*V. bracteata* Lag. and Rodr.) also has blue flowers arranged in spikes, but is a spreading or prostrate annual, or more often perennial, with 3-parted or 3-lobed leaves, and elongated leaf-like bracts. Blue vervain is found in wet meadows, marshes, and riparian habitats throughout the United States and Canada. Prostrate vervain can be a weed of pastures, grain fields, lawns, roadsides, and waste areas.



*Opposite or whorled lance-shaped leaves of blue vervain have serrated margins.*



*Flowers open as progressive single rings on vertical spike-like inflorescences.*

**Violet**  
*Viola Spp.*



**Violet**  
Violaceae  
(Violet family)

An annual with stems erect, to prostrate and branched. Leaves are ovate to lanceolate and coarsely toothed and about the same length as the petioles. Stipules are large and divided into 5 to 9 segments, the terminal segment often nearly as large as the main blade. Depending on species, flowers are rather showy blue, violet, yellow or white.

A European plant that has escaped from cultivation to become an occasional problem.

Non-standard name: wild pansy.



*White flower.*



*Purple flowers.*



**Creosotebush**

*Larrea tridentata* (Sesse & Moc. ex DC.) Coville



**Creosotebush**  
Zygophyllaceae  
(Caltrop family)

Creosotebush is a much branched, strong-scented, resinous evergreen shrub, up to 12 feet tall. Leaves are opposite, with 2 widely divergent, sessile, asymmetrical olive-green leaflets that are oblong to broader at the tip than at the base, and united at the base. Flowers are axillary, solitary, and have 5 yellow, clawed petals. The fruiting structure is a rounded, villose, 5-celled capsule that separates at maturity into 5 indehiscent 1-seeded carpels.

Creosotebush, a native plant, is often erroneously referred to as greasewood (*Sarcobatus vermiculatus* (Hook.) Torr.). Creosotebush is a dominant shrub over great areas of desert, on dry slopes, and plains, and has been reported to be of economical value because of its antiseptic properties and medicinal uses.



*This evergreen plant has a characteristic odor associated with its resinous leaves.*



*Flowers found in the leaf axils are yellow and give rise to a 5-celled capsule.*

**African rue**

*Peganum harmala* L.



**African rue**  
Zygophyllaceae  
(Caltrop family)

A much-branched perennial herb. Leaves are alternate, smooth, and finely and deeply cut or divided with long, narrow segments. Flowers have 5 white petals. The fruit is a 2- to 4-celled, many-seeded capsule.

African rue is a native of north African and Asiatic deserts. The first report in North America occurred in 1928 near Deming, New Mexico. It has since spread across New Mexico and is reported in Arizona and Texas. It has been reported to be toxic to domestic ruminants in experimental feeding studies. The seeds are more toxic than the leaves.



*Leaves are finely divided in long segments and the flower has 5 white petals.*



*The flowers have 5 white petals with a yellow center. The fruit is a 2- to 4-celled capsule.*

**Puncturevine**

*Tribulus terrestris* L.



**Puncturevine**  
Zygophyllaceae  
(Caltrop family)

Puncturevine is annual, prostrate or somewhat ascending, mat forming, with trailing stems, each 1/2 to 5 feet long. Leaves opposite, hairy, divided into 4 to 8 pairs of leaflets, each about 1/4 to 1/2 inch long and oval. Flowers are yellow, 1/3 to 1/2 inch wide with 5 petals, borne in the leaf axils. Fruits consist of 5 sections which, at maturity, break into tack-like structures with sharp, sometimes curving spines, each section 2- to 4-seeded (see insert, opposite page).

Puncturevine was introduced from southern Europe and is now widely scattered over much of North America. It grows in pastures, cultivated fields, waste areas, and along highways and roads. The hard, spiny burs damage wool, are undesirable in hay, and may be injurious to livestock. Bicycle tires are frequently punctured by the burs. The seed will remain dormant in the soil for 4 to 5 years, which makes eradication difficult. Because of its sharp burs, puncturevine has been spread over a wide area by animals and vehicles. Flowering and seed production occur from July to October.

