

California Noxious Weed Rating

"A" Rated: A pest of known economic or environmental detriment and is either not known to be established in California or it is present in a limited distribution that allows for the possibility of eradication or successful containment. A-rated pests are prohibited from entering the state. A-rated pests are subject to state (or commissioner) enforced action involving eradication, quarantine regulation, containment, rejection, or other holding action.

"B" Rated: A pest of known economic or environmental detriment and it is of limited distribution. Subject to state endorsed holding action and eradication to provide for containment. At the discretion of the individual county agricultural commissioner they are subject to eradication, containment, suppression, control, or other holding action.

"C" Rated: A pest of known economic or environmental detriment and is usually widespread. They are subject to regulations designed to retard spread or to suppress at the discretion of the individual county agricultural commissioner. There is no state enforced action other than providing for pest cleanliness.

(Carduus nutans)

Origin: Native to Europe, introduced into North America in the mid 1800's

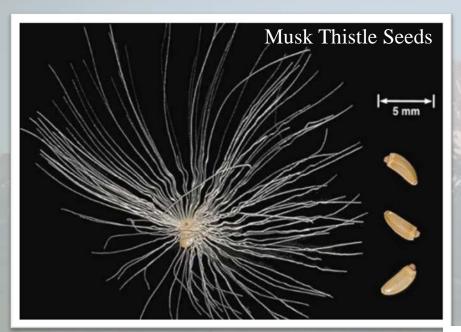
Rating: CA- A

<u>Habitat</u>: Tolerates a wide range of conditions, from acidic to saline soils and fertile to poor soils.

Plant Description:

- Biennial typically growing 5-6 feet tall.
- Leaves are dark green, hairless, waxy and have characteristic white margins and are coarsely lobed with white spines along margins.
- Flower heads are up to 3" in diameter, and produce numerous tufted seeds.
- They droop or "nod" when fully developed and have magenta florets.





•Seeds are readily transported by water, wildlife, and human activity an may remain viable in the soil for years

•Seedlings: 3-9 mm wide and 8-20 mm long. Notice that the first two leaves alternate.





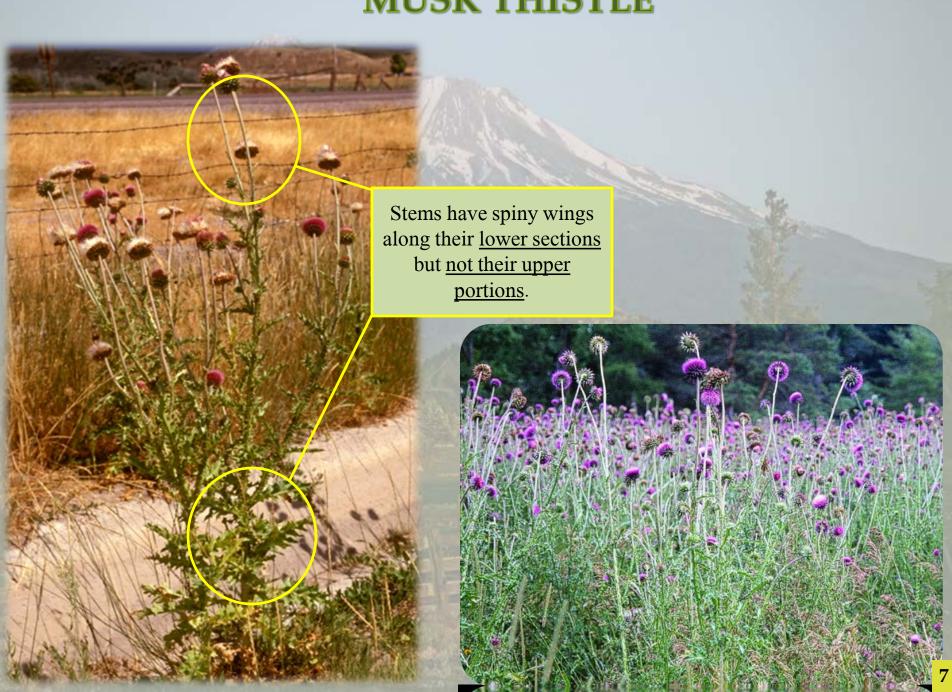
Musk thistle rosette

Mature Plant

•Stems narrow winged, glabrous to wooly. Leaves 1-2 pinnate lobed, glabrous to sparsely hairy. Lower leaves 10-40 cm long.







An example of a musk thistle infestation:



Scotch Thistle

(Onopordum acanthium)

Origin: Europe

Rating: CA-A

Habitat: Often inhabits sites with high soil moisture, also can be found along canals and ditch banks.

Plant Description:

- •Biennial, grows up to 7' tall.
- Stems branch with conspicuously spiny wings.
- Flower heads roundish, solitary or in small clusters.
- •One plant can produce an average of 20,000 to 40,000 seeds



Scotch Thistle



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Scotch Thistle seedlings (rosette).

•Seedling leaves are covered with white wooly hairs, the lower surface is more densely covered than the upper.

Scotch Thistle seeds



Scotch Thistle



(Cirsium vulgare)

Origin: Europe.

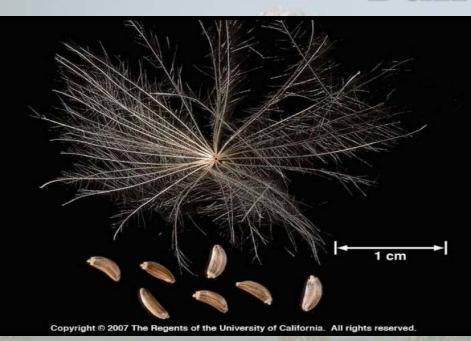
Rating: CA-C

<u>Habitat</u>: Disturbed areas including rangeland, pastures, and roadsides.

<u>Plant Description:</u>

- Plants grow from 3-4ft, leaves are long, lanced shaped, and lobed with coarse hairs.
- •Biennial, but can behave as an annual or short-lived perennial.
- •Stems are stout, hairy, and have spiny wings.





- Seeds have a feathery pappus that detaches at maturity.
- Plants can produce 100-300 seeds.
- Seeds are transported by water, wildlife, and human activity.

Seedling

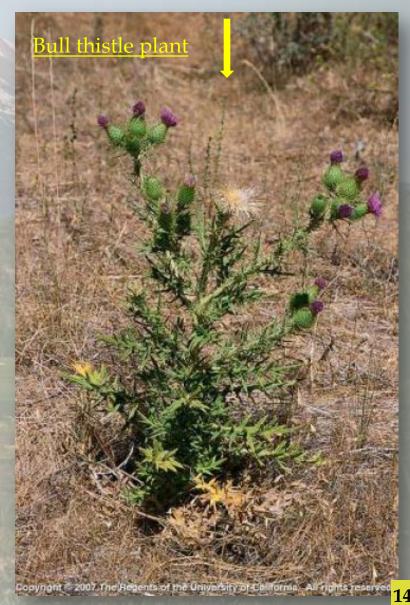
- •First leaf margins unevenly toothed.
- •Leaf surfaces are covered with *long*, stiff, papillae-based hairs.





