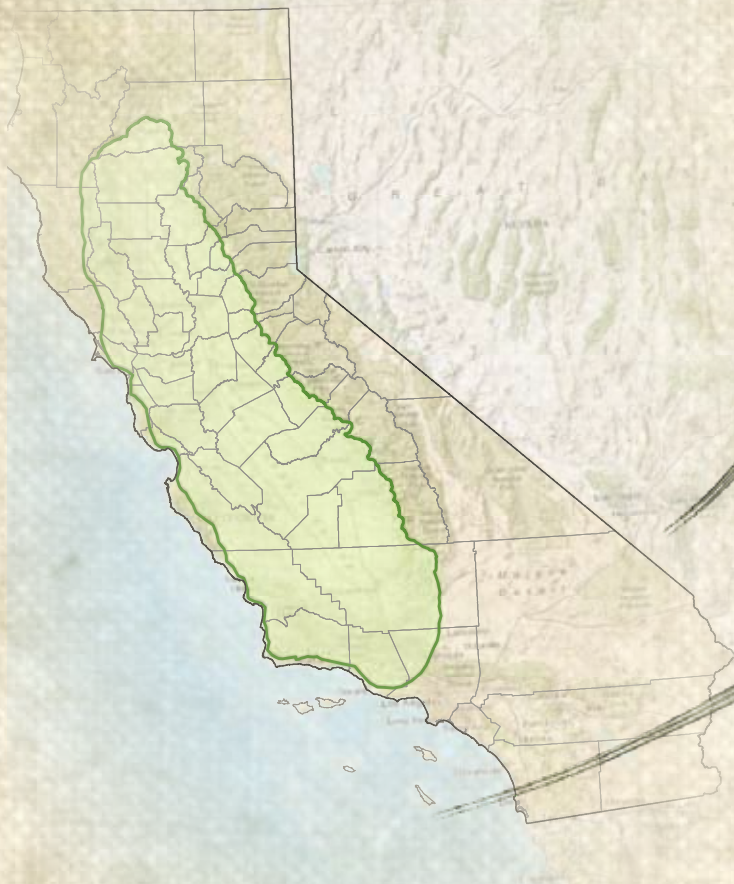


Common Range Plants IN CALIFORNIA'S INTERIOR VALLEY, FOOTHILLS, AND COASTAL ZONE

United States
Department of
Agriculture



Purple Needlegrass

"Helping people help the land"

Introduction

This plant guide is a result of requests from many NRCS field offices who conduct conservation planning on California's rangelands. The desire to know which plant species provide a forage base for livestock, was the impetus for this guide. California's annual grassland and oak woodlands are a vast area of the state, comprising approximately 14.5 million acres. The area is dominated by a Mediterranean climate with cool wet winters and summer drought. Rains typically begin in middle to late October and continue through April, followed by a summer drought. During the dry season annual plants survive as seed and perennial herbaceous vegetation becomes dormant. The area of the state dominated by the annual grassland vegetation type extends from the Sierra foothills to the east, west to the Pacific coast and from the south coast to just north of Redding in Shasta County. This annual grassland area is dotted with native perennial grasses, forbs and legumes, each providing a unique structural and functional capacity on the landscape. They provide livestock and wildlife forage at various times of the year and with various qualities. This guide will help the user identify the species and their forage value. It can be used to assist with conservation planning, resource assessments, Natural Resource Inventory (NRI) plant identification, prescribed grazing plan development, and indicators of rangeland health. The guide covers many areas of the state dominated by annual grasslands and include 9 Major Land Resource Areas (MLRA's) including the Central California Coastal Valleys (14), Central California Coast Range (15), California Delta (16), Sacramento and San Joaquin Delta (17), Sierra Nevada Foothills (18), Southern California Coastal Plains (19) and Southern California Mountains (20) and to a lesser extent the non-forested portions of the Coastal Redwood Belt (4), and Siskiyou-Trinity (5). Within the grasslands of MLRA 4 and 5 annual grasslands are mixed with perennial grasses, as are coastal portions of MLRA 14 & 15 where sufficient moisture will support native perennial grasses. The plants included in this guide are a mere snapshot of those most dominate throughout the state. It is by no means a complete list of herbaceous plant species that occur in the state. There are thousands of grasses, forbs and legumes in California. When species occur that aren't included here, further investigation should occur using any of the various plant guides that cover species of California.

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Common Annual Grasses of California

Avena fatua (Wild oats) – (Introduced/Annual) (Cool Season).

Identification – Culms are 25 to 100 cm's tall; stems are round in cross-section, flat leaves that are rolled in the bud, fibrous root system. Fatter spikelets (and more of a robust stout plant) than *Avena barbata*, spikelets hang down (droop downward) and are 2 or 3 flowered, usually grow between March and June. Awns are dorsal, genticulate, and reddish brown to black in color.

