

## Management & Control Methods

Controlling YST requires a persistent and systematic effort over several years. Each site should be individually evaluated for the best control method.

**Mechanical-** Pulling, hoeing, or digging plants is a good way to kill small numbers of plants growing in new infestations, but hand removal is rarely effective with large infestations. Pull plants before they flower.

*Mowing & grazing if timed correctly can reduce canopy, plant density and seed production.* However, when applied during the early growth and bolting stages, they can increase populations by stimulating growth and branching (much like pruning a rose), as well as reducing competition of water and sunlight by removing desirable plants. Mowing should be done before seeds are produced just as the majority of flowers begin to bloom. If you mow too late then you increase seed dispersal and plant distribution. After mowing, be sure you clean your equipment on site so that you do not transfer this pest elsewhere.

**Biological-** The use of natural enemies to control pest populations is biological control. Four biological control agents, introduced from Greece, have been released locally. The insects include the bud weevil, hairy weevil, gallfly, and flower weevil. The larvae of these insects feed upon the flower heads and reduce seed production. This program is still in its infancy.

**Chemical-** There are many herbicides available to control YST. Depending on your site, selective, non-selective, pre-emergent, and post-emergent herbicides may be used. Always carefully read and follow the label directions. Proper timing and rate are important. Contact the Department of Agriculture to determine the best herbicide for your situation.

Combining herbicides with mowing, grazing, tillage, burning, or re-vegetation often provides better YST control than using any one-control method by itself.

**Cultural-** Establishing a healthy, competitive plant community can help prevent yellow starthistle invasion. Desirable plant species should be chosen depending on the intended use of the site. For more information on vegetation restoration, consult your local Cooperative Extension or NRCS office.

## For More Information:

- Plumas-Sierra County Department of Agriculture (530) 283-6365  
Website: [countyofplumas.com](http://countyofplumas.com)
- Plumas-Sierra University of California Cooperative Extension (530) 283-6270  
Website: [plumas-sierra.ucdavis.edu/](http://plumas-sierra.ucdavis.edu/)

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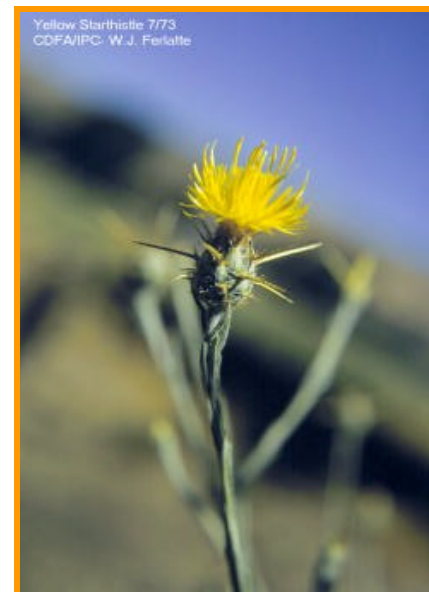
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# Yellow Starthistle

**AKA: *Centaurea solstitialis* L.**



**Plumas-Sierra  
Noxious WEEDS\*  
Management Group**

**\* “We Eradicate Exotic and  
Detrimental Species”**

[www.cdfa.ca.gov/wma](http://www.cdfa.ca.gov/wma)

**(530) 283-6365**

## History

Yellow starthistle (YST) is native to the Mediterranean region of Europe. It is speculated yellow starthistle was introduced into the Western U.S. as a contaminant in imported alfalfa seed from Chile in the mid-1800's. YST is toxic to horses; but can be eaten by other livestock before spines develop. Once a plant invades a site it may sit without increasing for years. As it becomes adapted to the environment, the population then "explodes" and spreads rapidly.

## Distribution

Over 10 million acres of California are heavily infested with yellow starthistle. In Plumas County, yellow starthistle is known to occur intermittently around Lake Almanor. Moderate to heavy infestations are established in Indian Valley up to Genesee Valley and in American Valley. Light to moderate occurrence is found along highway 70 from Beckworth down through the Feather River Canyon. Moderate to heavy infestations also exist in southwestern portions of Sierra County. There are a few sites in Sierra Valley.

## Lifecycle

Germination of seeds usually begins in the spring (March to April). But, it may continue throughout the summer as long as ample moisture and sunlight are available.



Once seedlings emerge, plants quickly develop into rosettes and establish a deep taproot.

### Keep an eye out for these

By June most plants have begun to bolt – producing a tall, erect stem from which branches occur.

These inches produce the plant's spiny flowers.



Plants usually mature in late summer. The entire plant is covered with soft, cottony hairs and the stems are very strong and rigid. As the bright yellow flowers begin to fade the seeds inside are maturing.



The inner seeds have a hairy bristle, and are moved to other areas by animals, water, humans, and vehicles soon after maturity. The outer seeds have no bristles and generally fall to the ground, as the flower head breaks apart in the winter. Each flower head can produce between 30-80 seeds. Most seeds germinate the following year, although seeds buried deep in the soil may remain viable for ten years or more.



## The Facts On Yellow Star Thistle!

**Habitat:** It infests rangelands, pastures, hay fields, orchards, vineyards, waterways, roadsides, and even forests and other non-crop areas.

**Growth:** It is an annual plant growing from a taproot. The stems are rigid, winged, and covered with a cottony pubescence. It grows from 1 to 3+ feet tall.

**Flowers:** The flowers are yellow, terminal, and armed with straw-colored  $\frac{3}{4}$  inch spines.

## What Can You Do?

- ✓ Recognize YST plants at various growth stages. Understand the lifecycle so you can manage accordingly. Effective tools applied at the wrong time can aggravate the situation.
- ✓ Proper timing of livestock grazing by goats, sheep & cattle, prescribed burning, specialized cultivation, and plant competition are effective non-chemical tools for managing YST.
- ✓ If you choose to use chemical control, work with the Agriculture Department to apply the right kind at the correct rate, time and stage of growth.
- ✓ Drive on established roads and trails so as not to transport weed seed from infested areas.
- ✓ Remove weed seeds from vehicle and bicycle tires as well as shoes, clothing and animals.
- ✓ If you see a few plants, pull them. Pulled plants should be burned or tightly bagged prior to disposal. Do not put them in your compost.
- ✓ Maintain good vegetative cover of land to minimize infestation of noxious weeds.
- ✓ Feed weed-free forages to livestock to avoid unintentionally contaminating an area.
- ✓ If a weed-infested area is found, inform the land-owner or manager so they can take steps to control the weeds (or notify the Agriculture Department).
- ✓ If you would like help in designing your personal weed strategy, please contact the Agriculture Department or Cooperative Extension.
- ✓ As with most things, diligent persistence and hard work reaps the greatest rewards.