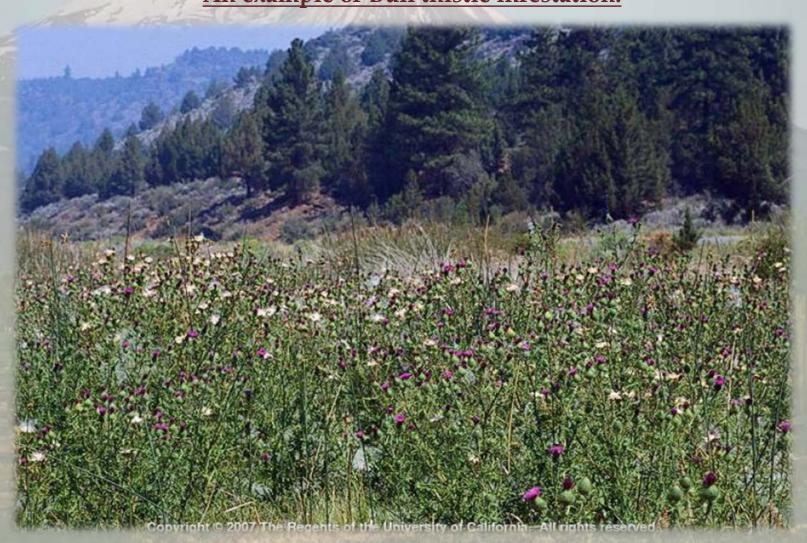
Bull thistle rosette

- •Mature plants produce pink-magenta flower heads at the end of each stem.
- •Leaves have sharp spines, the stem has spiny wings that run down the length of the stem.





An example of Bull thistle infestation:



Origin: Native to the Mediterranean region.

Rating: CA- A

<u>Habitat</u>: Disturbed sites, roadsides, fields, pastures rangeland. Thrives on fertile soil.

Plant Description:

- •Grows up to 2 m tall.
- •Stem wings usually 0.5 2 cm wide. Leaves 10-25 cm long, acutely triangular and are bright green in color.





Taurian thistle seeds

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Taurian thistle seedling

 Leaves usually covered with glandular hairs. Seedling do not compete well with established grasses.





Taurian thistle rosette



Foliage typically covered with short, sticky glandular hairs.



(Cirsium arvense)

Origin: Native to Europe

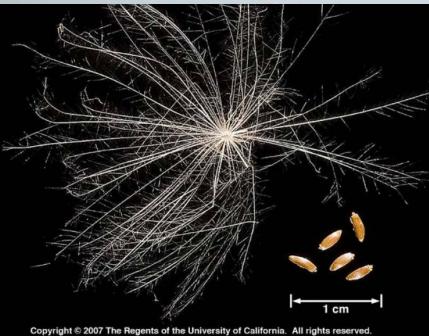
Rating: CA-B

<u>Habitat</u>: Rapidly colonizes disturbed, moist sites including prairies, meadows, ditches, stream banks, lawn and agricultural fields.

Plant Description:

- •Clump or patch forming perennial to 1 m tall, with extensive creeping roots and small unisexual flower head that lacks prickles.
- •Plants are male or female, and a dense patch of a single sex can occur.
- •Seeds have been know to live in the soil for up to 20 years.





Canada thistle rosette

- •First leaf margins slightly wavy to unevenly toothed.
- •Surfaces are covered with stiff hairs.
- •Lower surfaces often sparsely covered with soft cobwebby hairs.

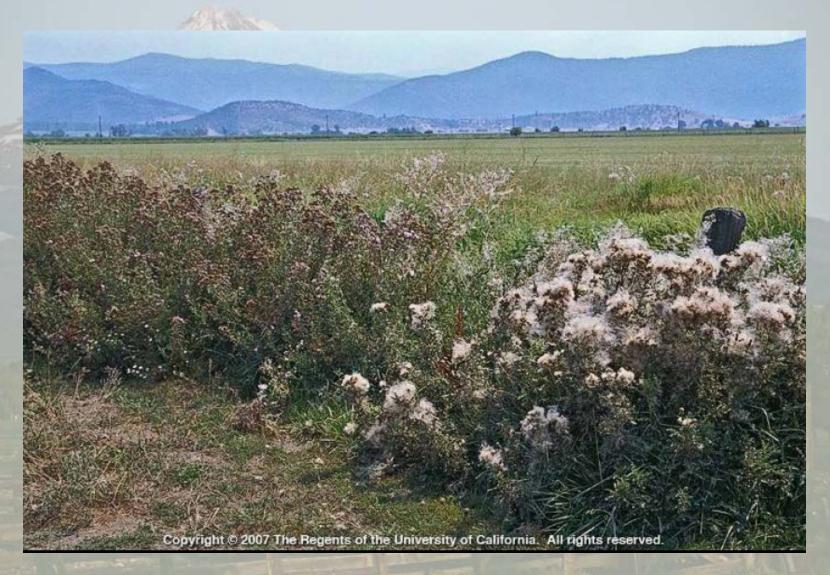
Canada thistle seeds







Male thistle



Canada thistle infestation, male (left) and female (right).

Musk Thistle	Scotch Thistle	Bull Thistle	Taurian Thistle	Canada Thistle
•Biennial	•Biennial	•Biennial	•Biennial	•Perennial
•Bracts end in small spines; wide & triangular.	•Bracts are spiny; Needle like; Tipped in yellow.	•Bracts spiny and tipped in yellow.	•Bracts are spine- tipped	•Bracts are not spiny.
•Stems are spiny along lower sections, NOT upper sections.	•Stems have spiny wings along the entire length.	•Stems are spiny along entire length.	•Stems are smooth on top.	•Stems are not spiny.
•Leaves are dark green, hairless, waxy and have characteristic white margins.	• Leaves/ foliage are covered with woolly pale gray hairs.	•Leaves are long, lance shaped, and lobed w/ coarse hairs covering both surfaces.	•Leaves are covered with short, sticky glandular hairs.	•Leaves are irregularly lobed, have very prickly and ruffled margins.
•Prefers disturbed sites and fertile soil	•Prefers disturbed sites; well drained soil or dry.	•Prefers various light and soil conditions	•Prefers fertile soil	•Prefers disturbed sites initially; or moist

Wavyleaf Thistle

(Cirsium undulatum)

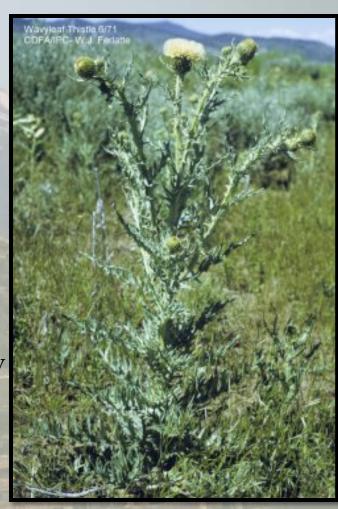
Origin: Native to the central states.

