


Ecology and Management of Medusahead



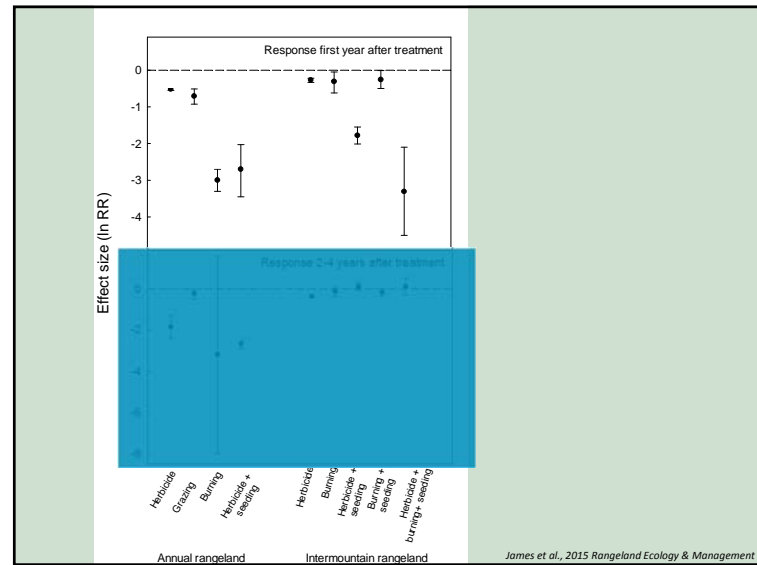
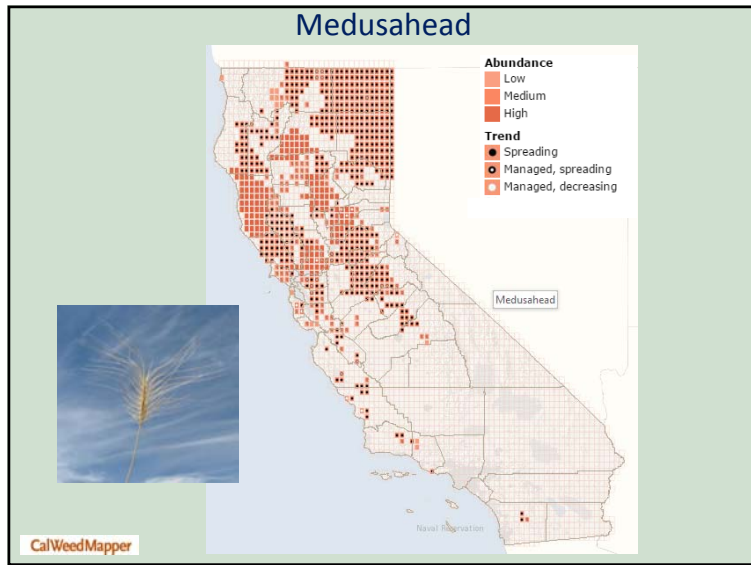
Elise S. Gornish, University of California, Cooperative Extension Specialist in Restoration




Taeniatherum caput-medusae (Medusahead)



- Invaded 2.4 million hectares
- Spreads at a rate of 12% per year
- Can grow to 2,000 plants per square ft
- Livestock grazing losses can reach \$20/acre



What factors might play a role in mediating medusahead control?



Methods

Oak woodland



Open grassland



habitat

Methods

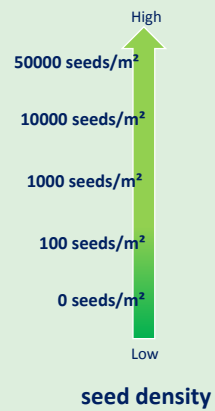
Oak woodland



Open grassland



habitat



seed density

Methods

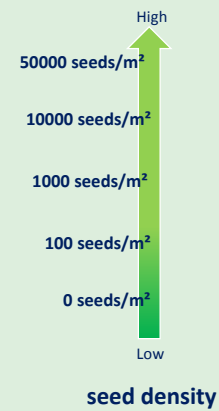
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habitat

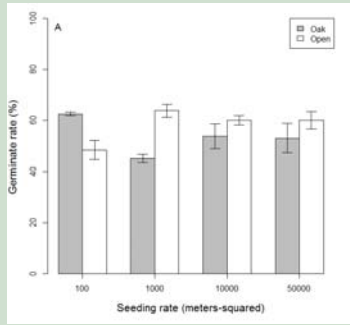


seed density



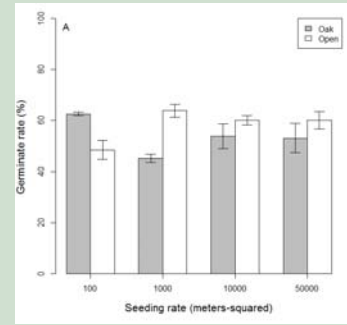
management

Effects of habitat on medusahead



Gornish & James 2016, Plant Ecology

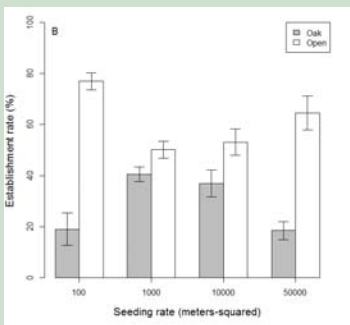
Effects of habitat on medusahead



No habitat effect on germination rate

Gornish & James 2016, Plant Ecology

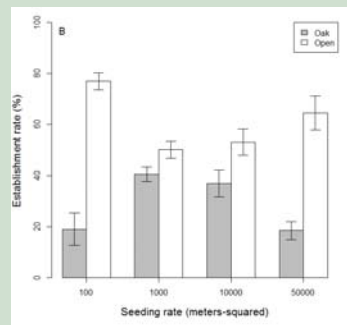
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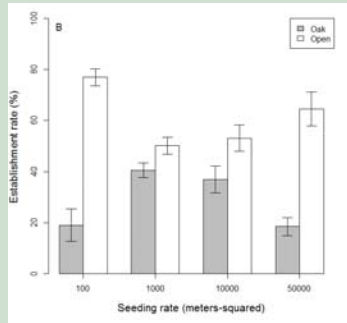


No habitat effect on germination rate

Establishment higher in open grassland

Gornish & James 2016, Plant Ecology

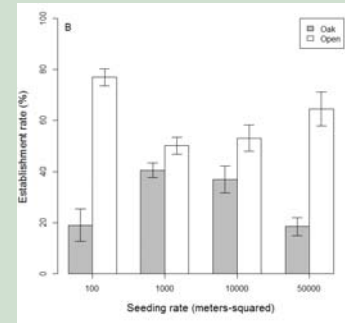
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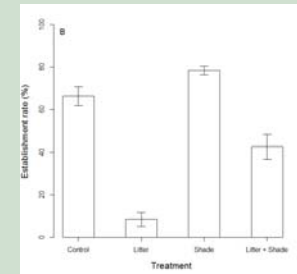
No habitat effect on germination rate
 Establishment higher in open grassland
Due to litter?