Non-standard names: goathead, Mexican sandbur, Texas sandbur, tackweed.



*Seedling puncturevine leaves are pinnately compound with hairs appearing on each leaflet.*



*Puncturevine flowers, yellow with 5 petals, develop into circular spiny fruit that break into sections when ripe.*



# Glossary

*Accrescent* – Enlarging with age.

*Achene* – A small dry, one-seeded fruit which does not split at maturity.

*Acute* – Ending in a sharp point.

*Adventitious* – In an unusual or unexpected place.

*Aerial* – In the air.

*Allelopathic substances* – Chemical compounds produced by plants that affect the interactions between different plants, including microorganisms.

*Alternate* – Singly along a stem; one leaf or bud at node.

*Anthesis* – Flowering; when pollination takes place.

*Apex* – The tip.

*Appressed* – Pressed flatly against the surface.

*Areole* – The spine-bearing area on a cactus.

*Ascending* – Growing upward in an upturned position.

*Auricle* – Having small ear-shaped lobe or appendage.

*Awn* – A slender, usually terminal bristle.

*Axil* – The angle between a leaf and stem.

*Axillary* – Between the petiole or branch and the stem.

*Biennial* – A plant which lives two years.

*Bract* – A small leaf-like structure below a flower.

*Calyx* – The outer parts of a flower composed of usually leaf-like parts called sepals.

*Capillary* – Hairlike, slender and thread-like.

*Caudex* – The main stem of a plant at or just below the ground surface.

*Chlorophyll* – The green coloring matter of plants.

*Clasping* – Blade of the leaf extending beyond and surrounding the stem.

*Clavate* – Club-shaped.

*Conical* – Cone-shaped.

*Cordate* – Heart-shaped.

*Corolla* – The petals of a flower surrounding the stamens and pistil.

*Crenate* – With rounded teeth; scalloped.

*Cylindrical* – Having the form or shape of a cylinder.



*Cyme* – A short and broad, somewhat flat-topped flower cluster in which the central flower blooms first.

*Deciduous* – Leaves falling at maturity or the end of a growing season.

*Decomposed* – Divided into compound divisions; repeatedly compound.

*Decumbent* – Lying on the ground at the base, but rising at the tip.

*Depauperate* – Stunted.

*Dimorphic* – Occurring in two distinct forms.

*Disk flower* – A tubular flower in members of the sunflower family.

*Elliptic* – Oval or oblong with rounded ends and more than twice as long as broad.

*Entire* – Leaf margins that are not cut or toothed.

*Filament* – Anther-bearing stalk of a stamen; thread.

*Floret* – One of the closely clustered small flowers that make up the flower head of a composite flower. Grass flower consisting of a lemma, palea, stamens and/or pistil.

*Fronde* – The leaf of a fern.

*Glabrous* – Smooth; without hairs.

*Glume* – Bract at the base of a grass spikelet.

*Indehiscent* – Not opening at maturity.

*Inflorescence* – The flowering part of the plant.

*Involucre* – A circle of bracts under a flower cluster.

*Keel* – A ridge; the two united front petals of a flower.

*Lanceolate* – Lance-shaped.

*Leaflet* – One small blade of a compound leaf.

*Ligule* – A thin, membranous outgrowth or fringe of hairs from the base of the blade of most grasses.

*Linear* – Long and narrow with parallel sides.

*Lobed* – Cut into shallow segments.

*Membranous* – Thin and transparent.

*Midrib* – Central vein of a leaf.

*Multifloreted* – Many flowered.

*Obicular* – Circular.

*Oblanceolate* – Lance-shaped, tapering at both ends with the broadest part at tip end.

*Obovoid* – Egg-shaped with broader part at top.

*Opposite* – Arranged on the same node at the opposite side of the stem.