Management – Primary forage for all classes of livestock during the winter and spring growth period. Secondary forage after it matures in summer. Produces good hay if cut before maturity. Germinates in late fall or winter, most growth in spring, flowers March to June.

Habitat – Valleys and open slopes of foothill rangeland, cultivated soils, disturbed soils in unused places and road rights-of-way. This species is currently naturalized at low elevations throughout the majority of California. An abundance of wild oats indicates healthy rangeland; scarcity of this species indicates a decline in desirable species.



Avena barbata (*Slender oats*) – (I/A) Cool.

Identification – Very similar to *Avena fatua* in almost every way except that this species is usually not as robust and consists of more glabrous foliage.

Primary forage in spring before flowering and becomes secondary forage as it matures.

Management – Trampling by grazing animals after seeds have matured helps to plant seeds.

Habitat – Valleys and open slopes of foothill rangeland, cultivated soils, disturbed soils in unused places and road rights-of-way. This species is currently naturalized throughout much of California at low elevations and is most abundant in dry and coarse textured materials.



Bromus hordeaceus (Soft chess) – (I/A) (Cool Season).

Identification – This plant is characterized by contracted panicles, crinkly glume surfaces, and tear-drop shape spikelets. Sheaths (lower part of a leaf that encloses the stem) are densely hirsute (straight, stiff hairs). Fibrous root system. Annual grass with soft florets and weak, slender awns.

Germinates in late fall, flowers in early spring, seeds mature in May and June.

Management – Primary livestock forage while immature (winter to early spring); secondary forage when mature; seeds remain on the plants providing good winter grazing.

Habitat – Open ground, unused places and disturbed sites. This plant is currently naturalized at low elevations throughout much of California and is one of the most abundant and important forage plants in the valleys and on the foothills of the state. An abundance of this species may prevent establishment and growth of desirable perennial species.



Bromus diandrus (Ripgut brome) (I/A – Cool season)

Identification – Culms 30 – 70 cms tall, long stout awns usually reddish in color with a slightly flat top. Sheaths softly pilose (long soft straight hairs) with spreading hairs. Spikelets erect above. Cespitose. Sharp florets and straight awns. Seeds germinate in late fall, grows rapidly in the spring and matures 2 - 3 months later. Needle-sharp callus at the base of the lemma is unique to this annual species, hence its common name.

This species is primary forage in seedling stage and during vigorous vegetative growth, low value at flowering, and worthless at maturity. Sharp florets are injurious to mouth, eyes, nostrils, and ears of animals.

Management – Frequently seen under oak canopy in ungrazed land, less dense when sward is grazed on a seasonal basis. Mowing within a week after flower initiation reduces seed production. Deep tilling in fall, or early spring can help control brome grasses. Shallow cultivation shortly after the main flush of germination and again can eliminate most seeding.

Habitat – Open ground, unused places, roads right of ways, field borders and disturbed sites. Naturalized throughout much of California, especially common in valleys and along foothills.



Bromus rubens (Red brome)

Identification – Plants tufted; blades flat rolled in bud; sheaths closed for more than half their length, ligule membranous; tip minutely jagged; auricles lacking; fibrous roots. Spikelets slightly flattened; florets detach from above the glumes and between one another. Floret bases sharp lemmas awned from the tip between two teeth.

Mature panicles dense, ovoid, typically dark red with erect to ascending branches. Most spikelet stalks hidden. Becomes purplish as it matures; fades to dingy tan after death.

Management – This species is secondary forage while immature; it is especially favored by sheep in the winter months. Becomes unused as forage when mature.

Habitat – Open disturbed areas, roadsides, fields, rangelands, agronomic crops, dry sandy soils. This species is currently naturalized throughout the low to medium elevations of California and is especially common where competition is low, such as the arid hills and flats on the west side of the San Joaquin Valley.



Vulpia myuros (Annual fescue, rat-tail fescue, Six-week fescue) I/A – Cool Season

Identification – Cool season annual grows to about .8 meters tall; with narrow, spike-like panicles. Mature plants have single or tufted stems, generally erect, round in cross section, hairy near the panicle. Fibrous roots, usually shallow but able to exceed 30 cms in length. Spikelets/florets are visible from March through June. Panicles are generally spike-like <2 cm's wide, 4 – 25 cm's in length. Spikelets are erect to ascending, one per node 5 – 12 mm long.

Secondary forage while immature becomes useless as it reaches maturity.

Management – Persists in areas that are heavily grazed. An abundance can indicate poor rangeland health. Timed heavy grazing in spring can reduce seed production, and grazing for a period of time in fall will limit seedling survival and significantly reduce rattail fescue.