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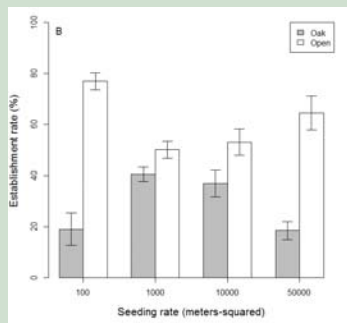


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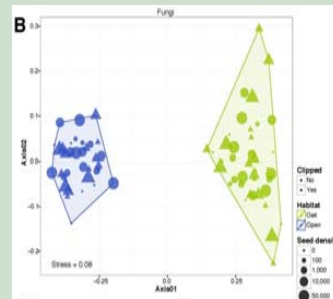


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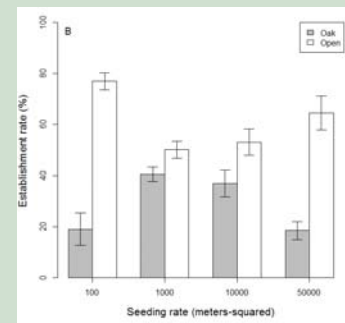


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Due to the soil microbiome?



Gornish et al. 2016, PLoS ONE

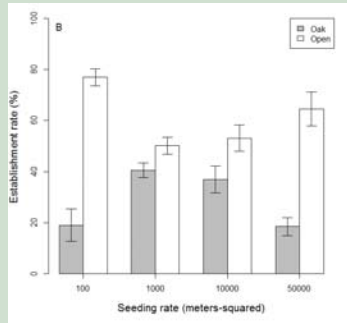
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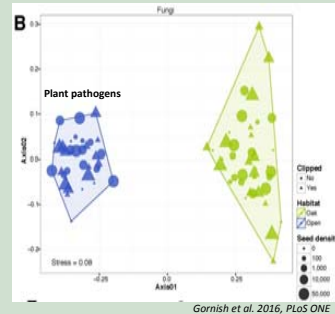
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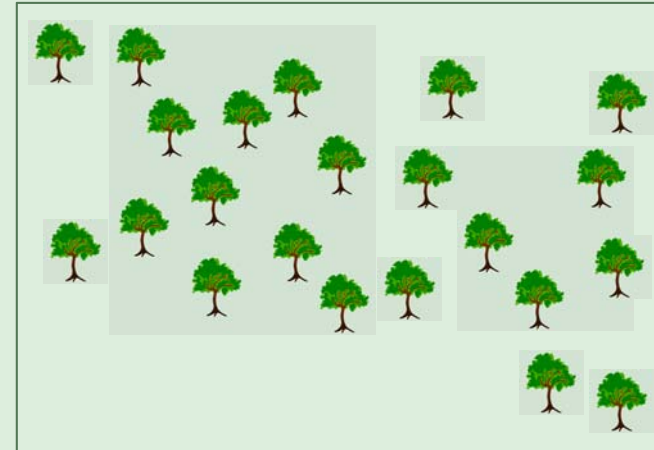


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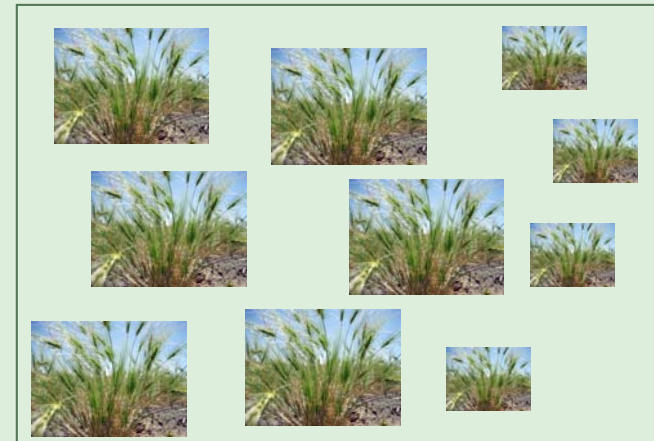
Management implications

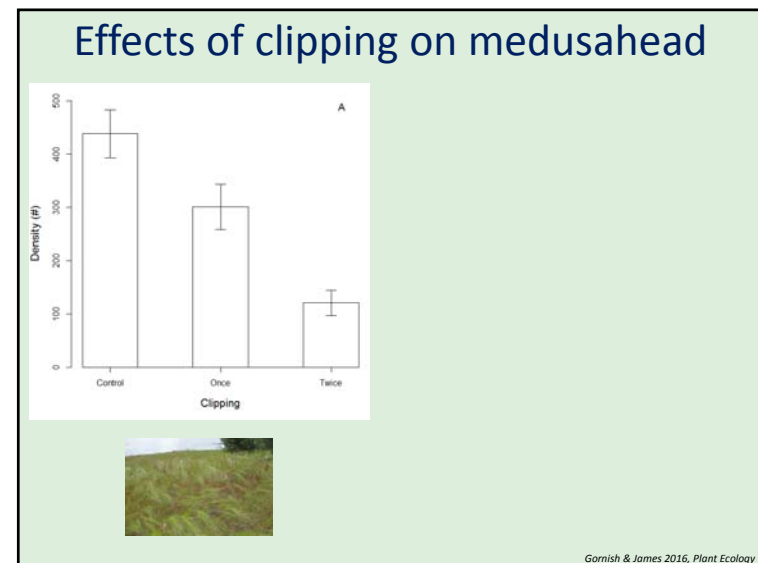
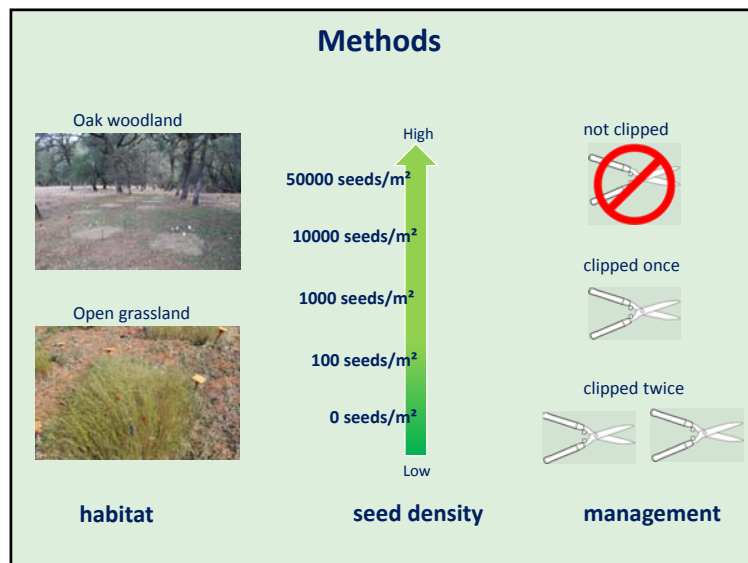
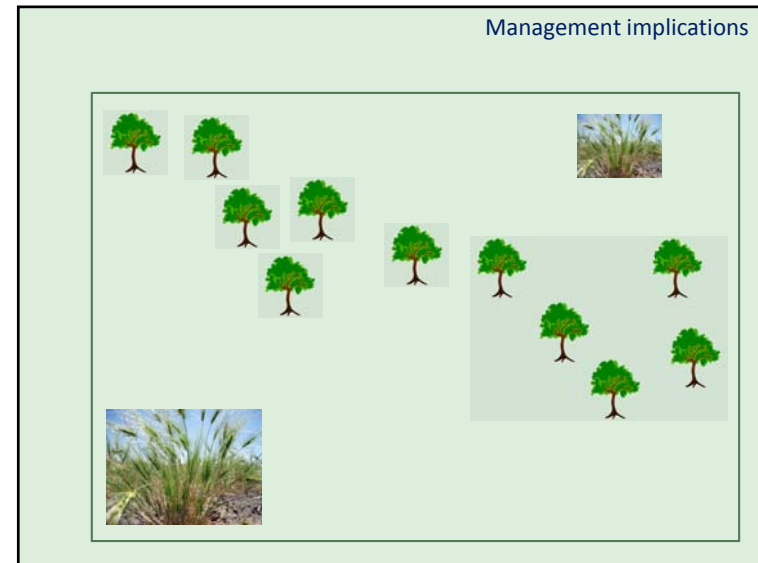
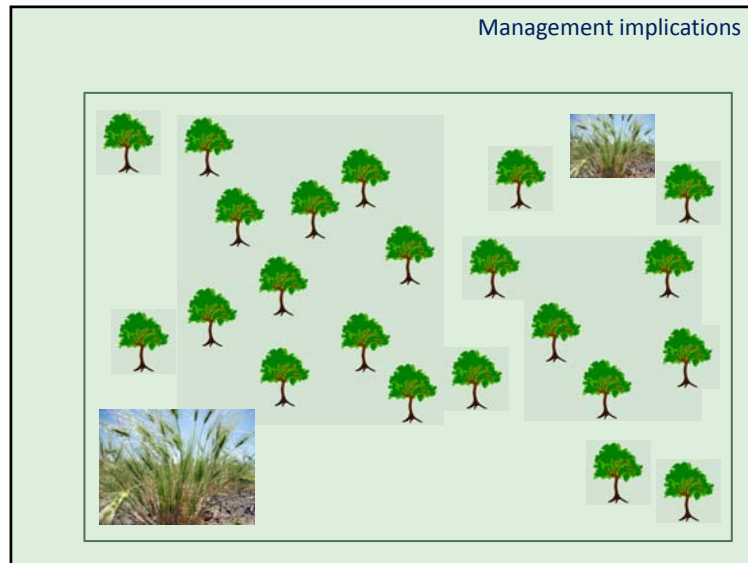


