

Session 34, abstract number 5321

The role of livestock and precision grazing for controlling noxious weeds invading annual rangelands.

Correspondence: [mpdoran@ucdavis.edu](mailto:mpdoran@ucdavis.edu)

## The role of livestock and precision grazing for controlling noxious weeds invading annual rangelands.

*Presented by Morgan Doran  
University of California Cooperative Extension*

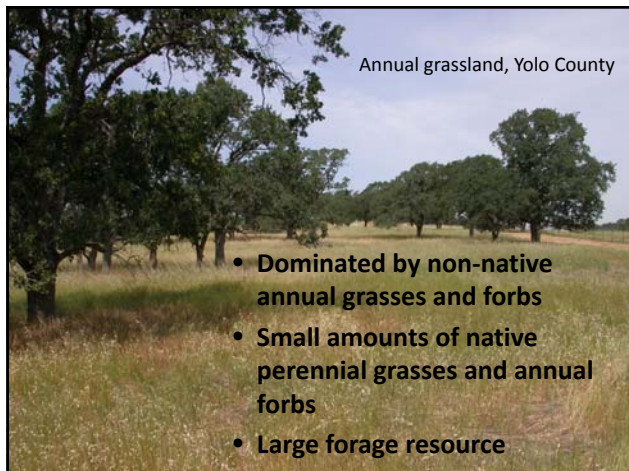
*Laca, E.A., Becchetti, T.A., Cherr, C., Davy, J., DiTomaso, J.M.,  
Doran, M.P., George, M.R., Harper, J.M., Kyser, G.B., and Larson,  
S.R.*

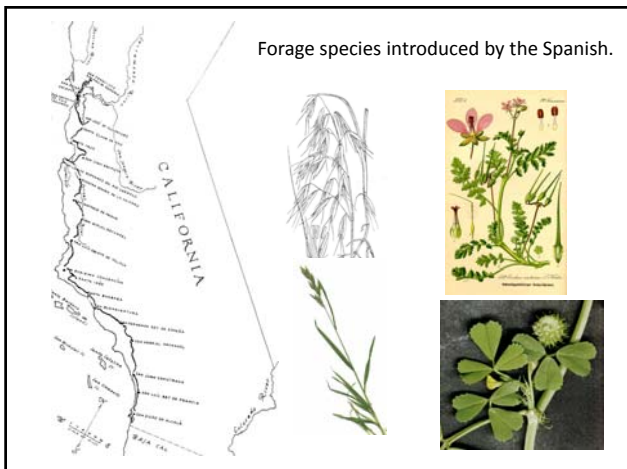
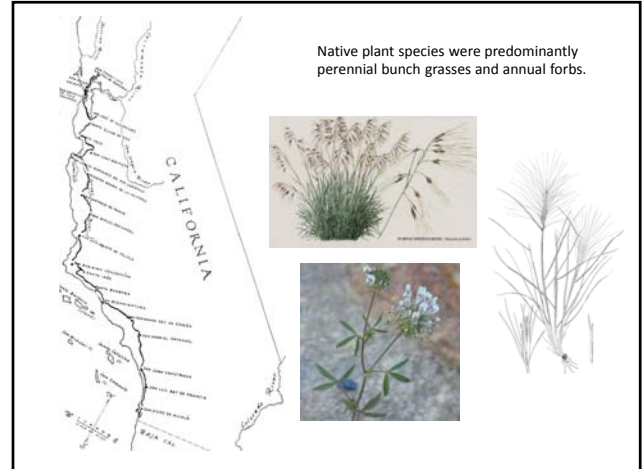
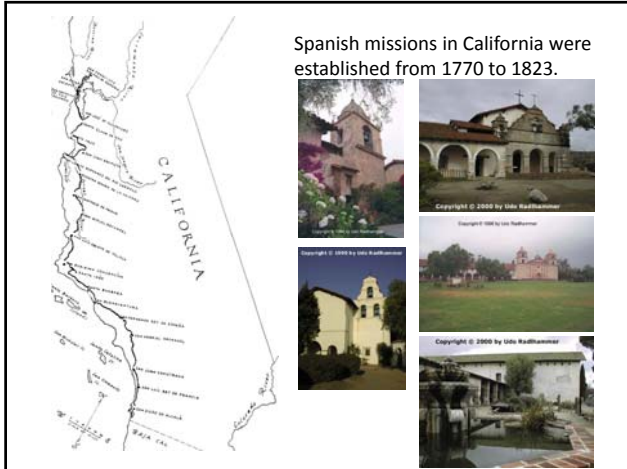
### California, U.S.A.

