

Top 5 Weeds: Rangeland/Open Space

Stephanie Stark

Deputy Ag Commissioner

Santa Barbara County

Ag Commissioner/W&M Office



INVASION

of the

NOXIOUS WEEDS



Invasive Plant or Weed?

Invasive plants:

Disperse, establish and spread w/o help

Transform the landscape

Cause ecological disruption

Noxious

“Noxious” is a legal term, used by CDFA and USDA-APHIS.

To be considered noxious, a plant has to be listed on a noxious weed list maintained by one or both of these agencies.

Listing is based upon the threat of this weed to agriculture or noncrop areas and may lead to a ban, quarantine, or eradicate program

How Do They Get Here?

Usually accidental by people, animals, equipment, vehicles, or seed contamination.

Invasive species are more often introduced unknowingly on ornamental plants or food sources.



Foxtail Grass



© 2007 Robert E. Preston, Ph.D



Yellow & Green Foxtail (*Setaria pumila* & *Setaria viridis*)

- **Native to Eurasia**
- **Summer annual grass**
- **Deeply buried seed can survive for up to ~ 12 years**
- **Invasive & extremely weedy**
- **Broad range of habitats**
- **Reduce yields of forage crops (use only certified seed)**





Control



Cultural Control

- Tillage- controlling seedlings and young plants
- Grazing & Mowing-poor control

Chemical Control

- Resistance issues with some pesticides in the midwest.
- Good/Excellent Control: Fluazifop (Fusilade), Glyphosate and Imazapyr (Polaris)

Italian Thistle

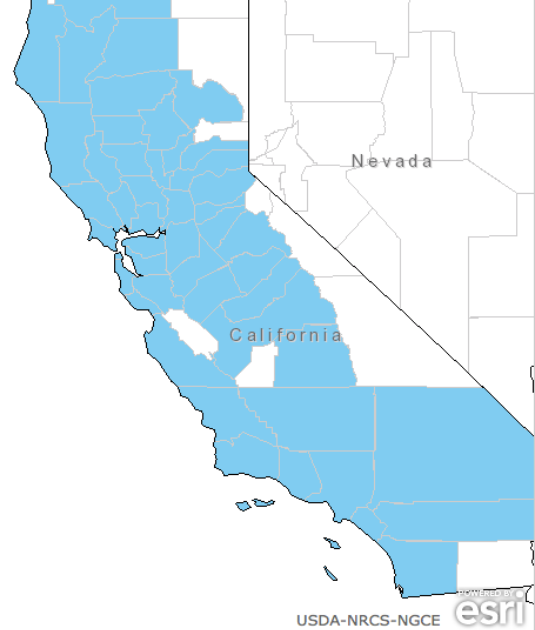




Italian Thistle

(*Carduus pycnocephalus* L.)

- **Native to Mediterranean region**
- **First reported in CA in 1930's**
- **Winter annuals or biennials**
- **Can grow up to 6 ft tall in fertile soils, deep taproot**
- **Compete poorly with healthy grass stands**



USDA-NRCS-NGCE 



Control



©2014 Croar.net

Cultural Control

- Dig/Till, Cut or Mow (wait until flower)
- Graze (before reach 4 inches tall)- sheep/goats

Chemical Control

- postemergent- Dicamba, 2,4-D, Milestone, glyphosate & combinations of these compounds provide excellent control

Biological Control

- **thistle head weevil** (*Rhinocyllus conicus*), *feeds on seed, fair control*
- **thistle crown weevil** (*Trichosirocalus horridus*), *feeds on roots/crowns, fair control*
- **thistle crown fly** (*Cheilisia corydon*), *larvae mine into stem*

http://wric.ucdavis.edu/information/natural%20areas/wr_C/Carduus_acanthoides-nutans-pycnocephalus-tenuiflorus.pdf