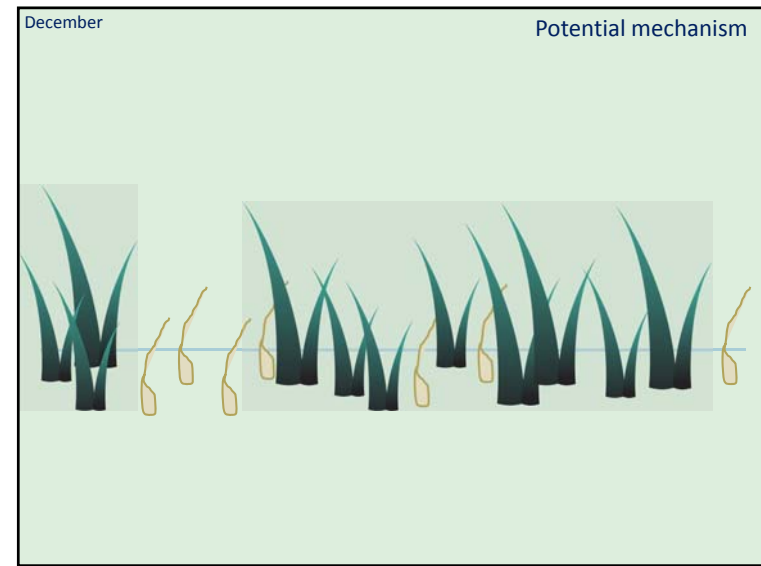
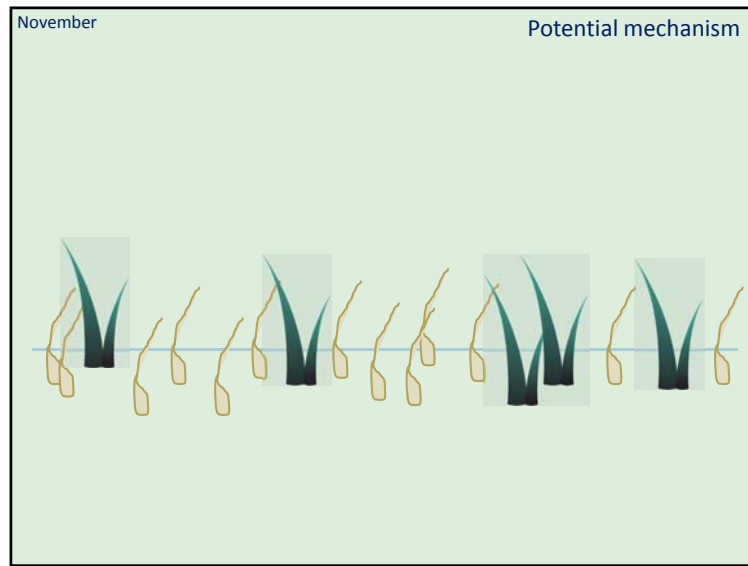
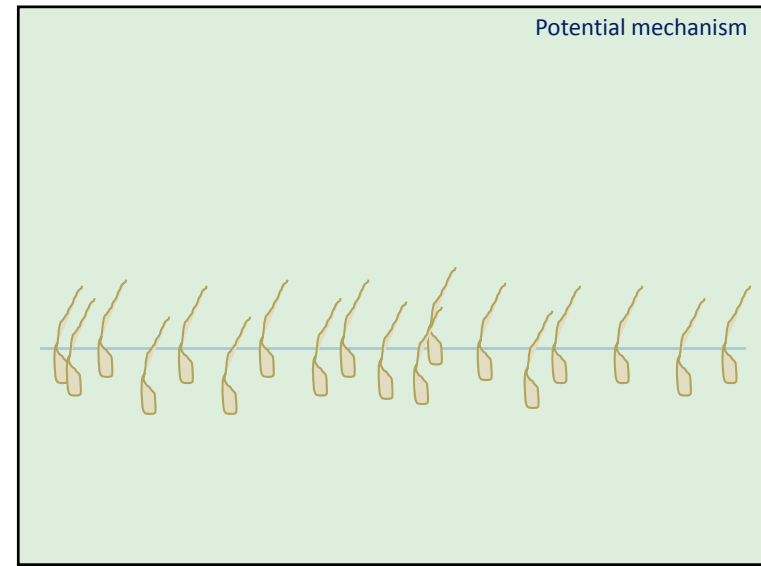
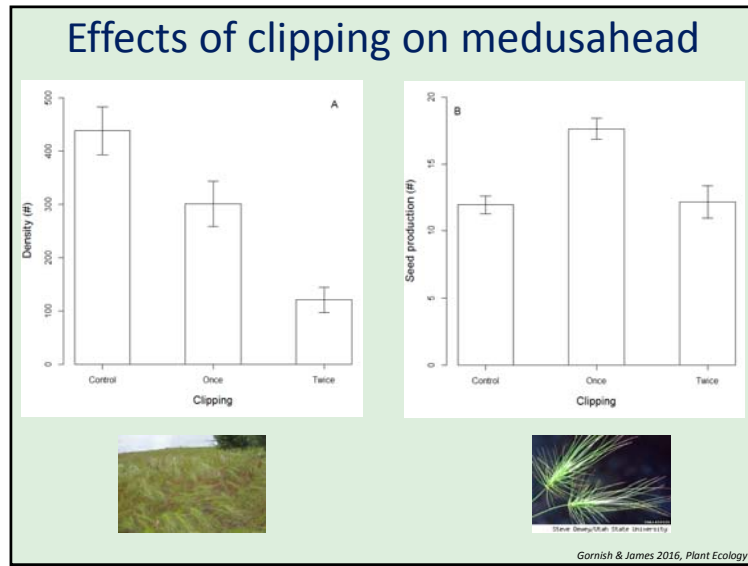
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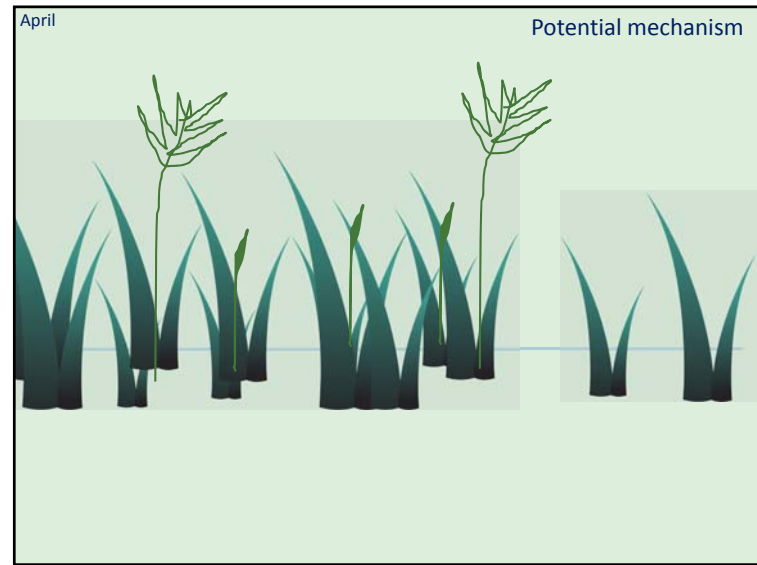
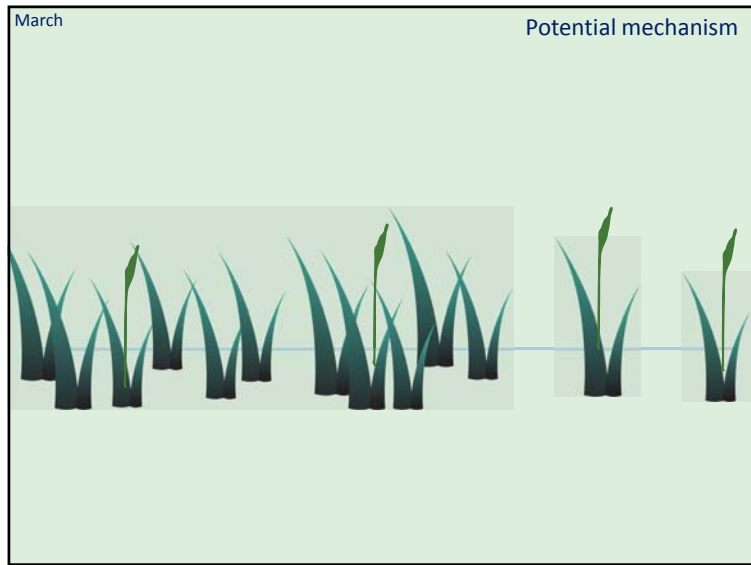
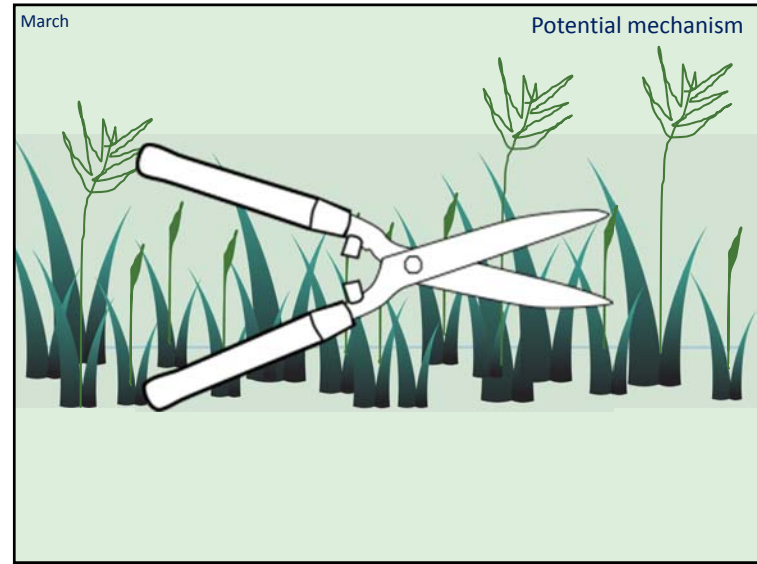
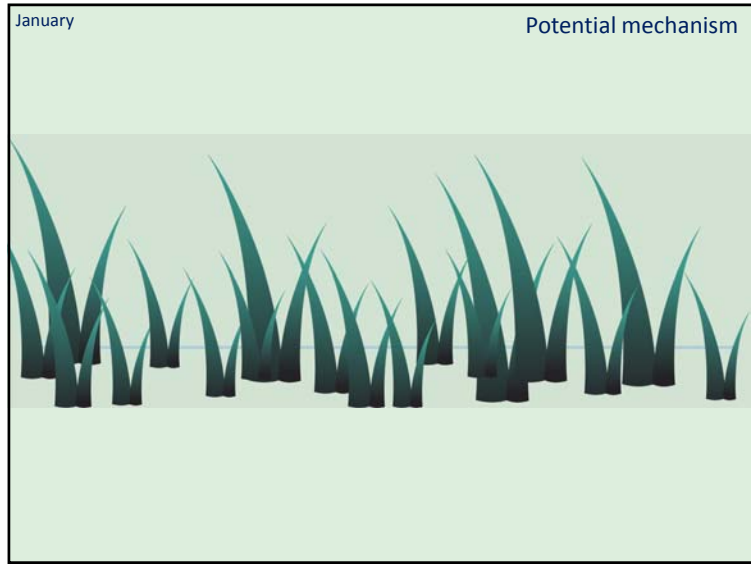