Weislander (1945)



Rangelands = 26 million hectares





Dominant herbaceous species		
Common Name	Latin Binomial	Origin
Wild oats	<i>Avena fatua</i>	Eurasia
Soft Brome	<i>Bromus hordeaceus</i>	Eurasia
Filaree	<i>Erodium spp.</i>	Mediterranean basin
Rose clover	<i>Trifolium hirtum</i>	Eurasia
Subterranean clover	<i>Trifolium subterranean</i>	Europe
Medusahead	<i>Taeniatherum caput-medusae</i>	Eurasia
Barbed goatgrass	<i>Aegilops triuncialis</i>	Eurasia
Yellow starthistle	<i>Centaurea solstitialis</i>	Eurasia

## Dominant herbaceous species

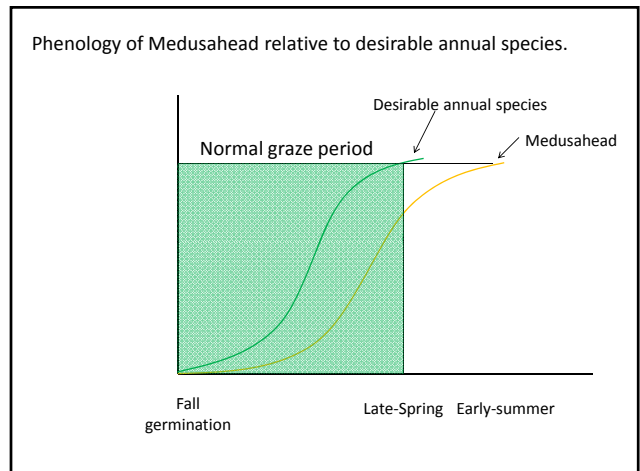
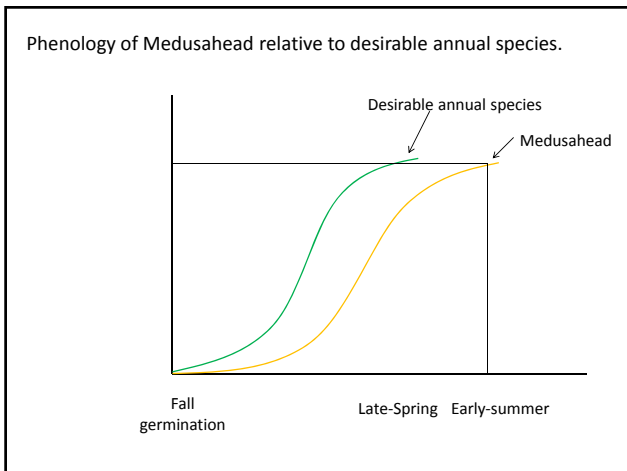
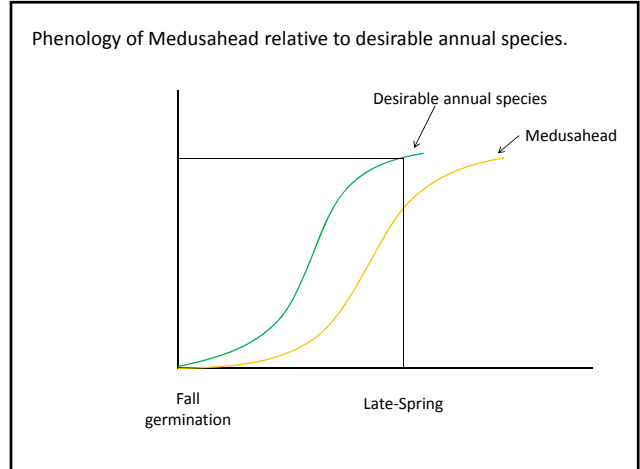
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*Taeniatherum caput-medusae* - medusahead



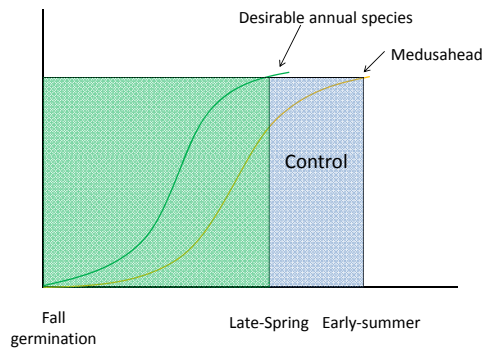
## Key Characteristics of Medusahead

- Delayed phenology & seed shatter
- Very unpalatable to livestock after awns emerge (3x silica compared to other grass)
- Can accumulate dense thatch
- Little ability to grow back after late defoliation

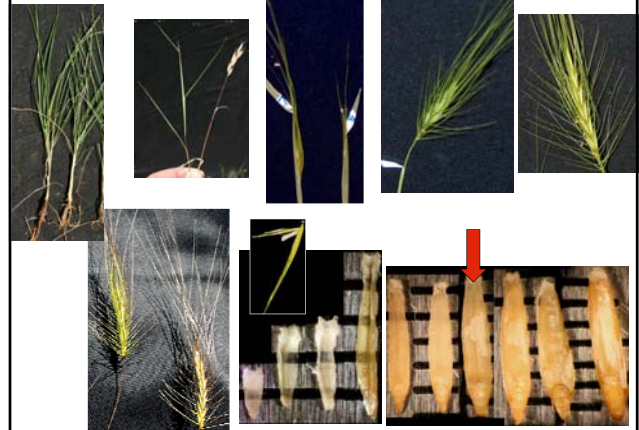




Phenology of Medusahead relative to desirable annual species.



