

# Non-Chemical Options for Weed Control



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# Roadmap

- Why non-chemical?
- Overview of tools
- Resources
- WeedCUT demonstration



# Why Non-chemical?

- IPM principles
- Health, legal, policy, or environmental reasons
- Herbicide resistance
- Efficacy, cost



# Overview of Tools

- WeedCUT development
  - Statewide effort



Methods for Managing Weeds in Wildlands

## Weed Control User Tool (WeedCUT)

# Non-Chemical Weed Control



Biological Control



Burning



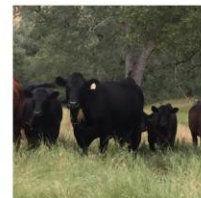
Competitive Planting



Cutting: Bladed Hand Tools



Girdling



Grazing



Grubbing: Grub Hoes



Mechanized Tillage



Cutting: Chainsaw



Cutting: Pruners, Loppers, Shears, and Hand Saws



Cutting: String Trimmers / Brush Cutters



Flaming



Mowing / Cutting with Larger Equipment



Mulching



Scraping: Scuffle Hoes



Severing Roots



Solarizing



Steaming



Stump Grinding



Tarpping



Whole Plant Removal: Hand / Hand Tools



Whole Plant Removal with Large Equipment

# Biological Control



# Burning



# Competitive Planting



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# Cutting: Bladed Hand Tools



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# Cutting: Chainsaw



# Cutting: Pruners, Loppers, Shears, Hand Saws



# Cutting: String Trimmer, Brush Cutter



# Flaming



# Girdling



# Grazing



# Grubbing: Grub Hoe



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# Mechanized Tillage



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# Mowing (large equipment)



# Mulching



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# Scraping: Scuffle Hoe



# Severing Roots



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# Solarizing and Tarping



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# Steaming



# Stump Grinding



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# Whole Plant Removal: Hand (tools)



# Whole Plant Removal: Large Equipment



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# What non-chemical tools can do

- Reduce cover, continuity and spread of
  - Grasses
  - Forbs
  - Shrubs
  - Trees
- Enhance other treatments



# What non-chemical tools **can't** do

Eradicate weeds permanently

Equally treat all weeds

\*neither can herbicide!



# Considerations

Shepherd and working dog photos  
© Shepherdess Land and Livestock



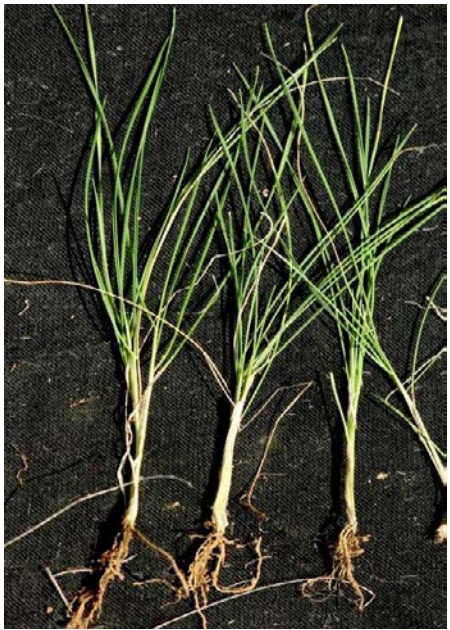
- Infrastructure
- Terrain
- Target species
- Other land uses



# For any tool...

- Timing is critical!
  - Prevent seed production/vegetative growth
  - Deplete existing seed bank/reduce vigor
  - Avoid non-target impact
  - Prevent (re)introduction