Puncturevine

**ANYONE THAT COMPLAINS
ABOUT STEPPING ON LEGOS**



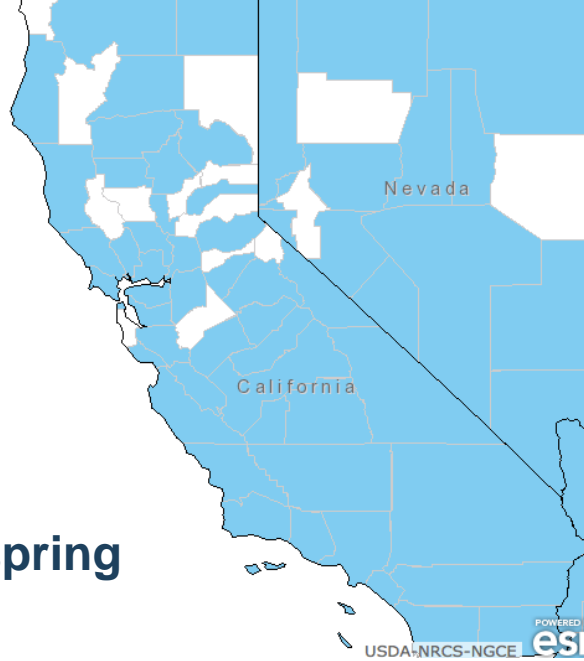
**HAS NEVER STEPPED ON
ONE OF THESE**





Puncturevine (*Tribulus terrestris*)

- **Native to Asia & Africa**
- **First reported in CA in 1903**
- **Annual broadleaf germinates: spring & summer**
- **Toxic to sheep**
- **Deep taproot- competes aggressively for water and nutrients**





Control



Copyright 2002 - University of Illinois



© 2000 Regents, University of California

Seed reduction is key!

Cultural Control

- Shallow tilling (~1 inch deep)
- Thick mulch
- Competition plants

Chemical Control

- Preemergent- oryzalin, benefin, or trifluralin
- Postemergent- 2,4-D, glyphosate, and dicamba

Biological Control

- **Two weevils** (*Microlarinus lareynii* and *M. lypriformis*) **feed on stems/seed and provide excellent control when used together.**



© 2011 Chris Baker

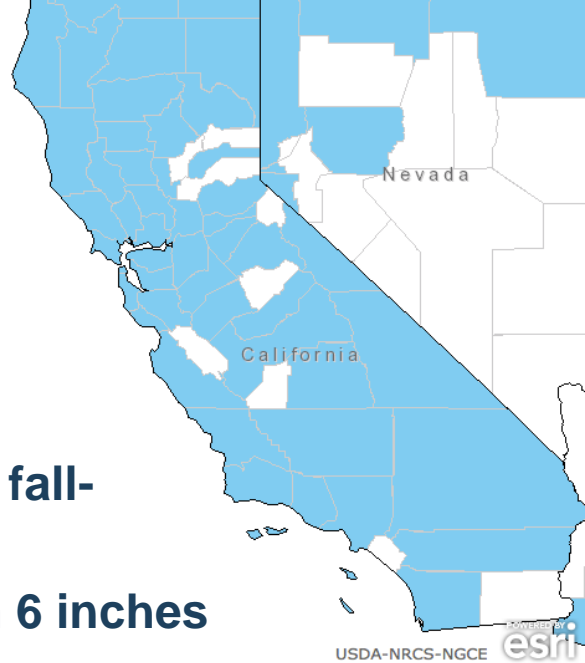
Yellow Starthistle





Yellow Starthistle (*Centaurea solstitialis*)

- **Introduced to CA around 1850**
- **Winter annual that germinates fall-spring**
- **Grows to heights varying from 6 inches to 5 feet**
- **Yellow starthistle is a major consumer of groundwater**
- **Reduces forage quality; toxic to horses**





Control

Cultural

- **Control of the current population, reduce seed bank and plant competitors. Multi-year effort.**
- **Mowing, grazing and burning options.**

Chemical Control

- **Pre and postemergence herbicides available.**
- **Glyphosate is the most effective. Wait until after rains, before seed production.**
- **Combinations of prescribed burning and clopyralid can be very effective for yellow starthistle control.**



Biological Control



© 2002 N. Poritz

- Use as part of an integrated approach with cultural (and some chemical) controls.