Habitat – Disturbed and undisturbed open areas, roadsides, rangeland, pastures, fields. Tolerates drought, shade, poor sandy soil, and acidic soil. Distributed throughout the country and nearly worldwide.



Taeniatherum caput-medusae (Medusahead) noxious – (I/A) Cool season

Identification – Lower awns shorter than upper awns, small grass, frail. Ascending to erect winter annual to 0.6 m tall, with spikes of long-awned spikelets. Fibrous roots.

Management – Secondary livestock forage in early spring, becomes useless after flowers and seed-heads emerge. No value for wildlife forage. Considered a noxious, invasive species on California's rangeland.

Medusahead displaces desirable species and reduces livestock carrying capacity on rangeland. Slow hot burns when other vegetation has dried and medusahead seeds have not matured (are in the dough phase) can be used to reduce the populations. Other grazing treatments are being employed to reduce the percent composition. See other University of California Cooperative Extension (UCCE) publications for information on management of medusahead.

Contains high amounts of silica which inhibits lignin breakdown. If it is not grazed or manually removed it will create large amount of thatch which greatly reduces seed germination of other species, and creates fuel for wildfires.

Habitat – Open ground, disturbed areas, unused places and deteriorated rangeland. Common throughout California from low to medium elevations.



Aegilops triuncialis (Barbed goatgrass) Noxious weed (I/A) Cool season

Identification – Secondary livestock forage in early spring, becomes worthless after production of inflorescence. Worthless for wildlife at all times. Annual; grows 8 to 16 inches tall with few to many culms. Leaf sheaths contain white hairs when young, becoming more or less smooth once matured. The blades are rigid, sharp, pointed, and spreading. Grain 1/4 inch long, resembling a wheat kernel. Straight, stout, ascending awns.

Begins growing slightly prostrate and produce numerous tillers; as it reaches maturity (between May and August) barbed goatgrass becomes more erect. Its spike or inflorescence is compact and breaks into joints at the nodes of the rachis. Each spike usually consists of four spikelets in a stacked appearance. The base of plants in vegetative state (young plants, immature, winter-spring) may still be attached to the spikelet that contained the seed, by uprooting the plant this may be observable.

Secondary forage for cattle during growth phase before flowering (early spring). No value as it reaches maturity. Germinates in early winter/late fall. Considered a noxious, invasive species on California's rangeland.

Habitat - Typically inhabits dry-land fields, roadsides, annual rangelands, and oak woodlands in both disturbed and undisturbed areas. Infestations generally do not occur in irrigated areas. This species is often times found growing within medusahead patches, and looks very similar to wheat (inflorescence) until the seedheads open, then it resembles medusahead. One of the last species to remain green on degraded rangeland, makes it easy to identify.



Brachypodium distachyon (Purple false brome) – (I/A) Cool season.

Identification – Raceme like/spikelike inflorescence, culms are 10 – 30 cm's and give it a wiry appearance. Spikelets nearly sessile, alternate, ascending to erect, 10 to 15 flowered. Stems and nodes hairy, flat leaves, open sheaths.

This species is considered secondary forage while immature and becomes of no value at maturity due to having wiry culms, fibrous stems, little foliage, and firm spikelet's.

Habitat – Dry slopes, poor rocky soils, disturbed grassland, roadsides. Naturalized at low elevations throughout California.



Gastridium ventricosum (Nit grass) – (I/A). Winter/summer annual.

Identification – Fibrous shallow roots. Stems are 10 – 40 cm's long, wiry looking (little foliage) and round in cross section, sheaths open. Panicles are spike-like, densely packed with spikelet's giving them a cylindrical appearance which tapers at the point. These panicles begin to slightly spread as they reach maturity.

Secondary forage while immature, low value at maturity due to its short stature, wiriness and lack of foliage.

Habitat – Seasonally wet areas, woodland and disturbed sites. This species will increase on over-grazed areas. This species is naturalized on dry foothills and open plains at low elevations throughout California.



Hordeum murinum ssp. Leporinum (Hare barley) – I/A -Cool season.

Identification – Cool season annual whose panicles are stiff dense, bristly spikes of stiff awned spikelet's which range in color from pale green to purplish. Spikelets are "triad" meaning that each has three prominent awns arising from a single stalk. Stems are 15 – 60 cm's tall.

This and other barleys are primary forage for livestock while immature (before flower spikes develop), becomes secondary forage as it matures due to its barbed awns and sharp bases which can injure livestock.

Management – Close grazing early in the season or mowing to prevent seed production can help to control this species.

Habitat – Often inhabits moist sites around farmsteads and degraded areas. Now naturalized and widespread at low elevation throughout California.



Hordeum jubatum (Foxtail barley) – (N/P) Cool season.