Rating: CA- A

Habitat: Shallow, sandy soils.

Plant Description:

- •Wavyleaf thistle can grow up to 1 m tall. They grow in clumps or patches.
- •Leaf bases extend down stems as inconspicuous prickly wings to about 1 cm long. Upper surfaces of all leaves are grayish, loosely covered with white woolly hairs.
- •Flowers can be white, pink, or pale to bright pale.
- •Wavyleaf resembles Yellowspine thistle.



Wavyleaf Thistle



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Wavyleaf rosette

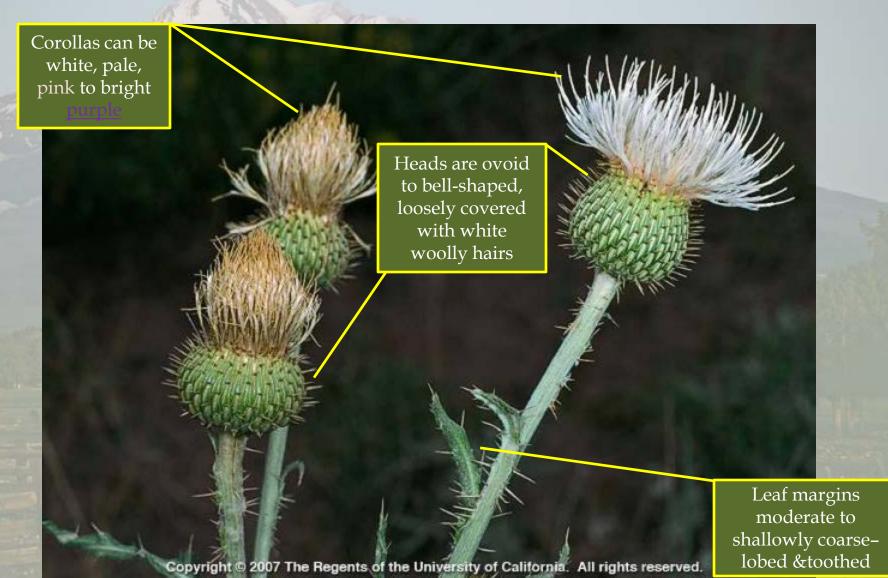
•Rosette leaf margins moderate to shallowly coarse-lobed and toothed, with main prickles mostly 2-5 mm long

Wavyleaf seeds



Wavyleaf Thistle

(Cirsium undulatum)

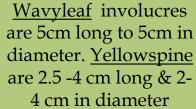


Wavyleaf thistle

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VS.

Yellowspine thistle



Wavyleaf rosettes are more than 3 cm wide and slightly longer than Yellowspine thistle



Wavyleaf thistle

VS.

Yellowspine thistle



Wavyleaf thistle flowering head.

Yellowspine thistle flowering head.

PURPLE STARTHISTLE

(Centaurea calcitrapa)

Origin: Native to southern Europe.

Rating: CA-B

<u>Habitat</u>: Frequently inhabits heavy, fertile soils.

Plant Description:

- •Annuals to perennials, to 3ft tall.
- •Reproduce only by seed that fall from parent plant, but can move longer distances when attached to animals.



•Seeds usually germinate the first year. Buried seeds can remain dormant for about 3 years.

PURPLE STARTHISTLE



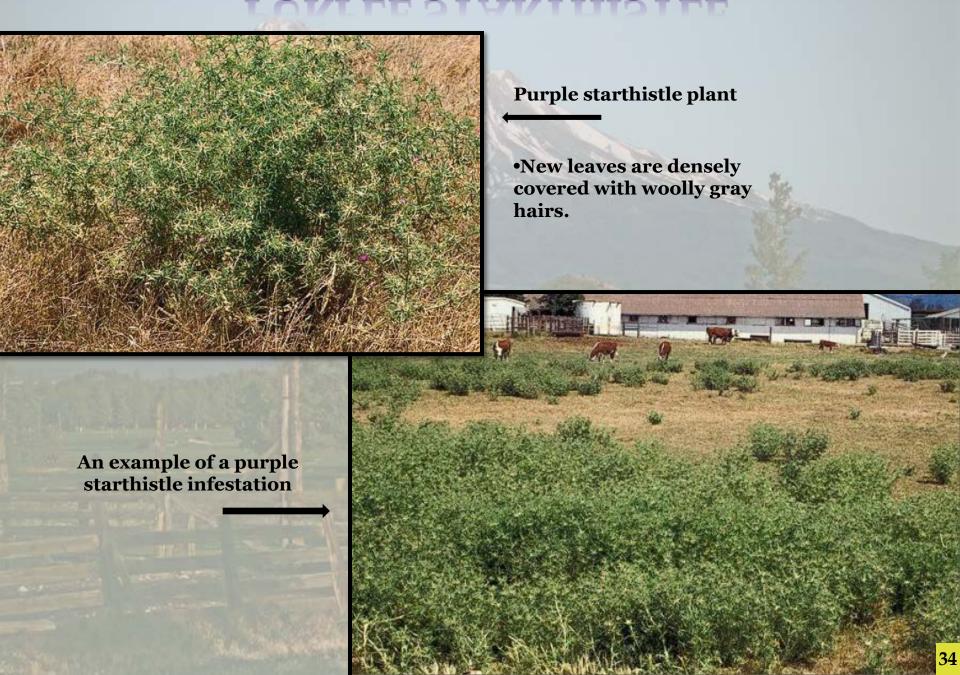
Purple starthistle seeds

Purple starthistle rosettes

 Rosettes develop conspicuous strawcolored spines at the corners of the rosettes.



PURPLE STARTHISTLE



Yellow Starthistle

Origin: Native to Southern Europe. Yellow starthistle was accidently introduced as a seed contaminant in alfalfa.

Rating: CA-C

<u>Habitat</u>: Open disturbed sites, open hillsides, grassland, fields, pastures, roadsides and even cultivated fields.

Plant Description:

- •Winter annual usually grows between ½ -6 ft tall and have a deep tap root that allows plants to utilize deep soil moisture not available to other species including grasses.
- •The flower heads are solitary on stem tips and consist of numerous yellow disk flowers.
- •Yellow starthistle causes a fatal nervous disorder called "chewing disease" in horses.



Yellow Starthistle



Slender white pappus bristles 2-5 mm long

Yellow starthistle seeds

Yellow starthistle seedling

•Plants form a basal rosette of leave until midspring. Rosette leaves typically wither by flowering time.