Species	Type of Agent	Site of Attack	Impact on Host	Effectiveness
<i>Puccinia juncea var. solstitialis</i>	Rust fungus	Leaves and stem	Stress reaction of plant causes decreased flower and seed production	Poor
<i>Chaeterolia succinea</i>	False peacock fly	Larvae develop in flower head, feed on seed	Can be combined to potentially reduce seed 43-76%	Good
<i>Eustenopus vilosa</i>	Hairy weevil			Good
<i>Ceratapion basicorne</i>	Root-feeding weevil	Rosette feeder and root borer	Unknown	unknown

<http://www.cal-ipc.org/ip/management/pdf/YSTMgmtweb.pdf>

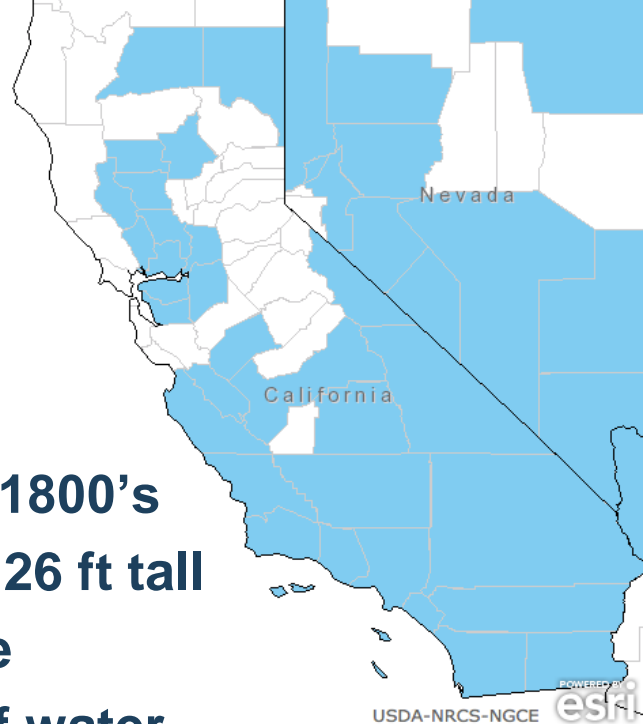
Salt Cedar/Tamarisk





Salt Cedar, Tamarisk (*Tamarix sp.*)

- Native to Asia
- Introduced to CA in early 1800's
- Shrubs or trees less than 26 ft tall
- Spread: seed & vegetative
- Absorbs large amounts of water and creates large deposits of salt
- Highly flammable even when green and healthy





Control

Cultural Control

- **Mechanical methods-resprout vigorously following cutting or burning**
- **Root plowing and cutting are effective initially**
- **Fire for thinning heavy infestations, follow-up herbicide application**

Chemical Control

- **Systemic herbicides- foliar sprays, cut stump treatments, bark treatments, and aerial sprays**



Biological Control



Diorhabda carinulata

Tamarisk leaf beetle (genus *Diorhabda*)

- Feed by scraping off protective surface of the foliage
- Defoliated, water loss to the atmosphere is halted-annual water savings over 65% have been measured in some regions.
- Tamarisk initially re-grows after defoliation, but gradually dies back.
- Not eradicated, but it is suppressed

California Alliance for Tamarisk Biocontrol

<http://rivrlab.msi.ucsb.edu/projects/california-alliance-tamarisk-biocontrol>



Questions?

Stephanie Stark

Deputy Ag Commissioner

805.681.5600

sstark@agcommissioner.com