*Orbicular* – Circular.

*Ovary* – The seed-bearing part of the pistil.

*Ovate* – Egg-shaped with broader part at base.

*Palmate* – Spreading like the fingers from the palm.

*Panicle* – Loose, irregularly compound flowering part of plant with flowers borne on individual stalks.

*Pappus* – Bristles, scales, awns or short crown at tip of achene in flowers of sunflower family.

*Pedicel* – Stalk of a single flower.

*Peduncle* – Stalk of a flower cluster or individual solitary flower.

*Perennial* – A plant living more than two years.

*Perfect flower* – Having both stamens and pistils in the same flower.

*Petiole* – Stem or stalk of a leaf.

*Phloem* – The food-transporting tissue of a plant.

*Pinnate* – Arising from several different points along the sides of an axis.

*Pinnatifid* – Pinnately cleft.

*Pistillate* – Bearing pistils but no stamens.

*Prostrate* – Lying against the ground.

*Pubescent* – Covered with hairs.

*Raceme* – Arrangement of flowers along a stem on individual stalks about equal in length.

*Rachis* – The main stem bearing flowers or leaves.

*Ray flower* – Marginal petal-like flowers of some composites.

*Receptacle* – The part of the stem to which the flower is attached.

*Reflexed* – Turned abruptly downward or backward.

*Reticulate* – Net-like.

*Rhizomatous* – Having rhizomes.

*Rhizome* – Underground stem, usually lateral, sending out shoots above ground and roots below.

*Rosette* – Compact cluster of leaves arranged in an often basal circle.

*Rugose* – Wrinkled.

*Scale* – Thin, dry membrane, usually foliar.

*Sepal* – One division of the calyx.

*Serrate* – Saw-toothed, with sharp, forward-pointing teeth.

*Sessile* – Without a stalk.

*Sheath* – Lower part of the leaf which surrounds the stem.

*Silicle* – A short silique, almost equally as long as wide.

*Silique* – Elongated capsule with a septum separating in two valves.

*Simple leaves* – Unbranched, not compound.

*Spatulate* – Spoon-shaped, narrow at base and wide at apex.

*Spike* – A usually long inflorescence with sessile flowers.

*Spikelet* – Small or secondary spike; flower cluster in grasses consisting of usually 2 glumes, and one or more florets.

*Spinose* – Full of spines.

*Stamen* – The pollen-bearing organ of a flowering plant.

*Staminate* – Having stamens but no pistils.

*Stellate* – Star-shaped.

*Stigma* – Part of the pistil that receives the pollen.

*Stolon* – A horizontal stem which roots at the nodes.

*Striate* – Marked with parallel lines or ridges.

*Subtended* – Underneath, directly below and close to.

*Succulent* – Fleshy.

*Terete* – Circular in cross section.

*Toothed* – Sawteeth-like projections on the margins of the blade.

*Tuberous* – Like a tuber or producing tubers.

*Tufted* – In compact clusters.

*Umbel* – A flat or rounded flower cluster in which the stalks radiate from the same point, like the ribs of an umbrella.

*Utricle* – Small, inflated, 1-seeded, usually indehiscent fruit.

*Veins* – Ribs of a leaf; vascular bundles of a leaf.

*Wing* – A thin, membranous extension of a leaf blade.

# Key to the Families of Weeds of the West

- 1(0) Nonflowering plants (reproduction by spores) ..... [2](#)
- Flowering plants (reproduction by seeds)..... [3](#)

## Nonflowering Plants

- 2(1) Stems jointed, hollow; leaves small and inconspicuous
  - HORSETAIL FAMILY (Equisetaceae) ..... [304](#)
- Stems not jointed or hollow; leaves large and pinnately dissected
  - FERN FAMILY (Dennstaedtiecae)..... [298](#)