Medusahead Phenology

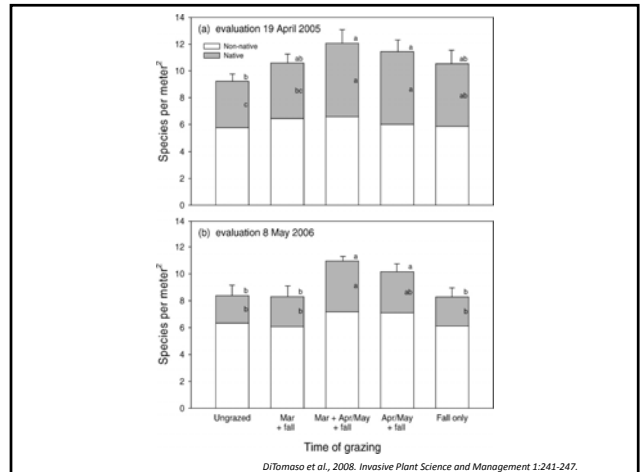
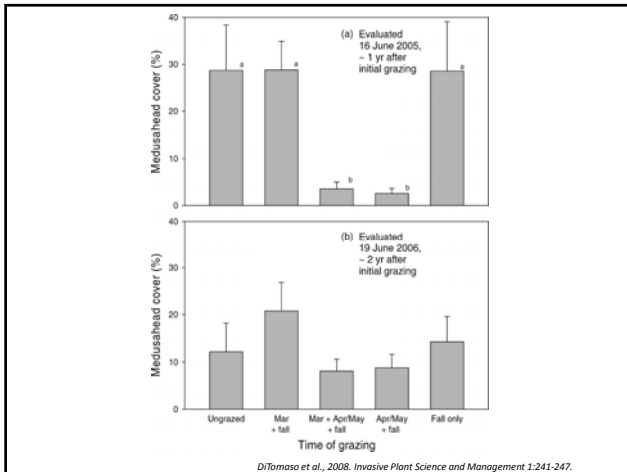


First grazing trial, 2004-2005



April 2004: post-grazing





### Adjusting stocking density and duration with a static stocking rate.

# of Sheep (ewes)	# of Cattle (cows)	Area (hectares)	Time (days)	Stocking rate (AUD/hectare)
10	2	0.010	1	200
1000	200	1	1	200
250	50	1	4	200
125	25	1	8	200
100	20	1	10	200
71.4	14.3	1	14	200

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Diminishing Returns?

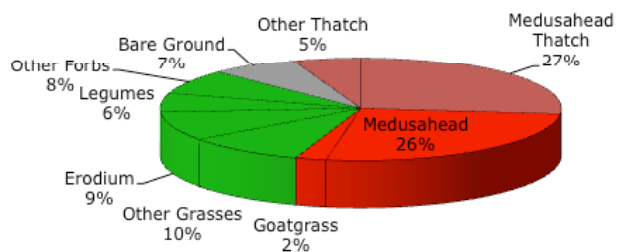
## Second grazing trial, 2007-2008



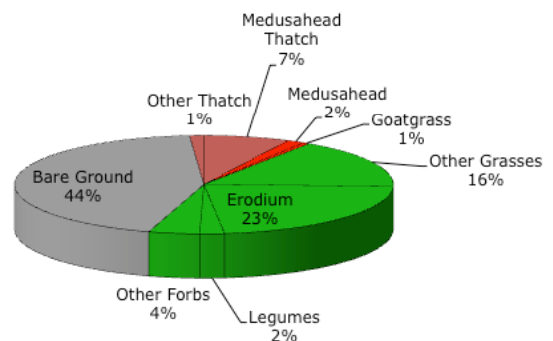
## High Intensity Grazing Methods

- Four targeted forage utilization rates
  - 50% utilization
  - 60% utilization
  - 70% utilization
  - 80% utilization
- 2 targeted grazing durations
  - 7 days
  - 14 days
- Animal Density
  - 20 – 70 sheep per hectare

## Absolute Coverage – March 2007 Pre-Grazing



## Absolute Coverage – March 2008 One Year Post-Grazing



## Conclusions

- Medusahead can be controlled by grazing.
- Control depends on precise timing based on medusahead phenology.
- Effective control requires long term planning and incorporation of treatments into the regular management of the ranch.
- Also requires a shift from traditional grazing practices (time, density, duration).
- Livestock can provide ecological services.



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Natural Resources**