

# Prescribed Fire on California Rangelands

A red fire engine is driving through a field of tall, dry grasses that are on fire. The fire is bright orange and yellow, and the engine is moving from left to right. The background shows a hazy, brownish landscape with hills and a fence line.

Scott Oneto  
University of California Cooperative Extension  
Farm Advisor

# Benefits of Fire

- Goes where equipment & 4-wheeler cannot (min. soil dist.)
- Non-selective consumer of forage.
- Fresh forage with increased quality and palatability.
- Can kill those nasty weeds.



# Things to Keep in Mind



- Consumes RDM
- Reduces forage growth subsequent year(s)
- Requires rest
- Consumes organic matter reserved for soil
- Liability
- Increases forbs (toxic?)
- Species shifts

# Using Fire for Weed Control







Copyright © 2007 The Regents of the University of California. All rights reserved.



Copyright © 2007 The Regents of the University of California. All rights reserved.

# Medusahead

*(Taeniatherum caput-medusae)*



Copyright © 2007 The Regents of the University of California. All rights reserved.

**Barb goatgrass**  
(*Aegilops triuncialis*)

Copyright © 2007 The Regents of the University of California. All rights reserved.







**University of California**  
Agriculture and Natural Resources



Yellow starthistle  
(*Centaurea solstitialis*)

# Overview

- Native to Mediterranean, Middle East and Central Asia
- First introduced to U.S. in late 1800's or early 1900's
- Today Medusahead infests over 2.5 million acres across the western U.S.
- Barb goatgrass less abundant than Mh, but spreading rapidly
- Yellow starthistle infests nearly 15 million acres in California

# Impacts

- Transformer species – create monocultures
- Poor forage for grazing – unpalatable
  - Reduces grazing capacity up to 80%
- Nasty awns/spines can cause injury to animals
- YST poisonous to horses
- YST can be nutritious early on but becomes less palatable with age
- Mh and Bgg high in silica and low in nutrients and slow to decay producing a thick thatch



# Medusahead, Goatgrass & Yellow Starthistle Biology

- Winter annuals
  - Majority germinates with first fall rains
  - Can also germinate through spring
- Initial growth is focused on root development
  - More competitive than other annuals
  - Stays green longer
- Flowers, set seeds and dies in summer



# Reproduction and Establishment

Annuals (plants only live for 1 year)

Seed dispersal

- Falling to ground
- Animals
- Contaminated feed
- Clothing/equipment







# Burning

## Late spring – early summer burn

- Prevent seed production
- Timing: before viable seeds are produced (late April – early June)
  - Early flowering
- Need adequate dry fuel to carry fire
  - If adequate fuel isn't present – patchy burn...poor control
- If fire is late, seeds that have dropped are protected on soil surface

# Burning

- Timed after the annual grasses have died and before late season weeds have flowered.