## Flowering Plants (Remainder of the Key)

- 3(1) Leaves with parallel venation; flower parts in 3's, never in 5's
  - MONOCOTS..... [4](#)
- Leaves with netted venation; flower parts in 4's or 5's
  - DICOTS ..... [11](#)

## Monocot Key

- 4(3) Flowers without distinct perianth segments (petals)..... [5](#)
- Flowers with conspicuous petals ..... [8](#)
- 5(4) Flowers arranged in spikes and spikelets composed of a number of chaffy scales ..... [6](#)
- Flowers not in the axils of chaffy scales or bracts ..... [7](#)
- 6(5) Stems usually cylindrical and hollow; leaves in 2 rows
  - GRASS FAMILY (Poaceae) ..... [408](#)
- Stems usually triangular and solid; leaves in 3 rows
  - SEDGE FAMILY (Cyperaceae) ..... [292](#)
- 7(5) Flowers perfect (have both stamens and pistils)
  - ARROWGRASS FAMILY (Juncaginaceae)..... [358](#)
- Flowers imperfect (stamens and pistils on separate flowers)
  - CATTAIL FAMILY (Typhaceae) ..... [582](#)
- 8(4) Ovary inferior; flowers solitary
  - IRIS FAMILY (Iridaceae) ..... [352](#)
- Ovary superior; flowers numerous..... [9](#)
- 9(8) Perianth showy, other than green or brown ..... [10](#)
- Perianth segments green or brown
  - RUSH FAMILY (Juncaceae)..... [354](#)

10(9)	Plants with woody stems; leaves thick and fibrous	
	AGAVE FAMILY (Agavaceae) . . . . .	<a href="#">2</a>
	Plants with herbaceous stems; leaves thin and nonfibrous	
	LILY FAMILY (Liliaceae) . . . . .	<a href="#">370</a>

### Dicot Key

11(3)	Corolla not present . . . . .	<a href="#">13</a>
	Corolla present. . . . .	<a href="#">12</a>
12(11)	Petals distinct . . . . .	<a href="#">22</a>
	Petals united, at least below . . . . .	<a href="#">43</a>

### Dicots without Petals

13(11)	Calyx present, often petal-like. . . . .	<a href="#">14</a>
	Calyx and corolla both absent; pistil one; flowers imperfect with pistillate and staminate flowers on same plant, borne in a cup-like structure; sap milky	
	<i>Euphorbia</i> in SPURGE FAMILY (Euphorbiaceae). . . . .	<a href="#">308</a>
14(13)	Ovary superior; herbs or occasionally small bushy shrubs . . . . .	<a href="#">15</a>
	Ovary inferior; woody shrubs	
	OLEASTER FAMILY (Elaeagnaceae). . . . .	<a href="#">302</a>
15(14)	Ovary 3- to 5-celled	
	<i>Ricinus</i> in SPURGE FAMILY (Euphorbiaceae). . . . .	<a href="#">316</a>
	Ovary 1-celled . . . . .	<a href="#">16</a>
16(15)	Fruit a capsule, splitting at maturity; leaves opposite	
	PINK FAMILY (Caryophyllaceae) . . . . .	<a href="#">246</a>
	Fruit dry, not splitting at maturity . . . . .	<a href="#">17</a>
17(16)	Stigma and style 1; herbage with stinging hairs	
	NETTLE FAMILY (Urticaceae) . . . . .	<a href="#">584</a>
	Stigmas and styles 2 or several; herbage without stinging hairs. . .	<a href="#">18</a>
18(17)	Leaves with sheathing stipules	
	BUCKWHEAT FAMILY (Polygonaceae). . . . .	<a href="#">498</a>
	Leaves without sheathing stipules . . . . .	<a href="#">19</a>
19(18)	Stipules conspicuous, leafy; leaves palmately compound	
	HEMP FAMILY (Cannabaceae) . . . . .	<a href="#">244</a>
	Stipules papery or none; leaves simple, pinnately veined . . . . .	<a href="#">20</a>