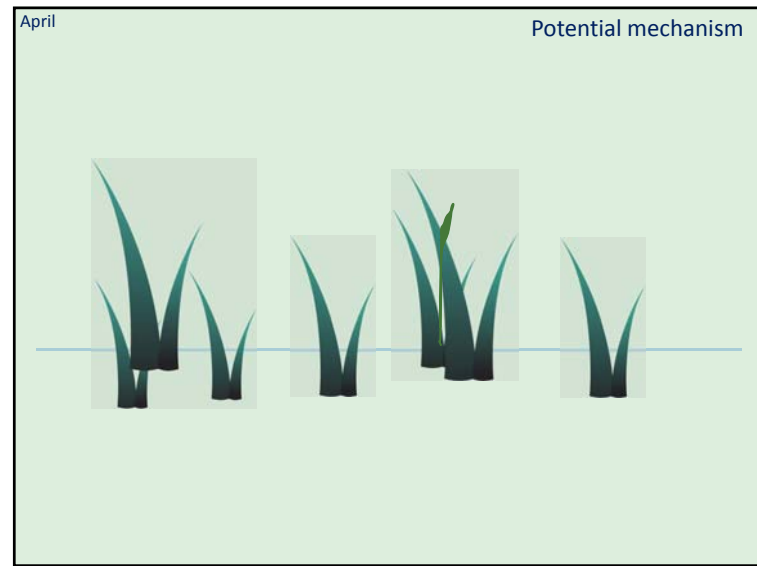
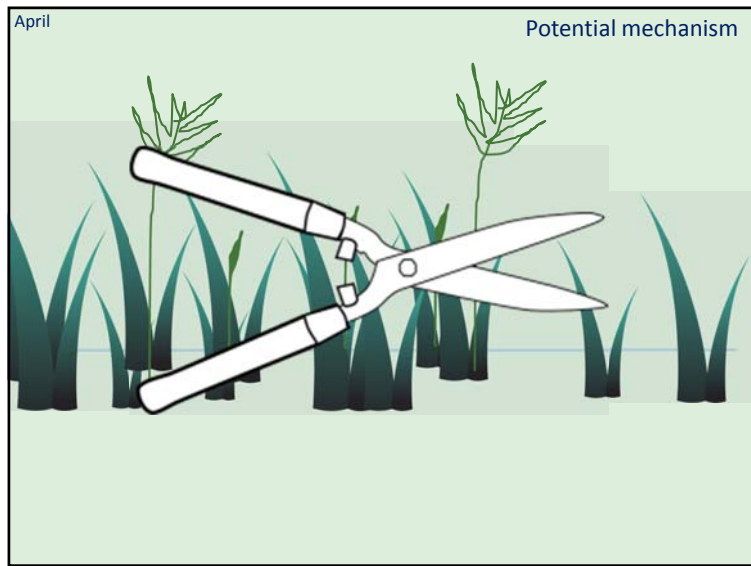
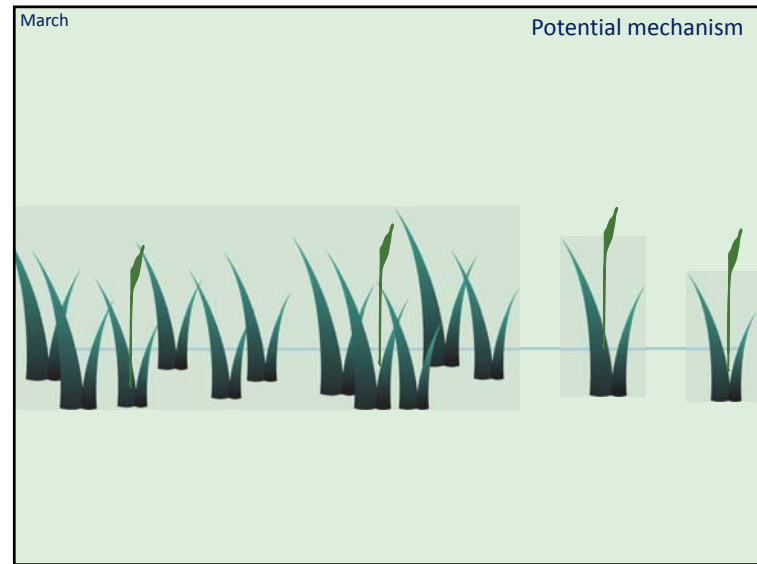
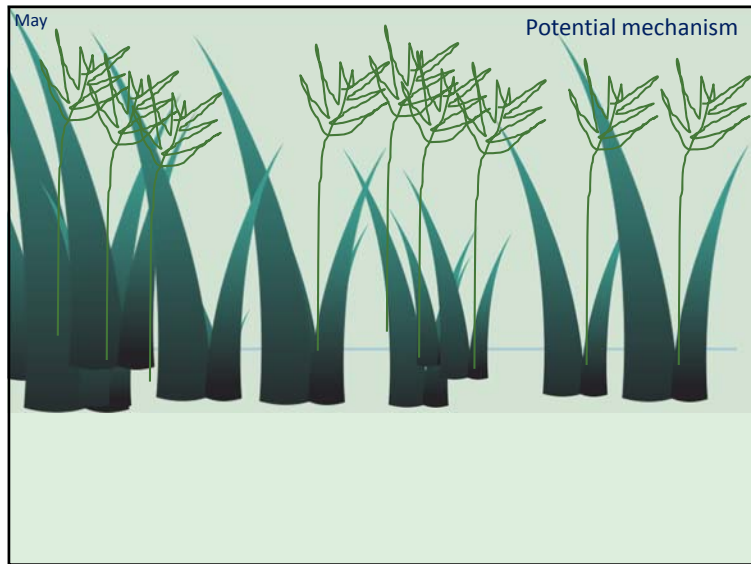
Management implications