Identification – Spike inflorescences that are often slightly drooping; at maturity the central axis of the inflorescence breaks apart and the entire inflorescence turns reddish. Awns are long, straight, ascending and whorled within the inflorescence. Grows one to two feet tall.

Often inhabits moist sites around farmsteads and degraded areas. Now naturalized and widespread at low elevation throughout California. This plant is a native perennial that starts growth in late April to May and matures June to August.

This species is considered secondary forage for all classes of livestock while immature (before inflorescence development) and is low value at maturity due to its scabrous awns and bristly heads.

Habitat – Likes open ground, meadows, waste places, wet areas and alkaline and saline soils. Widely distributed throughout all elevations of California. Can invade wet swales in irrigated pastures.



Lolium perenne ssp. multiflorum

(Perennial ryegrass/Italian ryegrass) – I/A/P – Cool season

Identification – Perennial ryegrass grows from 1 to 2 feet tall with a bunchy form, and has medium longevity. Life form can be annual or perennial. There are numerous long, narrow, stiff leaves near the base of the plant. The under surfaces of leaves are bright, glossy, and smooth (a characteristic which can be used to distinguish this grass from others before the inflorescence has developed). Inflorescence stems are nearly naked, covered with few sessile spikelet's which grow in an alternate formation. This plant has soft, short awns.

Italian ryegrass is quite similar to perennial ryegrass except an annual or biennial, depending on climate and/or length of growing season. It may grow taller than perennial ryegrass: from 2 to 3 feet tall; with most vigorous growth coming in fall and spring, more of a robust, stout plant than the perennial rye grass. Annual ryegrass will have its leaves rolled in the bud while perennial ryegrass will have its leaves folded in the bud.

Spike-like inflorescences, typically without vegetative shoots at the base. Mature: glabrous foliage, stems simple or tufted (erect). Sheaths open, tight around stem, auricles usually well-developed sometimes lacking. Fibrous roots. Awned lemmas; lemma bodies lanceolate; spikelet's sessile (attached directly by the base), alternate, well-spaced, aligned with the narrow side next to the stem.

These species' are primary forage during vegetative growth and remain secondary forage through their lifespan and as hay.

Habitat – roadsides, fields, pastures, orchards, best in fertile well-drained soils. Tolerate saturated soils, do not thrive in drought. These species are naturalized throughout California especially at low to medium elevations. These species can generally survive trampling, mowing and grazing but not competition from other plants or infertile soil.



Flowering Spikes



Collar Region



Mature Plant

Briza maxima (Big quaking grass) I/A – Cool season

Identification – Quaking grass refers to the sound the seedheads and flowers make when wind hits them. Mature plants are characterized by ascending to erect stems that are round in cross-section. Culms are between 20 and 60 cm in length. Spikelets are drooping and egg shaped. There are between 12 and 19 florets per spikelet. Roots are fibrous and shallow. Glumes are papery in texture and cuplike with rounded tips, sometimes with a purplish color.

Poor livestock forage while in vegetative state and becomes nearly useless as it matures.

Habitat – This species' habitat includes roadsides, pastures, grasslands and ditches. It has been naturalized along the California coast and is sometimes seen in the foothills of the coast range and northern Sierra Nevada.



***Briza minor* (little quaking grass) I/A – Cool season**

Identification – Stems are slightly flattened in cross-section. Spikelets are erect to slightly pendent (droopy) and are nearly triangular in shape. There are between 4 and 6 florets per spikelet. Glumes are papery in texture and cuplike with rounded tips, sometimes with a purplish color.

Poor livestock forage in vegetative state and becomes useless as it reaches maturity.

Habitat – Includes roadsides, grassland, pastures and ditches. This species is currently naturalized in low elevations throughout much of California, especially northern California where precipitation is higher.



Polypogon monspeliensis (Rabbit-foot grass) I/A – Cool season

Identification – Tufted winter annual usually reaching about 50-80 cm in height; sheaths loose on the clum, blades scabrous 3-8 mm wide. Panicles very bristly and usually silky, pale green to yellowish-green.

Habitat – Naturalized on moist or wet soils throughout California at low elevations; common around seeps, springs and riparian areas. Grows well on alkaline or saline to neutral soils. Mostly considered a weed except on alkaline plains of Central Valley where livestock readily graze it while green. Once dormant the forage value is poor.



Common Forbs & Legumes on California Rangelands

Erodium botrys (broadleaf filaree) – (I/A) Cool season

Identification – Schizocarp fruits larger leaves than *E. cicutarium*, the fruits are numerous coiled at maturity (look spirally). Tap root system with zero to few branches. Leaves are simple and shallowly to deeply lobed (lobes can be so deep that leaves appear to be divided into leaflets), the leaf lobes also have lobes which result in rounded teeth along the entire leaf's edge. Flowers have five petals, are lavender in color, have three to five darker veins per petal, petals end in blunt tips.