# Example: Medusahead Growth Stages



V2



V3

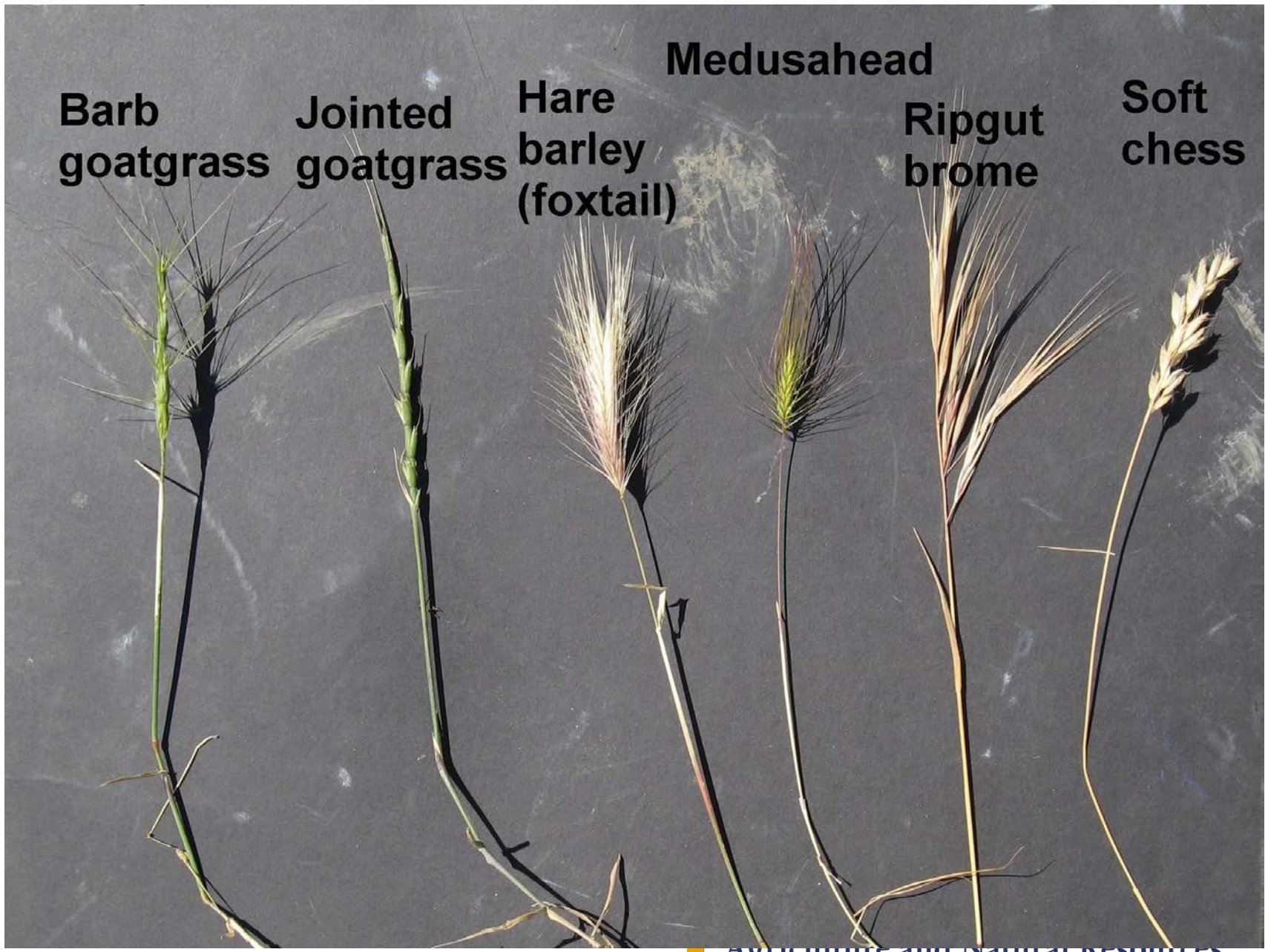


R4



R5

Photos: Emilio Laca



**Barb  
goatgrass**

**Jointed  
goatgrass**

**Hare  
barley  
(foxtail)**

**Medusahead**

**Ripgut  
brome**

**Soft  
chess**

# Yellow starthistle example

Rosette stage



Bolting stage



# Resources

- WeedCUT site <https://weedcut.ipm.ucanr.edu/>
- Weed Control in Natural Areas in the Western United States (book): <https://www.cal-ipc.org/product/weed-control-in-natural-areas-in-the-western-united-states/>
- Manage Weeds on Your Farm: A guide to ecological strategies (free PDF): <https://www.sare.org/wp-content/uploads/Manage-Weeds-on-Your-Farm.pdf>





Methods for Managing Weeds in Wildlands

# Weed Control User Tool (WeedCUT)

**Demonstration time!**