May

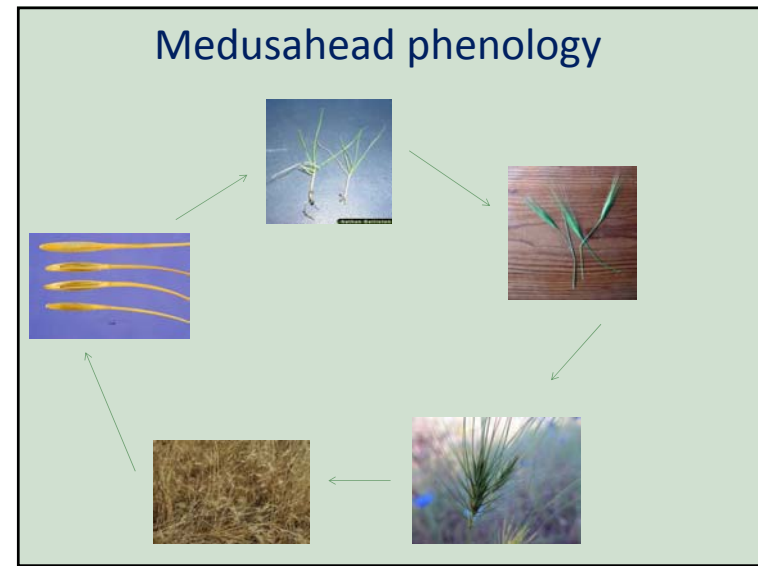
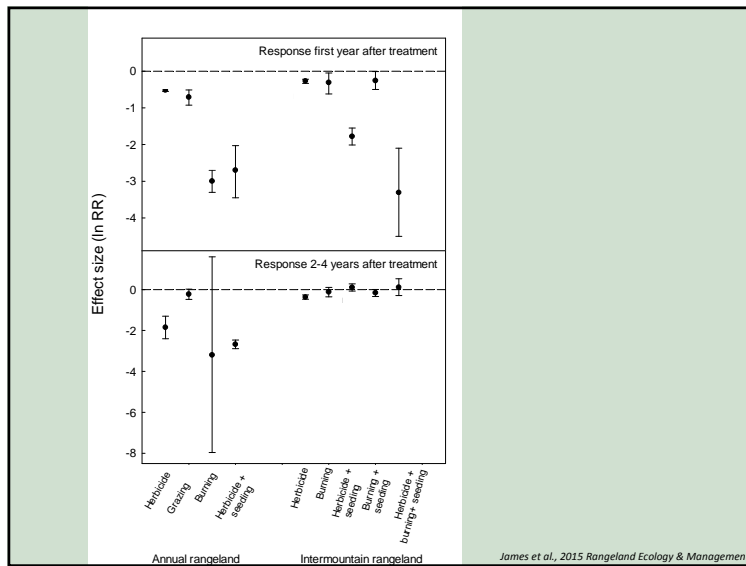
Potential mechanism