Primary forage in winter and early spring (pre-maturity) for livestock and wildlife, remains secondary forage throughout entire lifespan. This forb is known to cause bloating to livestock when consumed in high quantities.

Habitat – Includes pastures, plains, grassy lowlands, foothills and unused areas. Manual removal before fruits develop can help to control filaree. Spring and summer burns increase the abundance the following year, fall burning has no effect.



Erodium cicutarium (Redstem filaree) – (I/A) Cool season

Identification – This plant is characterized by having schizocarp fruits. The stems begin branching from the taproot. Leaves are opposite and deeply pinnate. Contain 5 petals in an elliptic form with 5 sepals and are pink to rose-colored or purple (Flowers February to May). Leaves are generally opposite, however many may arise from each stem joint, and break into leaflets that are deeply pinnate. The plant itself tends to be smaller than *E. botrys*.

Primary livestock forage for livestock and wildlife in spring (vegetative state) and remains secondary forage throughout its lifespan. May cause bloating to livestock if consumed in high quantities.

Habitat - includes cultivated fields, roadsides, and rangeland throughout California.



Leaves of Filarees

Whitestem

Redstem

Broadleaf

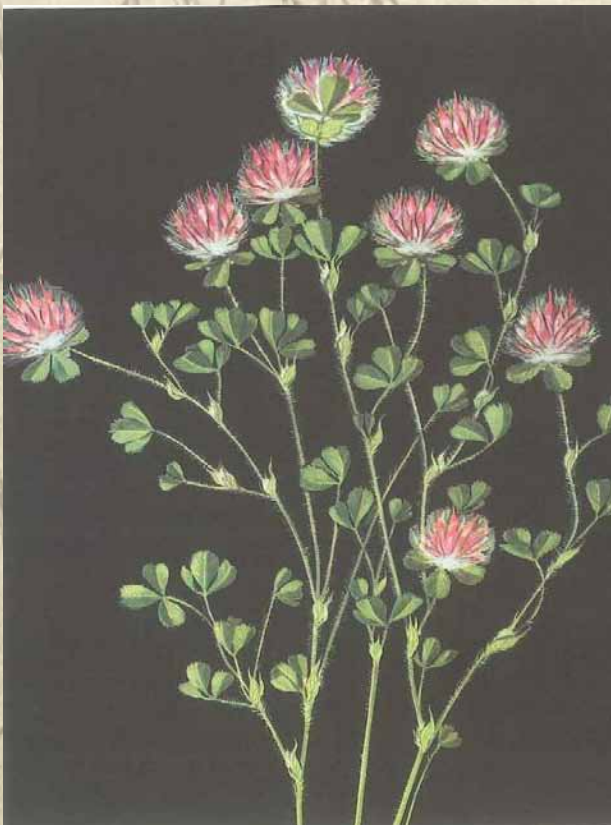
Trifolium hirtum (Rose clover) – Introduced - Cool season legume

Identification – Fuzzy, rose colored flowers appear from April to May, they are round and densely hairy. Sepals/calyx are extremely hairy. Leaves are compound and have three leaflets. Leaflets are hairy on both sides, obovate in shape, (shaped like the cross section of an egg along the longest axis) with slightly indented tips.

Management – Grazing generally favors the survival of this species once it has been established. This plant improves the quality of low producing annual range sites and increases the protein content of harvested forage. Seeds may remain in soil for up to twenty years providing additional insurance against loss of stand by droughts or frost. Annual legumes also supply nitrogen to stimulate annual grasses.

This species is primary forage throughout most of its lifespan and remains highly palatable throughout maturity, and when dry. The protein content of rose clover is equal to other annual legumes and is superior to non-legume forage. Kondinin and Wilton varieties bloom later than do native clovers and other annual legumes, extending the green feed period.

Habitat – roadsides, fields, grassland, open slopes, and other disturbed places.



Medicago polymorpha (Bur clover) – (I/A) Cool season

Identification – Roadsides, fields, grassland, open slopes, and other disturbed places. Basic clover look, grows low to the ground (branches start at stem), orb like leaves, has small spiral burrs that will stick to your socks. Plant is characterized by three leaflets per leaf that are rounded with a sharp inundation at the top; the middle leaflet has the longest stalk. Stipules (appendages occurring in pairs, one on either side of the petiole base) are leaf like. Yellow pea-like flowers appear in March to June.

Management – Primary forage for all species of livestock and wildlife in spring, and maintains value into the dry season. Some common problems with bur clover include bloating from excessive grazing of fresh herbage, and livestock fleece becoming contaminated with legumes (Santiago is a spineless variety and may help with this second problem).

Habitat – Bur clover is a nitrogen fixing forage plant for slightly neutral to alkaline soils. Its habitat is characterized by valleys, plains, lower slopes of foothills, waste ground, and a common weed in lawns and rights-of-way.