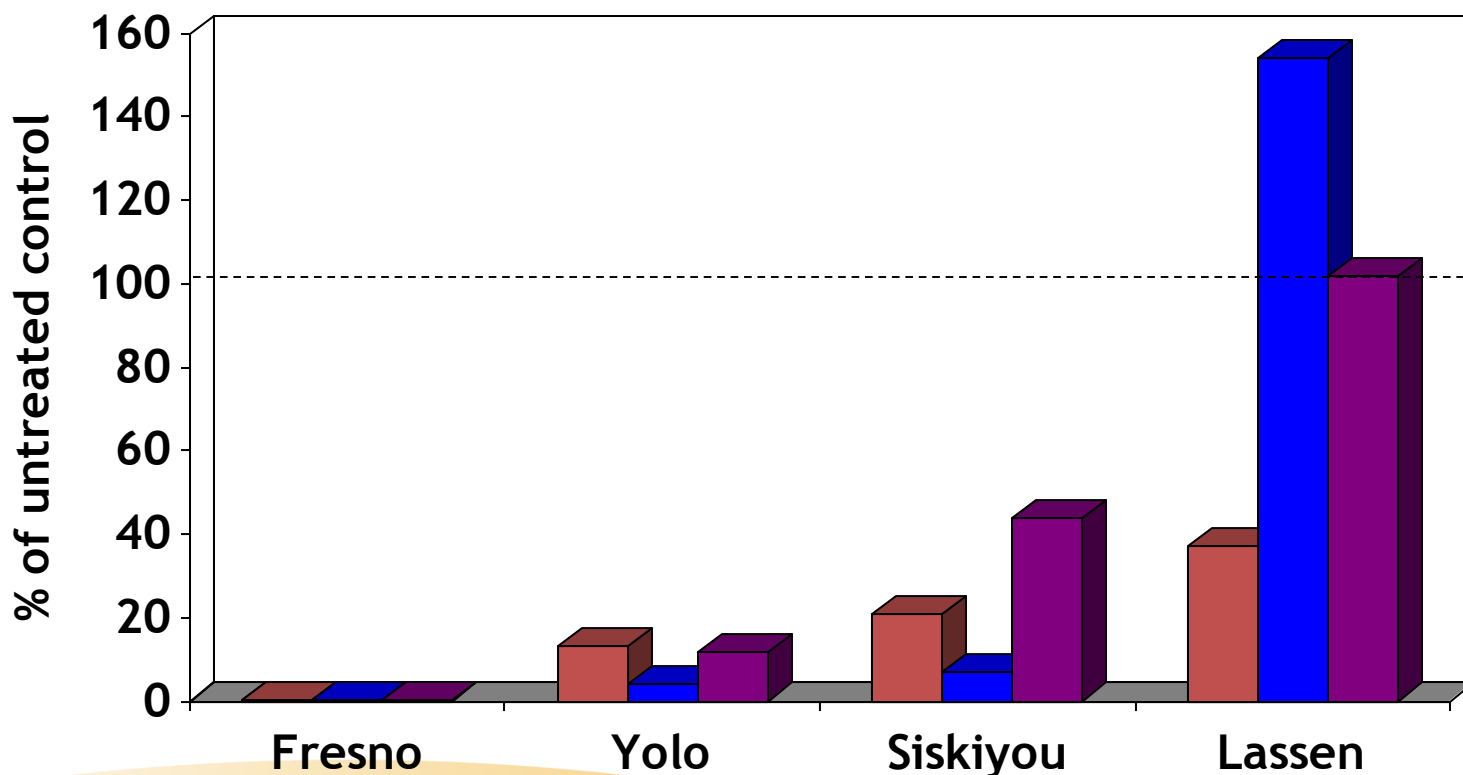
# Burning

## Fall burn

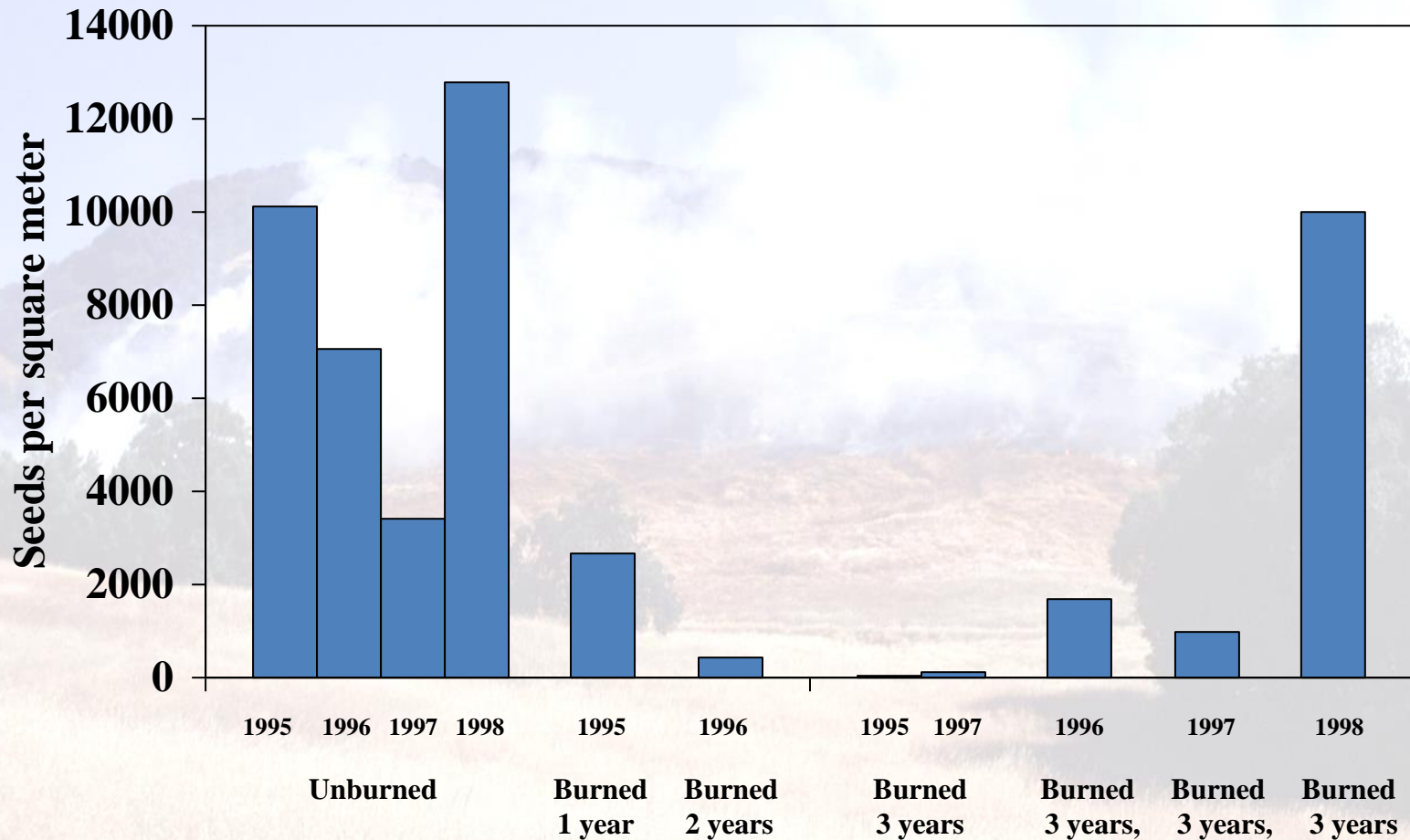
- Kill newly germinated seedlings
- Timing: during a dry period after fall green-up
- Need to have adequate dry fuel
  - If adequate fuel isn't present – patchy burn...poor control
- Very short treatment window

# Burning for medusahead control in four counties

■ After 1 yr burn ■ After 2 yrs burn ■ 1 yr after last treatment



# Yellow starthistle seedbank recovery



# Burning – Other Considerations

- Burning leaves bare ground
- Burning releases a lot of nutrients on the site
- Reseeding is often required
- Can be difficult to burn two years in a row
- Bgg and YST are released after a burn – must follow up following year with another control strategy

Questions?

# *Solutions for California*

PRACTICAL | CONNECTED | TRUSTED



**University of California**  
Agriculture and Natural Resources