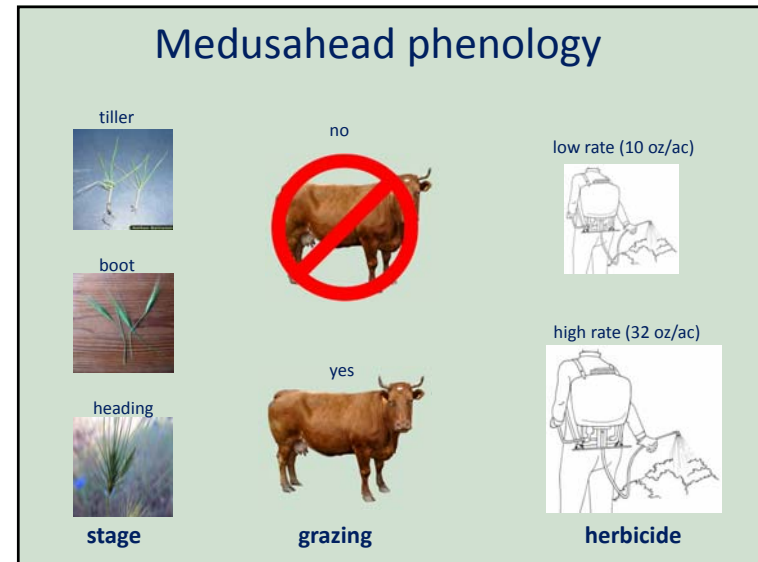
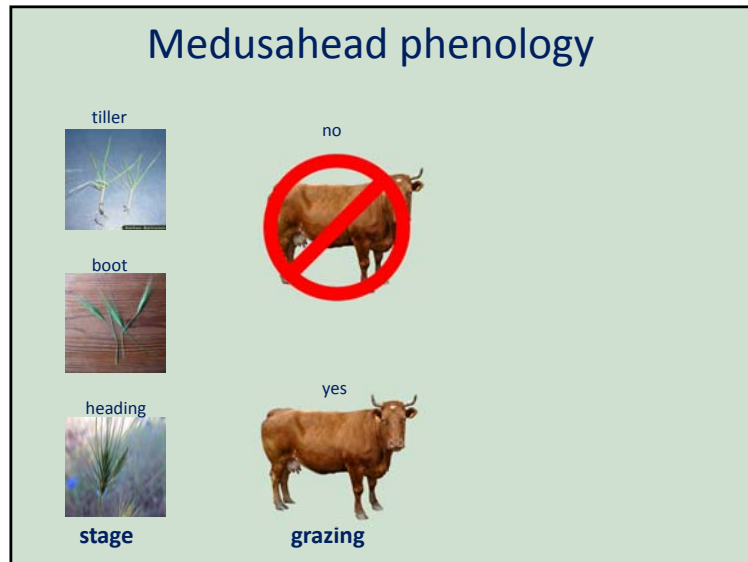
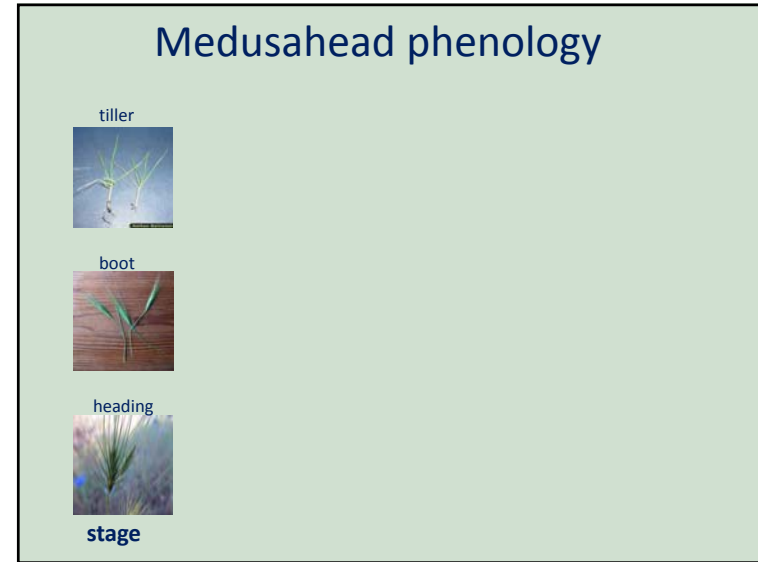
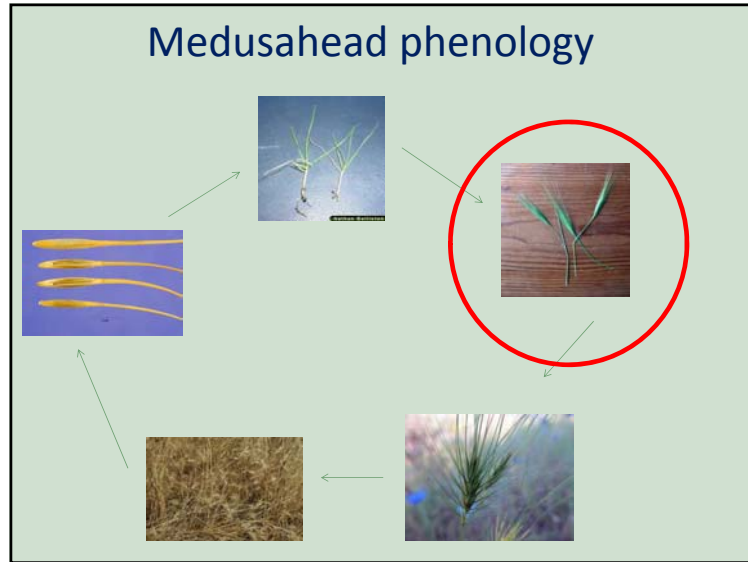
Compensation from younger cohorts limits long-term success of single effort control