20(19)	Plants with scurfy leaves	
	GOOSEFOOT FAMILY (Chenopodiaceae).....	<a href="#">264</a>
	Plants without scurfy leaves .....	<a href="#">21</a>
21(20)	Fruit triangular or a lens-like achene; stamens 4 to 9	
	BUCKWHEAT FAMILY (Polygonaceae).....	<a href="#">498</a>
	Fruit an urticle; stamens 3 to 5	
	AMARANTH FAMILY (Amaranthaceae).....	<a href="#">4</a>

### **Dicots with Distinct Petals**

22(12)	Ovary superior (free from calyx) .....	<a href="#">23</a>
	Ovary inferior (more or less attached to the calyx).....	<a href="#">41</a>
23(22)	Stamens attached to receptacle .....	<a href="#">24</a>
	Stamens attached to calyx or on a disk .....	<a href="#">38</a>
24(23)	Flowers with more than 10 stamens.....	<a href="#">25</a>
	Flowers with 10 or less stamens .....	<a href="#">29</a>
25(24)	Pistils 2 to many	
	BUTTERCUP FAMILY (Ranunculaceae).....	<a href="#">518</a>
	Pistil 1 .....	<a href="#">26</a>
26(25)	Leaves opposite	
	ST. JOHNSWORT FAMILY (Clusiaceae).....	<a href="#">276</a>
	Leaves alternate or whorled .....	<a href="#">27</a>
27(26)	Ovary 5- to 30-celled; stamens numerous and united to form a tube around the pistil	
	MALLOW FAMILY (Malvaceae).....	<a href="#">380</a>
	Ovary 1-celled; stamens few, or if numerous, not united to form a tube.....	<a href="#">28</a>
28(27)	Sepals falling off early; petals 4 or 6	
	POPPY FAMILY (Papaveraceae) .....	<a href="#">400</a>
	Sepals persistent; petals 5	
	Calandrina of PURSLANE FAMILY (Portulacaceae) .....	<a href="#">512</a>
29(24)	Pistils more than 1.....	<a href="#">30</a>
	Pistil 1; styles or stigmas 1 or more .....	<a href="#">31</a>
30(29)	Pistils distinct, 3 to numerous	
	BUTTERCUP FAMILY (Ranunculaceae).....	<a href="#">518</a>
	Pistils more or less united around a central axis, 5 in number	
	GERANIUM FAMILY (Geraniaceae).....	<a href="#">350</a>

31(29)	Flowers irregular . . . . .	<a href="#">32</a>
	Flowers regular . . . . .	<a href="#">33</a>
32(31)	Stamens 10, united in 1 or 2 sets; flowers usually in spikes, racemes or heads	
	PEA FAMILY (Fabaceae) . . . . .	<a href="#">318</a>
	Stamens 5; flowers usually solitary	
	VIOLET FAMILY (Violaceae) . . . . .	<a href="#">590</a>
33(31)	Flowers with 4 petals, 4 sepals, and 6 stamens (4 long and 2 short)	
	MUSTARD FAMILY (Brassicaceae) . . . . .	<a href="#">208</a>
	Flowers not as above, if 4 petals, 4 sepals, and 6 stamens, not 4 long and 2 short . . . . .	<a href="#">34</a>
34(33)	Ovary 1-celled . . . . .	<a href="#">35</a>
	Ovary more than 1-celled . . . . .	<a href="#">36</a>
35(34)	Calyx of 2 distinct sepals; stamens more than 5	
	PURSLANE FAMILY (Portulacaceae) . . . . .	<a href="#">512</a>
	Calyx of more than 2 distinct sepals; stamens 5	
	PINK FAMILY (Caryophyllaceae) . . . . .	<a href="#">246</a>
36(34)	Leaves pinnately compound	
	CALTROP FAMILY (Zygophyllaceae) . . . . .	<a href="#">592</a>
	Leaves palmately compound; sepals 5; petals 5; stamens 10; ovary 5-celled	
	WOODSORREL FAMILY (Oxalidaceae) . . . . .	<a href="#">398</a>
38(23)	Herbaceous plants . . . . .	<a href="#">39</a>
	Woody plants (trees or shrubs) . . . . .	<a href="#">40</a>
39(38)	Simple leaves	
	LOOSESTRIFE FAMILY (Lythraceae) . . . . .	<a href="#">378</a>
	Compound leaves	
	ROSE FAMILY (Rosaceae) . . . . .	<a href="#">530</a>
40(38)	Leaves broad	
	CASHEW FAMILY (Anacardiaceae) . . . . .	<a href="#">14</a>
	Leaves minute	
	TAMARISK FAMILY (Tamaricaceae) . . . . .	<a href="#">580</a>
41(22)	Flowers in umbels of umbels	
	PARSLEY FAMILY (Apiaceae) . . . . .	<a href="#">16</a>
	Flowers not in umbels . . . . .	<a href="#">42</a>