Yellow Starthistle

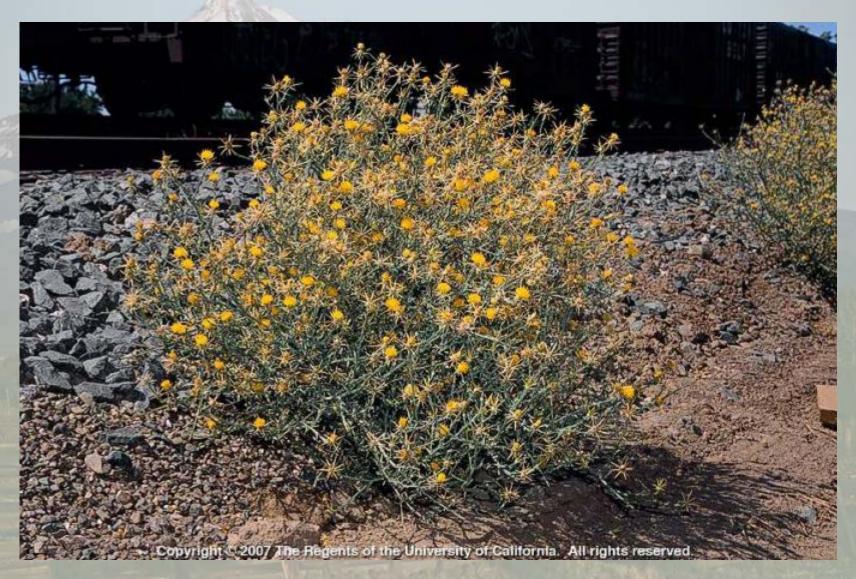
Base of the head is covered with bracts ending in long, sharp spines.



Flower head consists of numerous bright yellow florets.

Both stems and leaves are covered with dense hair, resulting in the graygreen color.

Yellow Starthistle



An example of a yellow starthistle plant.

Squarrose Knapweed

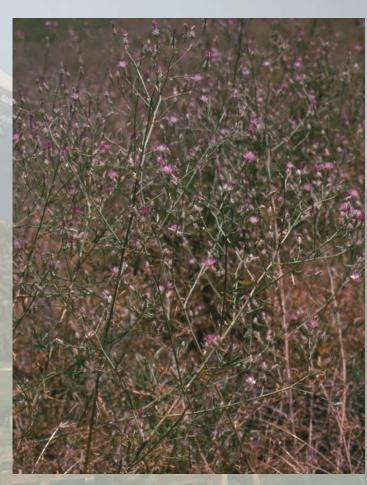
(Centaurea squarrosa)

Origin: Native to Asia

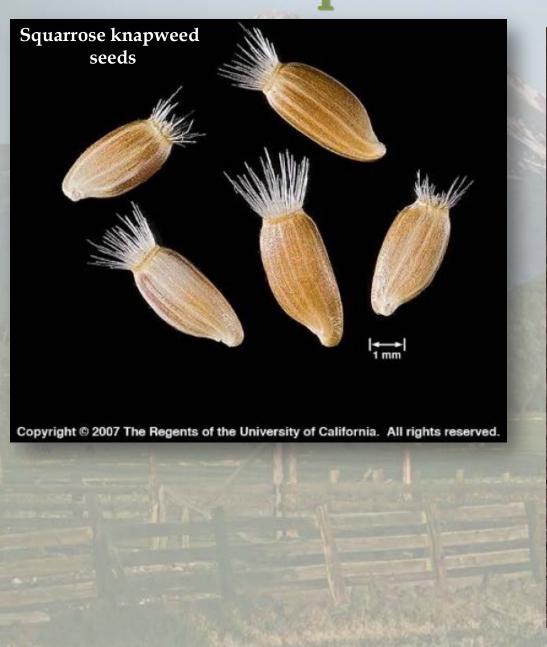
Rating: CA-A

<u>Habitat</u>: Fields, roadsides, disturbed open sites, Rangeland, logged areas

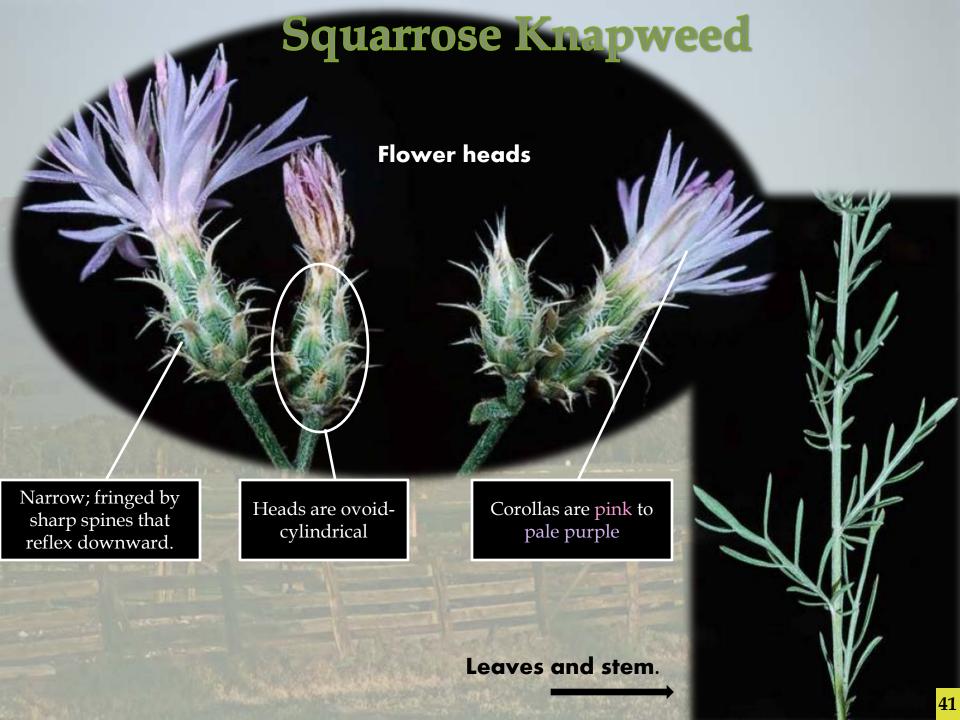
- Perennial that grows to about 3 ft tall
- •Plants are basal rosettes in fall and winter, bolting to produce erect, highly branched flowering stems.
- •Plants only reproduce by seed.
- •Squarrose Knapweed seed heads fall from the parent plant, as well as tumble along the ground and attach to animals hair or fur dispersing even further.



Squarrose Knapweed







Squarrose Knapweed



Squarrose knapweed plant

(Centaurea diffusa)

Origin: Native to southeastern Eurasia

Rating: CA-A

<u>Habitat</u>: Plains, rangelands, well drained soils, forested benchlands, rugged terrain not well suited for cultivation.