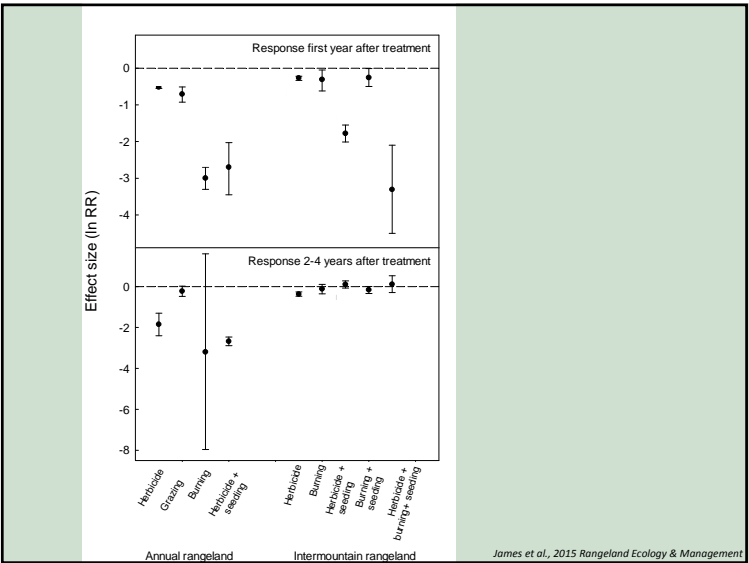
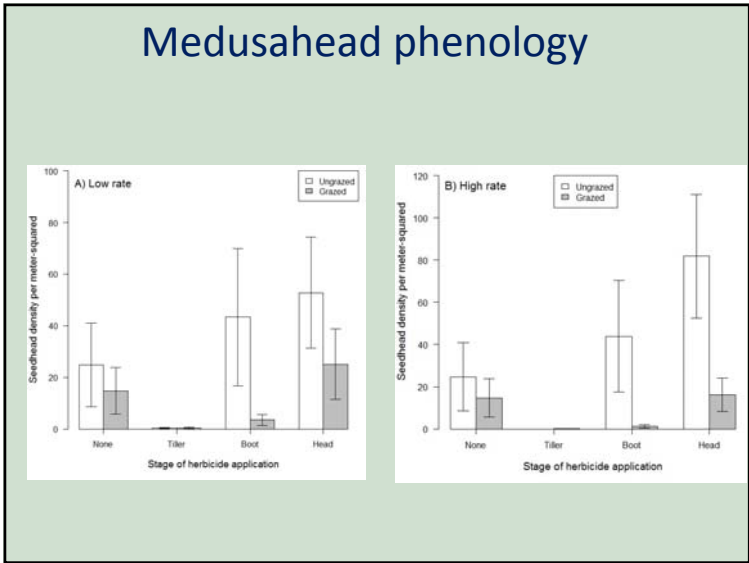
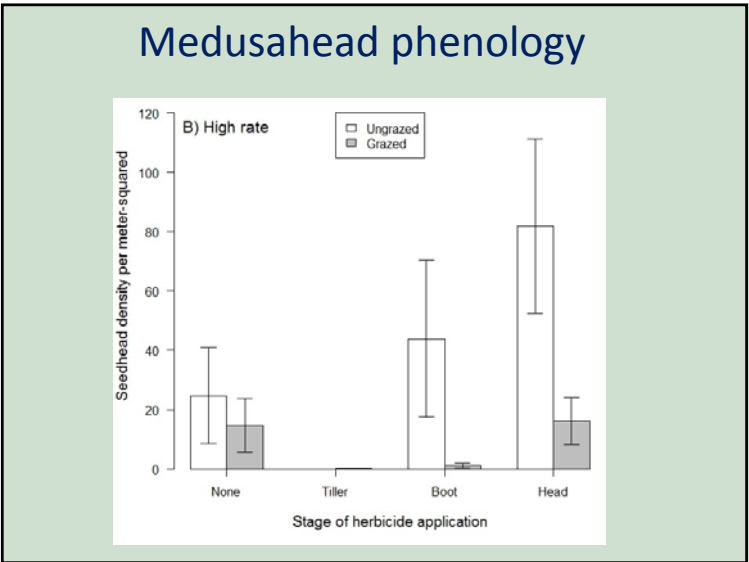
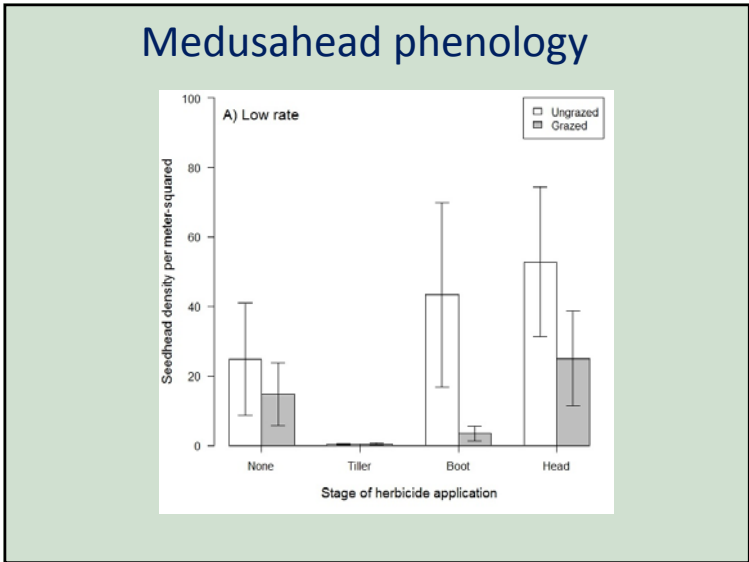
Take home

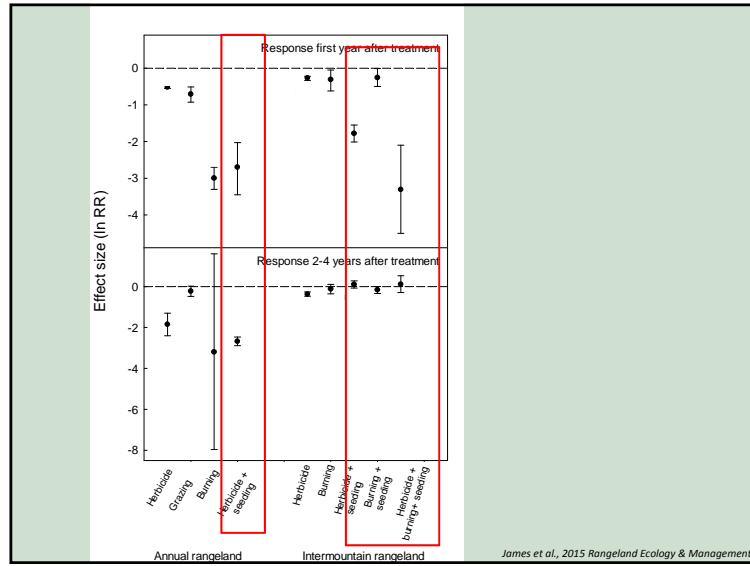
Habitat matters – manage oak corridors!