42(41)	Petals 4, stamens 8; plants not spiny	
	EVENING PRIMROSE FAMILY (Onagraceae) . . . . .	<a href="#">392</a>
	Petals and stamens numerous; plants spiny	
	CACTUS FAMILY (Cactaceae) . . . . .	<a href="#">240</a>

**Dicots with United Petals**

43(12)	Stamens more than 5 . . . . .	<a href="#">44</a>
	Stamens 5 or less . . . . .	<a href="#">46</a>
44(43)	Corolla irregular	
	PEA FAMILY (Fabaceae) . . . . .	<a href="#">318</a>
	Corolla regular . . . . .	<a href="#">45</a>
45(44)	Leaves compound	
	WOODSORREL FAMILY (Oxalidaceae) . . . . .	<a href="#">398</a>
	Leaves simple (may be palmately lobed)	
	MALLOW FAMILY (Malvaceae) . . . . .	<a href="#">382</a>
46(43)	Ovary superior (free from calyx) . . . . .	<a href="#">47</a>
	Ovary inferior (adherent to calyx) . . . . .	<a href="#">55</a>
47(46)	Corolla regular . . . . .	<a href="#">48</a>
	Corolla irregular or strongly 2-lipped . . . . .	<a href="#">53</a>
48(47)	Pistil 1 . . . . .	<a href="#">49</a>
	Pistils 2 . . . . .	<a href="#">52</a>
49(48)	Corolla dry and papery	
	PLANTAIN FAMILY (Plantaginaceae) . . . . .	<a href="#">402</a>
	Corolla colored, not dry and papery . . . . .	<a href="#">50</a>
50(49)	Ovary 4-celled, commonly 4-lobed; fruit of 4 nutlets; flower arrangement coiled	
	BORAGE FAMILY (Boraginaceae) . . . . .	<a href="#">198</a>
	Ovary 1-, 2-, or 3-celled; fruit a capsule or berry . . . . .	<a href="#">51</a>
51(50)	Calyx of 5 distinct sepals; fruit a capsule; plants climbing or trailing	
	MORNINGGLORY FAMILY (Convolvulaceae) . . . . .	<a href="#">278</a>
	Calyx 4 or 5 toothed or cleft; fruit a capsule or a berry; plants erect or diffuse	
	NIGHTSHADE FAMILY (Solanaceae) . . . . .	<a href="#">554</a>
52(48)	Stamens and stigmas united	
	MILKWEED FAMILY (Asclepiadaceae) . . . . .	<a href="#">32</a>
	Stamens and stigmas not united	