- Biennial or short lived perennial that grows to about 3 ft tall.
- •Diffuse knapweed has been shown to occasionally hybridize with spotted knapweed.

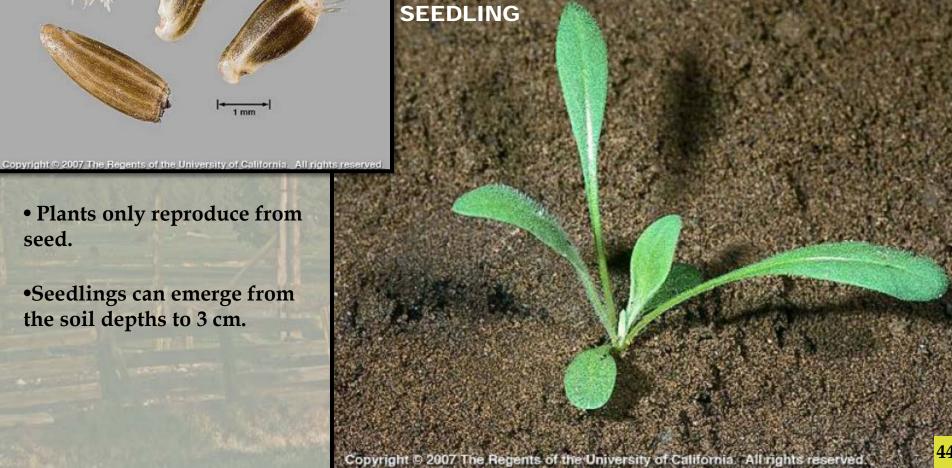


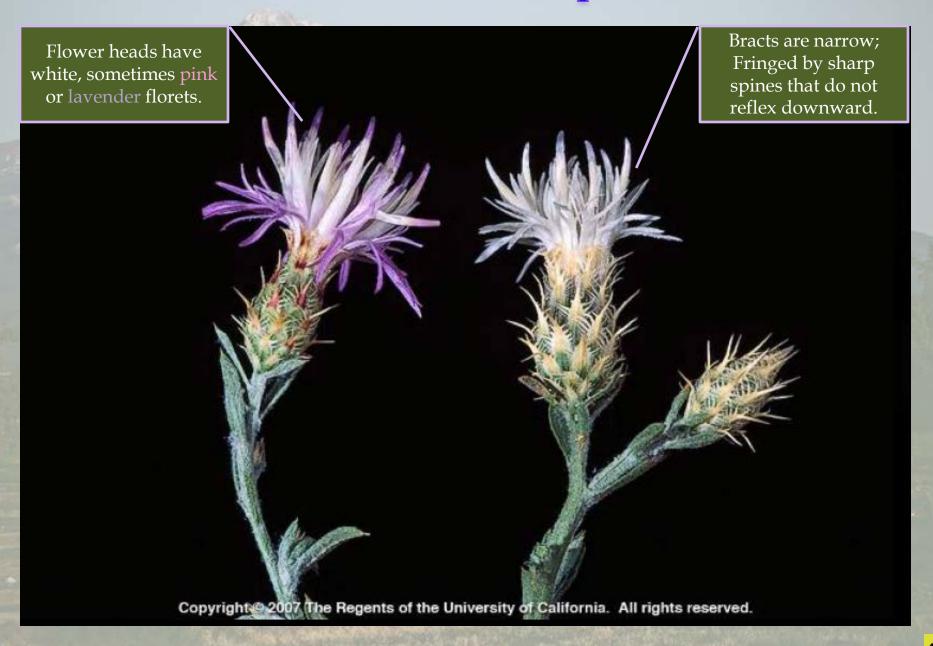


 Seeds often disperse when stems break off near the ground and tumble along with the wind

• Plants only reproduce from seed.

•Seedlings can emerge from the soil depths to 3 cm.





Stems are 1-3 ½ ft tall with numerous, spreading branches that give the plant a ball shaped appearance.



Stem leaves are stockless, getting smaller and less divided higher up the stem.

The lower stem leaves are 4-8 inches long and deeply pinnate-lobed one to two times.



Diffuse knapweed plants in two different colors forms.

(Centaurea stoebe)

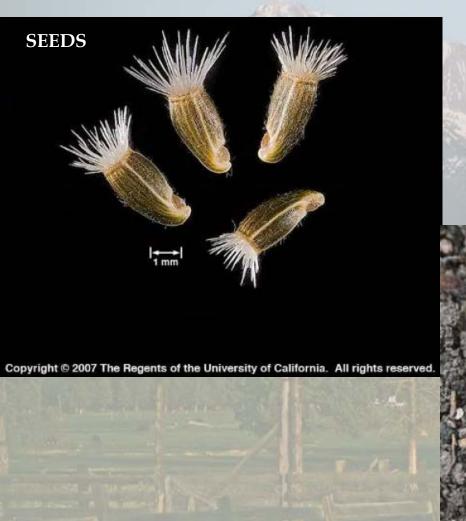
Origin: Europe, Asia; introduced in contaminated hay as early as 1890.

Rating: CA-A

<u>Habitat</u>: Fields, roadsides, disturbed open sites, grassland, rangeland, and logged areas.

- A busy winter-hardy, biennial.
- •Plants grow from 1-3 ½ ft in height and supported by a deep taproot.









Rosette leaves are gray-green, woolly, and deeply divided.

Stem leaves are pinnately divided, becoming smaller and less divided towards the tips of multiple woolly, hairy stems.







Spotted knapweed flower heads from bud to full flower.



Spotted knapweed plant

Meadow Knapweed

(Centaura jacea)

Origin: Native to Europe. Meadow knapweed is a hybrid of black and brown knapweeds.

Rating: CA-

<u>Habitat</u>: Pastures, moist sites, including moist meadows, river banks, streams, and irrigation ditches.

- Tap-rooted perennial to 3 ft tall, generally arising from a woody crown.
- •Resembles spotted knapweed but has longer phyllaries. Is a cross between Black and Brown knapweed.
- •Reproduces mostly by seed, but roots and root crowns can reestablish when fragmented.