Clipping twice within a season can provide better long-term medusahead control





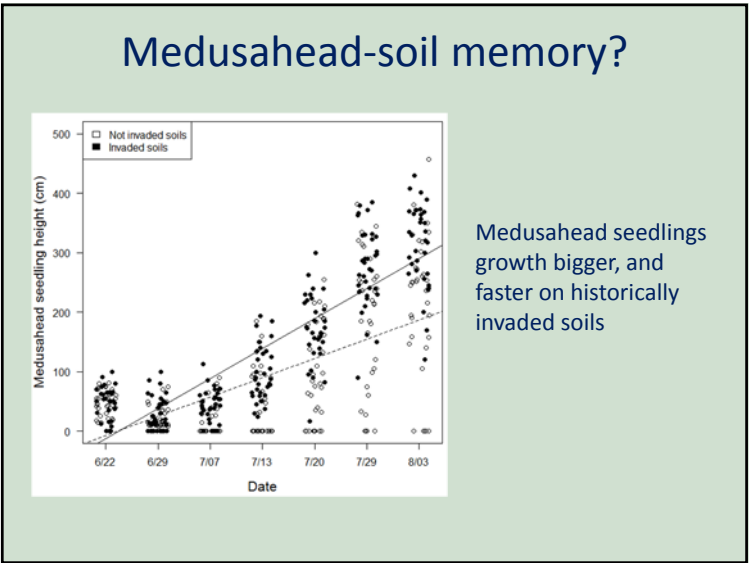
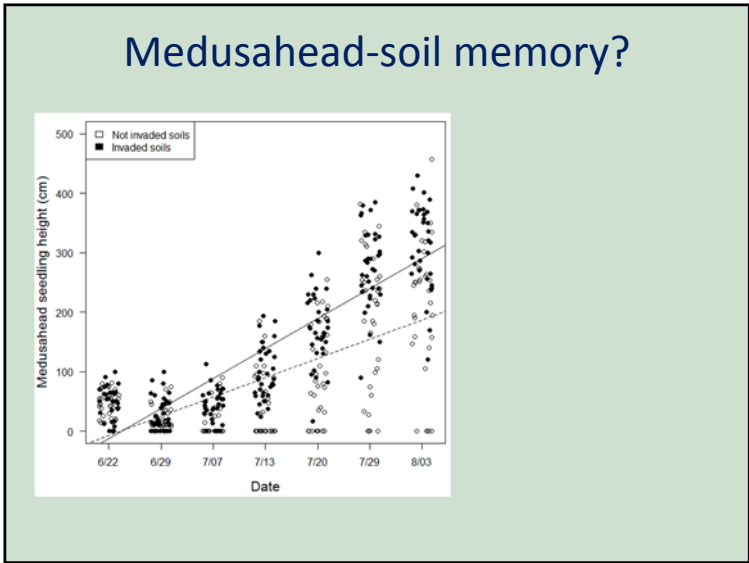
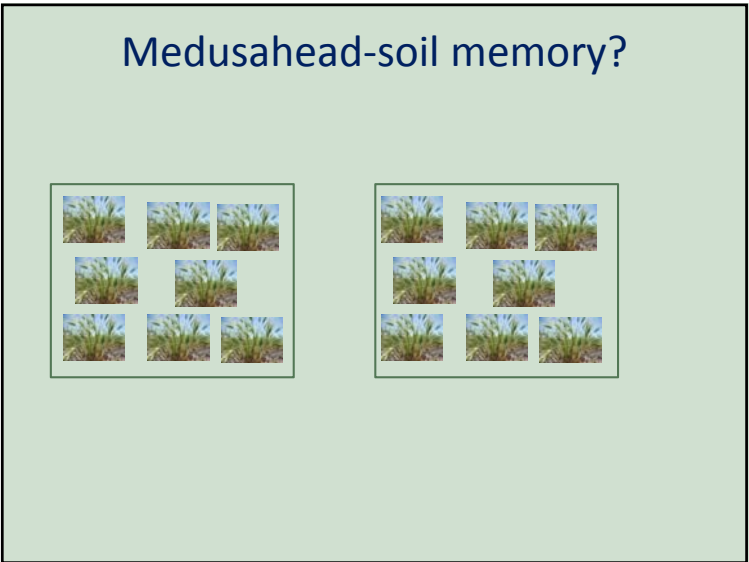
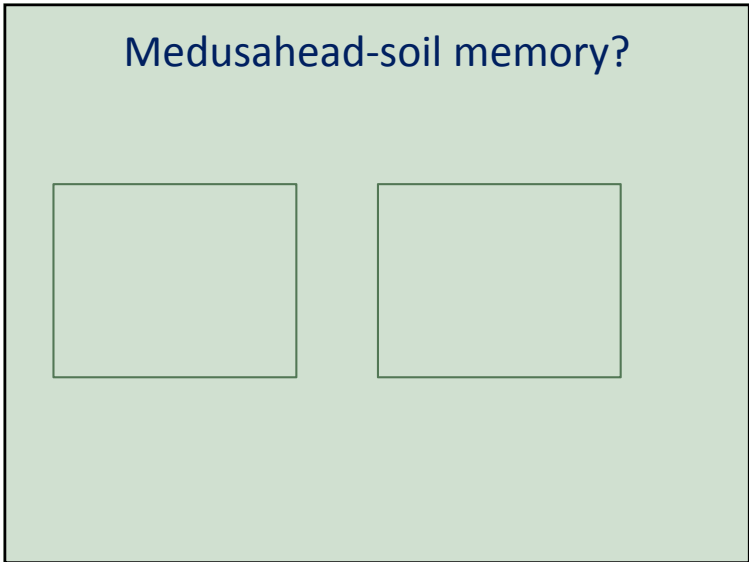


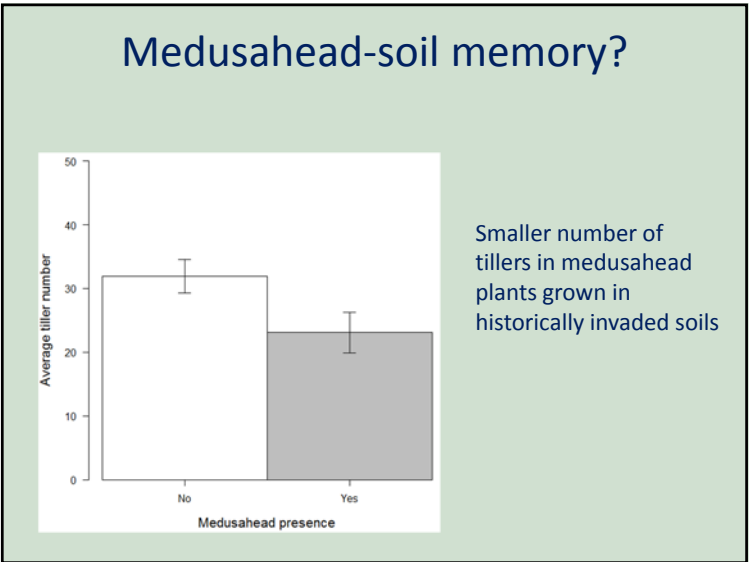
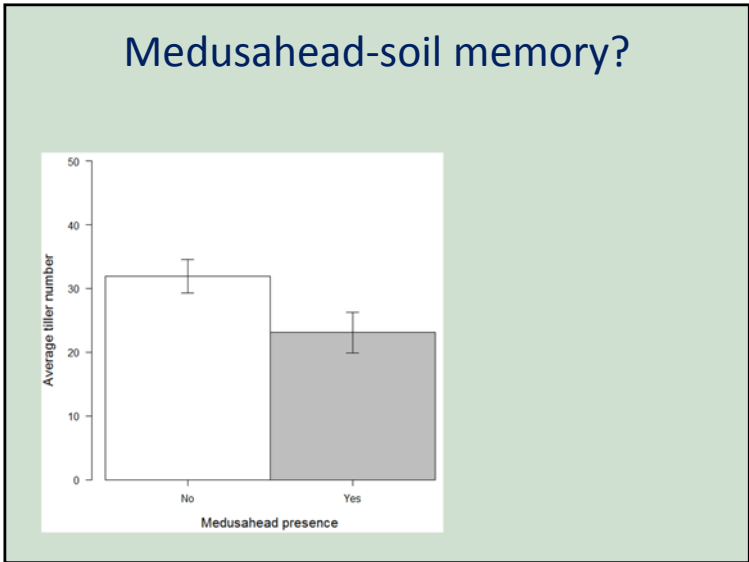


Medusahead-soil memory?

Medusahead-soil memory?



Medusahead-soil memory?





Take home

In historically invaded areas, earlier control might be needed.

Nathan Belliston Washington State University

Other items of interest

Stand-alone presentation that describes most recent ecology and management information of Medusahead

Includes hand outs

Freely available from: UC Weed RIC website
Gornish website