Mature Plant



Seedling



Fruiting Bur and Flower

Plantago major (Common Plantain) – (I/P) – Cool season

Identification – Cotyledons oblong; base abruptly narrowed to a winged stalk; glabrous stalk bases fused, sometimes hairy. First and subsequent few leaves elliptic; base abruptly tapered to a stalk; glabrous or with a few hairs.

This species is characterized by a basal rosette of leaves and leafless spikes of inconspicuous flowers. The leaves are perennial, broadly elliptic to ovate, leaf base abruptly tapered to weakly lobed, leaf margins smooth to finely toothed. The leaves spiral on very short stems which are weakly woody. Foliage is usually glabrous (hairy). Roots are a dense cluster of fibrous roots.

Habitat – Secondary forage while immature, nearly no value at maturity. Actively growing in spring and summer, begins blooming in spring, reaches maturity end of summer or early fall.



Mature Plant



Seedling



Fruit and Flower

Plantago lanceolata (Narrow leaf plantain) (I/P) – Cool season

Identification – Cotyledons oblong; base abruptly narrowed to a winged stalk; glabrous stalk bases fused, sometimes hairy. First and subsequent few leaves elliptic; base abruptly tapered to a stalk; glabrous or with a few hairs.

This species is characterized by a basal rosette of leaves and leafless spikes of inconspicuous flowers. The leaves are perennial, narrow elliptic to ovate, leaf base abruptly tapered to weakly lobed, leaf margins smooth to finely toothed. The leaves spiral on very short stems which are weakly woody. Foliage is usually glabrous (hairy). Roots are a dense cluster of fibrous roots.

Secondary forage while immature, nearly worthless at maturity. Actively growing in winter and spring, begins blooming in late spring, reaches maturity end of summer or early fall.

Habitat – Common throughout California.



Vicia villosa (Lana vetch or Woollypod vetch) (I/A) – Cool season legume

Identification – Lana Woolly Pod Vetch is a hard seeded, self-regenerating annual with a semi erect growth habit. It demonstrates mid maturity along with a semi erect growth habit. Lana is suited to a wide range of soil types, performing better on lighter soil types compared to other Vetch species. Lana has shown to have better drought tolerance than other wooly pod vetches. This makes it well suited to range plantings and being a highly efficient and effective soil nitrogen producer.

Secondary forage while green due to its bitterness, palatability and quality increase as it dries. Care should be taken that grazing is not too severe when pods are immature or population density will decrease over time. It can be toxic in very high quantities. Actively growing in winter and spring, begins blooming in late spring, reaches maturity early summer.

Habitat – Common throughout most of California.



Common Native Grasses in California's Interior Rangelands

Nassella pulchra (Purple needlegrass) – Native

Identification – This species is a cool-season long-lived perennial. It begins growth in fall or spring and flowers between April and May.

Densely tufted, culms 2 - 3 feet tall; inflorescence is a panicle type, 6 – 8 inches long, strong nodding habit (droops over when heavy with seed) open to loose; leafy base; spikelets purplish; lemma dark, nearly glabrous except at base and summit; awns are strongly bent twice with a straight end segment.

Secondary forage value year round except in May and June when its sharp-tipped awns and seeds become injurious to livestock. Because livestock prefer other native species over purple needlegrass, often seen in abundance after a rangelands have been grazed.

Management – Grazing strategies should attempt to avoid grazing this species in May and June while this plant is in its period of maximum growth.

Habitat – This species has been identified from San Diego County north to Humboldt County, in the San Joaquin and Sacramento Valleys, and is most abundant in the coast range.



Mature Plant



Seed Heads



Seeds



Seedling

Nassella cernua (Nodding needlegrass) - Native

Identification – This is a long-lived, cool-season tufted perennial needlegrass. Very similar appearance to purple needlegrass but it is generally smaller with thinner leaf blades. Tufted appearance, mature plants reach 12 to 40 inches tall; flowers late April to May, inflorescence reaches 6 to 32 inches in length; inflorescence is a panicle with slender flexuous branches; awns are very long (18 – 43 inches), slightly twisted, prominent feature of the plant.

Management – Secondary forage to livestock early in the season (December to March), of little forage value throughout the year due to sparse foliage.

Habitat – This plant is native to chaparral and dry slopes in the Sierra Foothills, the inner North and South coast ranges, and valley grasslands. It is especially adapted to sandy, well-drained soils and rocky soils.

A very useful grass for use in harsh conditions such as low fertility soils, roadcuts, roadsides, hot and dry meadows. Good for use in erosion control due to its extensive root system.