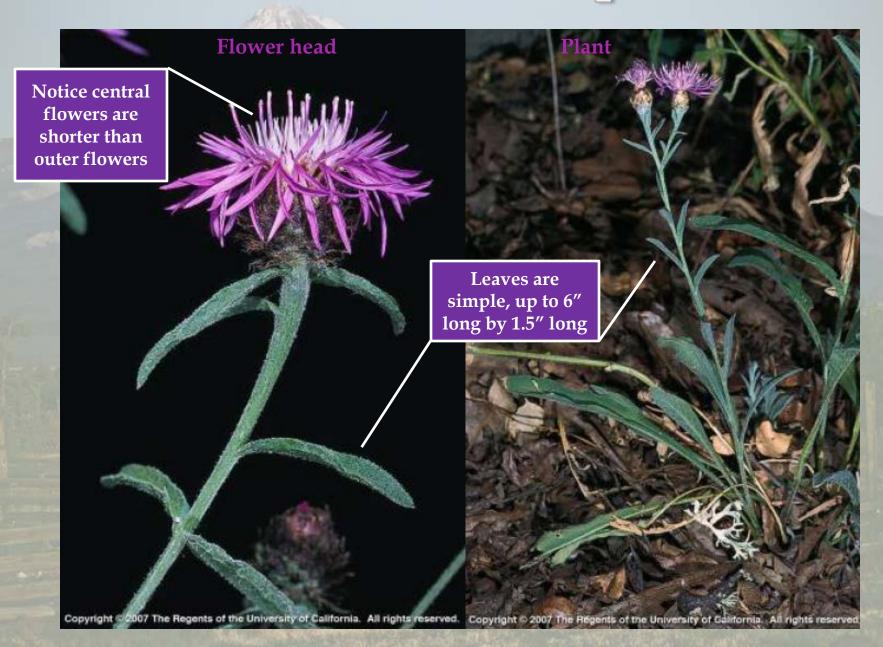
Meadow Knapweed



- Seeds are primarily dispersed in rivers, streams, or irrigation water.
- •Wildlife and birds will also spread the seed.



Meadow Knapweed



Russian Knapweed

(Acroptilon repens)

Origin: Native to central Asia.

Rating: CA-A

<u>Habitat</u>: Fields, rangeland, orchards, vineyards, ditchbanks, roadsides. Prefers sites with moist soils such as drainages and irrigated fields

- Noxious perennial to 3 ft tall.
- Russian knapweed is competitive and can rapidly colonize in disturbed areas.
- Toxic to horses, but livestock usually avoid it due to the bitter taste.

Russian Knapweed

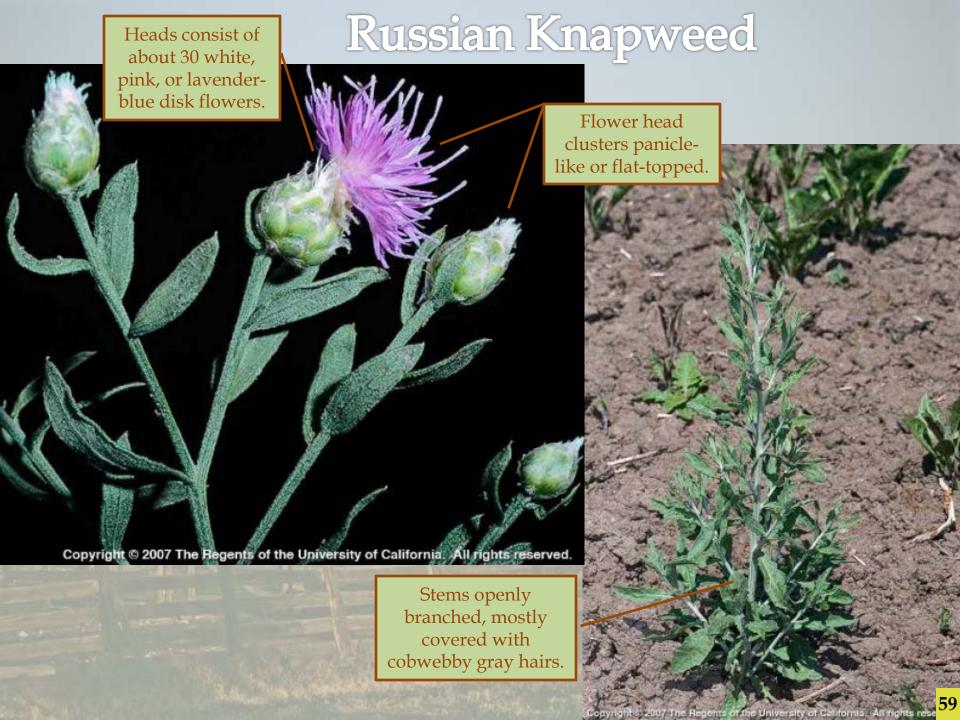


•Seeds appear to survive 2 to 3 years under field conditions.

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Seedling





Russian Knapweed



An example of a Russian Knapweed Plant

Squarrose	Diffuse	Spotted	Meadow	Russian
•Long lived perennial.	•Annual to short-lived perennial.	•Short-lived perennial.	Perennial.	•Annual to short-lived perennial.
•Flowers are pink to pale purple.	•Flowers can be white, pink, or pale purple.	•Flowers can be white, pink, or purple.	•Flowers are pink to purple.	•Flowers can be white, pink or lavender- blue.
•Bracts are narrow, fringed by sharp spines, strongly curved backward.	•Bracts are narrow, fringed by sharp spines that are NOT curved backward.	•Bracts are short &rigid with a dark brown triangular tip.	•Bracts have deeply fringed margins, appearing shiny & coppery when mature.	•Bracts have several overlapping green rows the tip is acute (not spine tipped).
•Stems are erect, branched, leafy & mostly covered in gray hairs.	•Stem leaves are stockless, getting smaller &less divided higher up the stem.	• Stem leaves are pinnately divided, becoming smaller &less towards the top Hairy stems.	•Stems leaves sometimes have tiny teeth or lobes, tapered at both ends & widest past middle.	•Stem leaves are openly branched, leafy & covered in cobwebby gray hairs.
•Prefers disturbed sites as well as dry.	•Prefers disturbed sites as well as dry.	•Prefers disturbed sites as well as dry to mesic.	Will grow in most sites.	•Prefers dry sites with full sun.



Origin: Native to southern Europe.

Rating: CA-A

Habitat: Waste areas, disturbed sites, roadsides, fields.

- •Leafy Spurge is one of the most tenacious weeds in the United States.
- Perennials up to 3 ft tall
- •Milky white sap and smooth, oblong to elliptical leaves.
- •Forms an extensive system of creeping roots that form adventitious root buds and generate new plants.





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- •Flowers from June-September, forms umbel-like flower clusters at the stem tips.
- •The flowers are yellow- green bracts (not petals).
- •The Flowers develop 3-chambered seed capsules.

- •Seeds are yellow-brown to gray or mottled, smooth.
- •Mature capsules rupture and eject seeds up to 16 ft.



Leafy Spurge



Stems are erect, glabrous, or hairy.

Flowers are tiny, lime green and enclosed by showy, yellow green bracts.



yer's Woad (Isatis tinctoria)

aka Marlahan Mustard

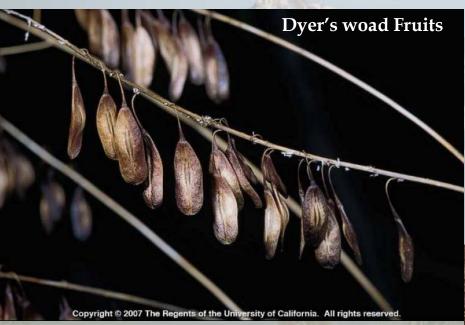
Origin: Native to Europe. Dyer's Woad was used as a medicinal herb and source of blue dye.

