




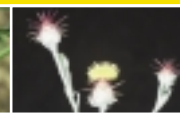



COMPARISON TABLE FOR KNAPWEEDS AND STARTHISTLES

Thumbnail Photos							
Species	Russian knapweed <i>Acroptilon repens</i>	Spotted knapweed <i>Centaurea maculosa</i>	Diffuse knapweed <i>Centaurea diffusa</i>	Iberian starthistle <i>Centaurea iberica</i>	Purple starthistle <i>Centaurea calcitrapa</i>	Tocalote <i>Centaurea melitensis</i>	Yellow starthistle <i>Centaurea solstitialis</i>
Life form	Perennial from deep, extensively branched roots	Biennial or short-lived perennial from deep taproot	Biennial from deep taproot (sometimes annual or perennial)	Annual to perennial from a stout taproot	Biennial from stout taproot (sometimes annual or perennial)	Annual from deep taproot	Annual; rarely short lived perennial, deep taproot
Growth habit	Erect, openly branched	One or more upright stems branched above the middle	Upright stems with many spreading branches; "tumbleweed" appearance	Similar to purple starthistle	Rosette at first, then sends up stem that grows into a mound-like form	Erect with branched, winged stems	Branched from base (bushy) or can have a central tree-like stem with branches
Height range	18 in. to 3 ft.	8 in. to 4 ft.	12 in. to 3 ft.	18 in. to 3 ft.	4 in. to 3 ft.	2 in to 3 ft.	4 in. to 5 ft.
Rosette (Basal) Leaves	Toothed; covered with fine hairs giving a blue-green color	Deeply divided into lobes	Deeply divided into lobes	Develop straw-colored spines in the center of the rosette	Develop straw-colored spines in the center of the rosette	Green, smooth-margined to pinnately lobed; often with hairs	Variable, often deeply lobed, sometimes smooth margined

Stem Leaves	Smooth-edged or toothed, smaller towards top of stem	Leaves of mature plant finely divided into linear lobes	Deeply divided into lobes; smaller and less lobed toward the top of the stem	Lower stem leaves coarsely lobed	Lower stem leaves deeply lobed	Not lobed, bluish-green; extend downward on stem	Not lobed, hairy, grayish-green; extending downward on stem
Flowerhead color	Pink-lavender	Pinkish-purple; rarely white	White, pink or lavender	White to pink	Purple	Yellow	Yellow
Flowerhead bracts	No spines. Pearly rounded appearance with pointed papery margins	No spines. Black margin on bract tips; gives spotted appearance	Bracts pale green with tan margin, short spines	1 inch spines with short spines at base	Straw-colored spines (up to 1 inch long) surrounded by smaller spines	Purplish to brownish spines 1/8 to 1/2 inch long; tend to bend downward	1-2 inch straw-colored spines 1 to 2 inches long
Last year's flowerheads	Old flower stems may persist for an extended period.	Persistent	Tend not to persist as long as other species	Seeds remain in the seed head and most fall near parent plant	Spines remain on bracts at end of growing season	Retain spines, often shed fuzzy center	Shed spines, retain fuzzy center ("cotton top")
Flowering period	June to September	June to October	June to September	July to October	July to October	April to July	June to September

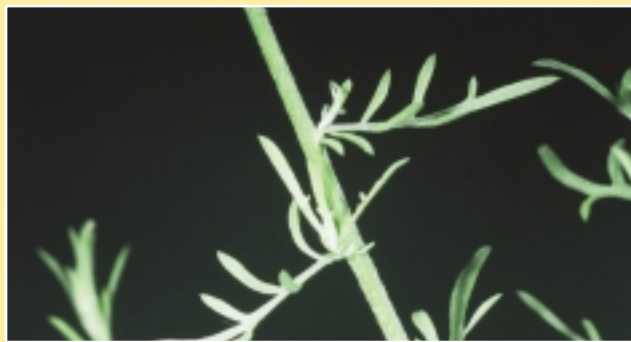
SUNFLOWER FAMILY (Asteraceae)

DIFFUSE KNAPWEED (*Centaurea diffusa*)

State Noxious Weed List: A-rated



diffuse knapweed flowerheads (note spine on flowerhead bract)



stem leaves



diffuse knapweed plants (note "tumbleweed" shape of plants)

DIFFUSE KNAPWEED

General description: Upright, branched biennial, grows from 1 to 3 feet tall. The numerous branches result in a tumbleweed shape. Basal leaves are deeply lobed and form rosettes. The stalkless stem leaves are deeply divided into narrow lobes, are alternate in arrangement, and range in length from 4 to 8 inches, but are increasingly smaller towards the top of the stem. Foliage is gray-green due to small, dense hairs.

Flowers and seeds: White, pink, or lavender flowers are produced June to September. Flowerheads are single or up to 3 in a cluster. Flowerheads are about 1/4 inch wide and 1/2 inch tall, with bracts forming an urn shape. Bracts are pale green with a border of cream-colored spines and a longer central spine which projects out from the flowerhead. Seeds germinate under a wide range of conditions, but especially after the first fall rains. Seeds may remain viable for up to 7 years.

Habitat: Diffuse knapweed can thrive under a wide range of conditions and elevations to around 7,000 feet. Often colonizes light, well-drained soils, but requires less moisture than spotted knapweed.

Mechanism of spread: Most seeds fall near parent plant but some disperse greater distances with human activities, vehicles, and heavy equipment. Dispersed by water, in soil, and by clinging to shoes, clothing, tires,

and animals. Entire plants or parts of plants can be blown by wind in a tumbleweed fashion, dispersing seeds along the way.

Impacts: Reduces biodiversity by crowding out native plants, reduces land value, increases cost of roadside maintenance, reduces forage for wildlife and livestock.

Origin and distribution: Native to the eastern Mediterranean and western Asia. Over 3 million acres are believed to be infested with diffuse knapweed in the western U.S. The only known infestation in our 3-county area is on the border of Mariposa and Madera counties south of Yosemite National Park.

Important control hints: Pulling or digging works if enough of the taproot is removed to discourage resprouting. Mowing and cutting do not achieve good control, and can stimulate new growth. See pages 4 and 5 for more information about control.