Mature Plant



Seed Heads



Seeds



Seedling

Melica californica (California melic) - Native

Identification – Medium-sized, loosely tufted perennial with bright green leaves

Relatively robust, loosely tufted perennial, usually from 21 to 50 inches in height. The inflorescence blooms in May and is a narrow panicle type. The inflorescence may be white or sometimes purplish in color, usually 6 to 8 inches in length. Its lower sheaths are persistent, brown and shredded; spikelets short-pedicelated, about .2 to .6 inches long, usually 2 to 4 flowered; no awns present.

Habitat – This species occurs in the northern Coast Ranges and at low to middle elevations in the Sierra Nevada. This species has become abundant on protected areas, indicating that reestablishment of this plant is possible with proper grazing management.

Forage value for livestock is considered secondary and cattle will graze it all season long.



Seeds



Seed Heads



Seedling



Mature Plant

Festuca californica (California fescue) - Native

Identification – Cool-season long-lived perennial bunchgrass. Leaf blades are flat and rolled in the bud, this plant exhibits a green or blue-grey color. A mature plant can be anywhere between 18 to 48 inches tall. Its inflorescence blooms between April and June. Inflorescence is a panicle type with a long and drooping appearance; branching occurs at each node of the inflorescence. Spikelets present at the ends of the inflorescence branches and are 4 to 5 flowered; awns are present but usually very short.

Habitat – This grass can be found on the coast ranges, the Sierra Nevada, Northwestern and Central Western California and the Cascade Range. This grass prefers north facing slopes and can grow in fertile soils to poor and serpentine soils.

New growth of this species may be considered primary forage for livestock; it becomes secondary forage later in the season.



Hordeum brachyantherum (Meadow barley) - Native

Identification – This species is a medium sized (up to 35 inches) cool-season, short-lived, tufted, perennial bunchgrass. Its leaves can be smooth or hairy and are usually a ¼ inch thick. This grasses inflorescence blooms between May and August ; it has a spike inflorescence usually 3 to 4 inches in length that can have a purplish to reddish cast, spikelets and awns are about .2 to .4 inches long each.

Habitat – Found throughout California except in the desert. Prefers sites such as flood plains, bottomlands, streambanks and grassy slopes.

This plant is useful in reclamation work and erosion control due to its fast-growing tendencies and deep root systems.

Primary forage value early in growing season, secondary forage after plant reaches maturity.



Mature Plant



Seeds



Seed Heads



Seedling

Leymus triticoides (Creeping wildrye) - Native

Identification – This grass is a long lived perennial and stays green longer into the summer than cool-season annuals. It is typically a tall grass that can be between 18 and 51 inches in height; root system is strongly rhizomatous; leaves can be green to blue green, about 1/10 inch in width; flowers May to July, inflorescence is spike like and reaches between 2 and 8 inches long, spike inflorescence curves after maturity; spikelets are ~ ½ inch in length; awns are tiny, about 0.1 inches.

Management – This plant is widely used for its erosion control benefits due to its deep rhizomatous root system and its characteristic of laying flat during high water flows. It allows full water flow while also protecting the bank

Primary forage in the spring remains secondary forage throughout the year.

Habitat – This plant is one of California's more common riparian understory grasses. It can be found throughout the state in deep and moist soils (not present in deserts). It prefers good soils but is adapted to alkaline and salty soils and high summer temperatures.



Mature Plant



Seed Heads



Seedling



Seeds

Elymus trachycaulus (Slender wheatgrass) - Native

Identification – This plant is a medium-lived perennial bunchgrass which usually grows to be between 12 to 59 inches tall and usually forms dense tufts. The inflorescence is a slender spike which can be 4 – 12 inches long; flowers appear between June and September; spikelets are 5 to 7 flowered and are more loosely spaced on the lower part of the spike; awns are very short. Depending on the variety, the leaves of this species may have a bluish cast.

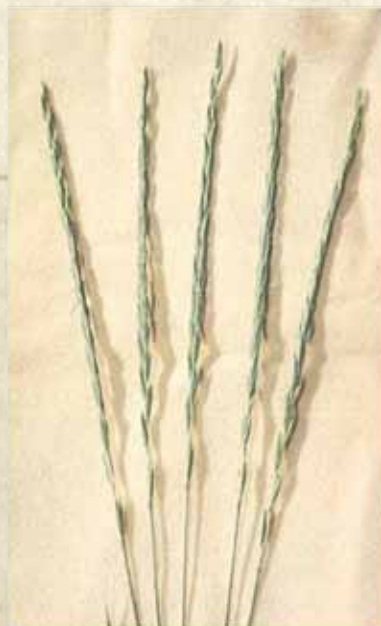
Habitat – Found on drier to slightly moist soils, elevations from sea level to 9,000 feet. It may grow on neutral, alkaline or serpentine soils, grows very well on dark hydric soils of the Sacramento River Valley.