Rating: CA-B

Habitat: Disturbed areas, undisturbed sites, roadsides, fields, pastures, grain and alfalfa fields, forest and rangelands.

- •Biennial, sometimes winter annual or short-lived perennial.
- •Grows 1-3 ft tall, 4 ft under ideal conditions.
- •Dyer's woad is highly competitive and can grow in large dense colonies.





- •Dyer's Woad only reproduces by seed.
- •Seeds 1 per fruit, oblong, nearly round in cross-section.

Dyer's Woad Seedling

- •First and subsequent few leaves alternate, elliptic to oblong.
- •Sparsely covered with long hairs, the tip is often rounded.



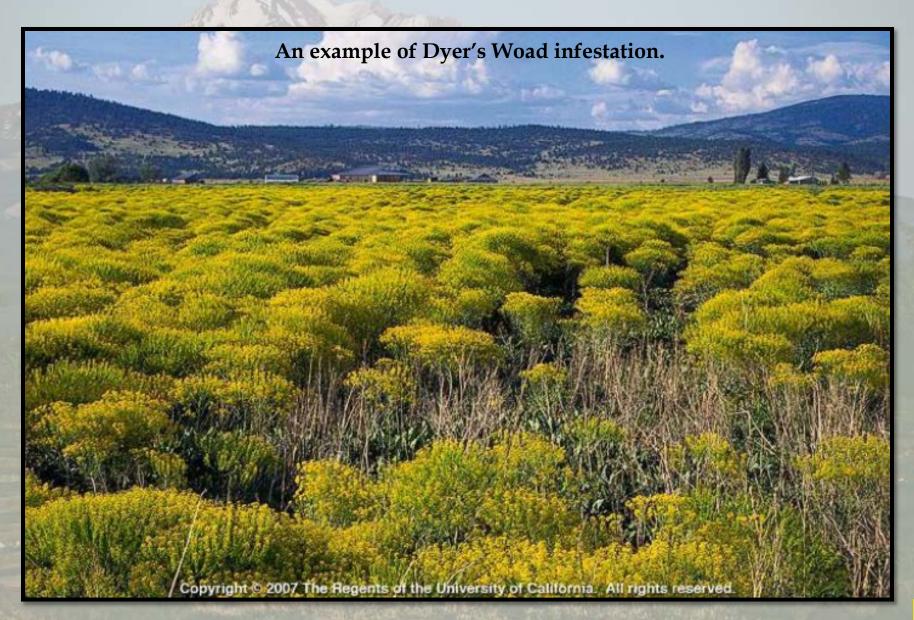




Dyer's Woad inflorescence

Dyer's woad plant in fruit





Scotch Broom

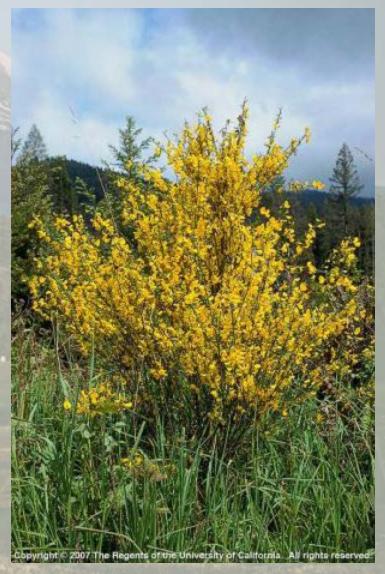
(Cytisus scoparius)

Origin: Central and southern Europe and North Africa.

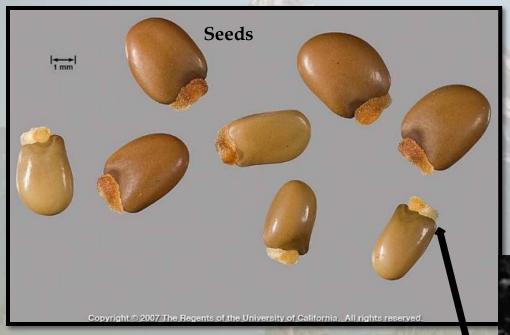
Rating: CA-C

<u>Habitat</u>: Grass lands, oak woodlands, typically in mountain regions and cool coastal areas with dry summers.

- Fast growing deciduous shrub, 5-10ft tall.
- •Plants begin flowering from 18 months to 3 years of age.
- Grows rapidly, forming dense stands that most wildlife find impenetrable and unpalatable.



Scotch Broom



- •Seeds have small cream-colored to yellowish appendage.
- •Pods are dark brown or black when mature.
- •When mature, pods eject the seeds several feet from the plant.



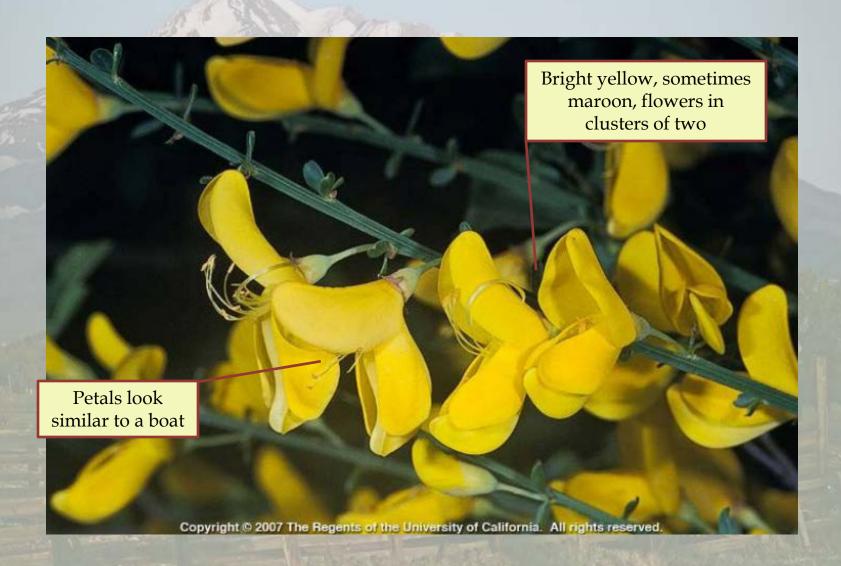
Scotch Broom



- •The leaves at branch bases have three leaflets alternately arranged.
- •Upper leaves are simple.



Scotch Broom



(Linaria dalmatica)

Origin: Native to Europe and the Mediterranean region.