	DOGBANE FAMILY (Apocynaceae).....	<a href="#">28</a>
53(47)	Fruit a capsule; ovary 2-celled; stems usually round .....	<a href="#">59</a>
	Fruit of 2 to 4 nutlets; stems often square .....	<a href="#">54</a>
54(53)	Fruit with 4 distinct nutlets; filaments much longer than anthers	
	MINT FAMILY (Lamiaceae) .....	<a href="#">360</a>
	Fruit of 4 more or less fused nutlets; filaments about as long as anthers or shorter	
	VERVAIN FAMILY (Verbenaceae).....	<a href="#">586</a>
55(46)	Stamens distinct.....	<a href="#">56</a>
	Stamens united into a tube around the style .....	<a href="#">58</a>
56(55)	Ovary 1-celled; flowers in dense heads	
	TEASEL FAMILY (Dipsacaceae).....	<a href="#">300</a>
	Ovary more than 1-celled; flowers solitary, in racemes or open inflorescences .....	<a href="#">57</a>
57(56)	Ovary 2-celled; inflorescence mostly open	
	MADDER FAMILY (Rubiaceae).....	<a href="#">532</a>
	Ovary 2- to 5-celled; flowers solitary or in racemes, with a charac- teristic bell shape	
	BLUEBELL FAMILY (Campanulaceae).....	<a href="#">242</a>
58(55)	Flowers not in heads; vines with tendrils	
	CUCUMBER FAMILY (Cucurbitaceae).....	<a href="#">288</a>
	Flowers in heads; not vines or tendril bearing	
	SUNFLOWER FAMILY (Asteraceae).....	<a href="#">42</a>
59(53)	Capsule relatively smooth; lacking horns	
	FIGWORT FAMILY (Scrophulariaceae).....	<a href="#">534</a>
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# Notes

A series of horizontal dotted lines for writing notes.

This Book is Dedicated to  
**Larry C. Burrill**



Larry made major contributions of photography and text to this book. After a long struggle with illness, Larry died August 2, 2008 at age 72. He received the BS degree from Oregon State in 1959 and the MS in 1973.

Larry joined Oregon State University in 1963 and soon became a Faculty Research Assistant on the weed project. In 1969, the weed project divided into the international and domestic divisions and Larry chose to be involved with the International Plant Protection Institute with Dr. Bill Furtick. Over the years, he became widely known and respected as an international weed scientist. He was an early founder of the International Weed Science Society, served for several

years as Secretary-Treasurer, and taught short-courses in many countries. In 1992, he was awarded IWSS's highest honor, the Outstanding International Achievement Award.

In about 1975, he joined Arnold Appleby in teaching the large weed control course. He was a demanding instructor, but the students enjoyed his dry wit and respected his knowledge gained from his travels around the world. They voted him Teacher of the Year in the Crop Science Department.

In the early 1970s, he became interested in photography, was only average in the beginning, but persisted until he became expert. He won several photo awards at WSSA meetings and was once named Photographer of the Year. His wall-mounted photographs and his beautiful greeting cards became widely admired.

He served as President of WSSW in 1980 and was elected Fellow in 1984. He was named Fellow of WSSA in 1986. In 1994, he received the Outstanding Weed Scientist Award from WSSW.

In the mid-1980s, he became the Weed Control Extension Specialist in Crop Science, and he immediately became popular with the extension agents and growers. In 1993, he was named the Outstanding Extension Weed Scientist by WSSA. He retired as Full Professor at the end of 1994.

Larry Burrill strove toward and achieved excellence in everything he did—international work, teaching, photography, extension work, etc. He was well-liked and admired by colleagues, students, and friends. A great many people from around the globe can attest to the fact that the world is a better place for him having been among us. He will be sorely missed.



# Weeds of the West



*LEARNING TO IDENTIFY unwanted plants around the home, farm or ranch will be much easier with this book published by the Western Society of Weed Science and co-sponsored by the Cooperative Extension of the United States. **WEEDS OF THE WEST** will help you identify weeds that compete with native plants, horticultural and agricultural crops, as well as those that can poison livestock and people.*

*This extensive, easy-to-use guide contains more than 900 color photographs showing the early growth stages, mature plants, and features for positive identification of each weed discussed. Descriptions, habitats and characteristics of each plant are also included in this handy reference guide .*

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