This plant is excellent for use in erosion control due to its extensive root system. It will compete well with annual grasses and other weeds because it is quick to establish and fast growing. Intense grazing will severely weaken this species.

Primary forage while immature (January to March), secondary forage thereafter.



Mature Plant



Seed Heads



Seedling



Seeds

Elymus elymoides (Squirrel tail) - Native

Identification – This species has stiff erect to spreading culms that are 4 – 18 inches tall with firm blades. The spike is between 2 and 7 cm long, rarely longer; awns of glumes and lemmas are 2 – 10 cm long.

This species is considered secondary forage throughout the year, because even though it is fairly palatable during its growth phase its disjointed seedheads may injure livestock and make it unpleasant to graze.

Habitat – Common throughout dry rocky uplands.



Poa scabrella (Pine bluegrass) - Native

Identification – This species may form dense tufts up to 4 in across, with a mass of rather dense foliage at the base about 4 – 7 inches tall. Its panicle is narrow but loose.

Habitat – This species is found throughout California and is most abundant in the upper ponderosa pine-sugar pine belt and in the Douglas fir forest. It is also present at low elevations in coastal counties.

Primary forage while immature (December – January), becomes secondary forage at the time of flowering (March – April), and worthless at seed maturity. On summer ranges this plant can be important forage for lambs and cattle.



Agrostis exerata (Spike bentgrass) – Native

Identification – Tufted perennial with variable form, can be low-medium height, while others can be robust and up to 120 cm. Blades flat; panicles variable nearly always dense, but can be loose to open when mature.

Habitat – Common on moist soils in springs, seeps and riparian areas and common in meadows at higher elevations or in coastal zones with high precipitation.

Primary forage species for grazing animals, but care should be taken that over use doesn't occur or a marked reduction in this species can occur. Will not persist with heavy grazing or when competition from other species exists.



Bromus carinatus (California brome) Native

Identification – Large leafy biennial or short lived perennial bunchgrass (cushion-like) reaching 18 – 59 inches in height and about a foot wide. Leaves are drooping, between $\frac{1}{2}$ and 1 inch in wide and may be hairy or smooth. Panicle inflorescence with strongly flattened spikelets reaching 2 inches in length. Straight awns between $\frac{1}{4}$ and $\frac{1}{2}$ inches long.

Habitat – Native to California and found throughout most of the state especially in woodlands and low to middle elevations of the foothills. Requires 12 – 40 inches of rain per year but can also be drought resistant.

Primary forage value while immature and secondary when mature.



Mature Plant



Seed Heads



Seeds



Seedling

Muhlenbergia rigens (Deergrass) – Native/Perennial

Identification – Large native perennial grass, densely tufted from a knotty, close-rhizomatous base; culms 60-150 cm tall, erect to widely spreading. Blades scabrous and elongate 20-50 cm long and long tapering to the tip; panicles whiplike, dense 15-50 cm long; spikelets numerous, grayish; lemmas awnless.

Deergrass is a summer flowering grass that is rarely palatable to livestock due to the coarse, scabrous nature of the foliage, although young shoots may be lightly grazed by cattle and horses. Sheep will avoid it.

Deergrass is important to many Native American tribes who used its long seedstalks as the principal material in coiled baskets.

Habitat – Native along springs, streams edges, meadow edges or on seeps along hillslopes. Occurs from near sea level to about 7000 feet, throughout California.



Glossary of Terms

Auricles – a lobe or appendage sometimes found at the base of the leaf blade.

Awns – bristle-like appendage, usually a continuation of the mid-nerve of the lemma or glume

Calyx – collective term for the sepals which may be separate or united

Cespitose – growing in dense tufts

Cotyledons – the primary or rudimentary leaf of the embryo of a seed plant

Culms - Stem

Floret - flower

Genticulate – bent, like a knee

Glabrous – without hairs; not smooth; slightly rough feel

Glume – two empty scales at the base of the spikelet.

Inflorescence – the arrangement of the flowers on the stem or the cluster of flowers.

Lemma – a scale that encloses a single flower

Ligule – a little projection at the top of the leaf sheath, on the inside

Ovoid – Shaped like an egg

Panicle – a compound raceme; flowers borne on stalks that branch off larger stalks

Pilose –soft straight hairs

Raceme – an elongated flower cluster with flowers borne singly, each one on a stalk

Rachis – the axis of the whole inflorescence

Scabrous – rough to the touch like the feel of fine sandpaper; small barbs or very short stiff hairs

Schizocarp – dry fruit that splits at maturity into two or more one-seeded segments

Sepals – Usually the green leafy part of a flower; occurs beneath the petals

Sessile – having no stalks

Sheaths – in grasses, the basal portion of the leaf that surrounds the stem

Spikelet – elongated inflorescence of flowers without individual stalks

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