Rating: CA-A

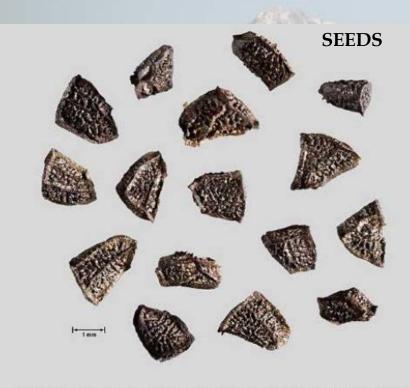
Habitat:Open fields, pastures, riparian areas, rangeland, and disturbed sites. Can tolerate many soil types.

Plant Description:

• Perennial that can reach a height of 3ft or more, with individual plants producing up to 25 stems.



- •Dalmatian toadflax is a persistent, aggressive invader capable of forming dense colonies through adventitious buds from creeping root systems.
- •Contains quinazoline alkaloids that could possibly pose toxicity problems to livestock if ingested in sufficient quantity.

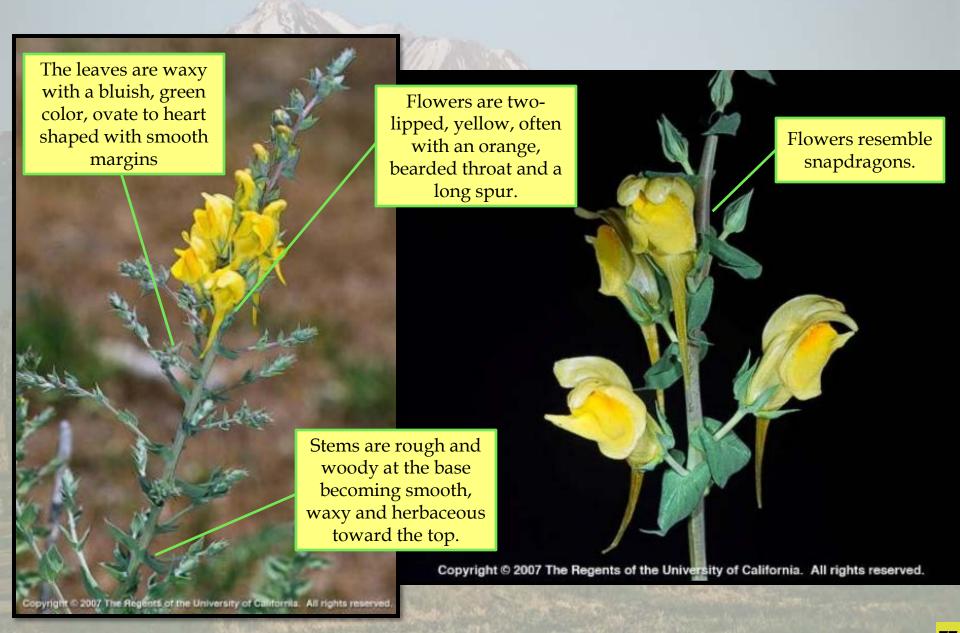


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- •Seedlings compete poorly with established vegetation for soil moisture.
- •Often unable to survive rapid or extreme temperature changes.

- •Seeds are pyramid like.
- •A single plant can produce 500,000 seeds per year







An example of a Dalmatian Toadflax infestation.

(Chondrilla juncea)

Origin: Native to southern Europe

Rating: CA-A

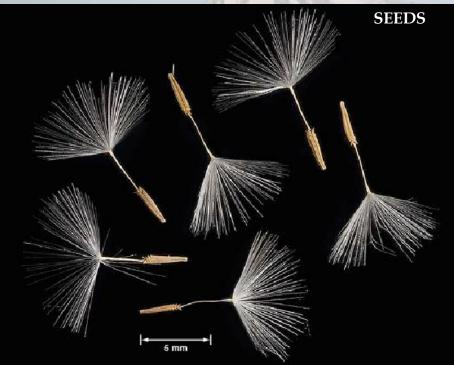
<u>Habitat</u>: Disturbed soils of roadsides, croplands, rangelands and semi-arid pastures.

Plant Description:

- Biennial to perennial up to 3ft tall.
- •Forms a slender, persistent taproot.



•Invasive and competitive for water and nutrients. Wiry flower stems can interfere with harvest machinery.



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- •Seedlings require a continuous moisture supply for up to 6 weeks to develop a persistent root system.
- •First leaves have backward pointing teeth.

- •Seeds survive less than 3 years.
- •Seeds are pale to dark brown.
- •Pappus seeds disburse primarily by wind.





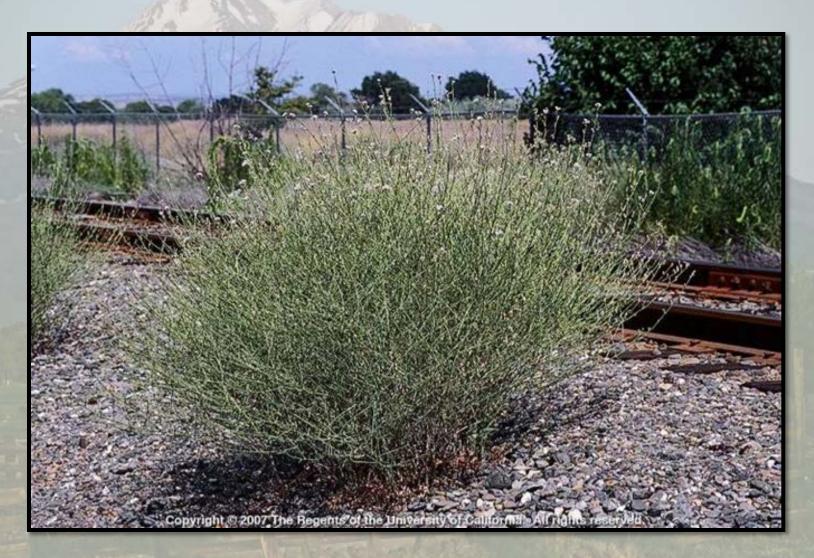
•Stems develop in late spring and flower until killed by frost in fall or winter.



•Rush skeletonweed immature foliage is very similar to dandelion and chicory.







An example of a Rush Skeletonweed plant

Prevention

You are the most important step in prevention.

You can protect your land, the landscape, rangelands, forests and riparian areas by stopping the spread and implementing quick eradication of discovered infestations.

Noxious weed management is ultimately the land owners responsibility.

Acknowledgements

Pictures and information provided from the following:

- •"Weeds of California and Other Western States" by Joseph M. DiTomaso and Evelyn A. Healy
- •Weed Control in Natural Areas in the Western United States" by Weed Research & Information Center, University of California
- Siskiyou County Department of Agriculture
- "Field Guide for the Biological Control of Weeds in the Northwest" by the University of Idaho
- •Slides developed and designed by Elizabeth Sousa, Administration Assistant III, Siskiyou County Department of Agriculture.