

Rangeland Seeding and Ecosystem Service Restoration

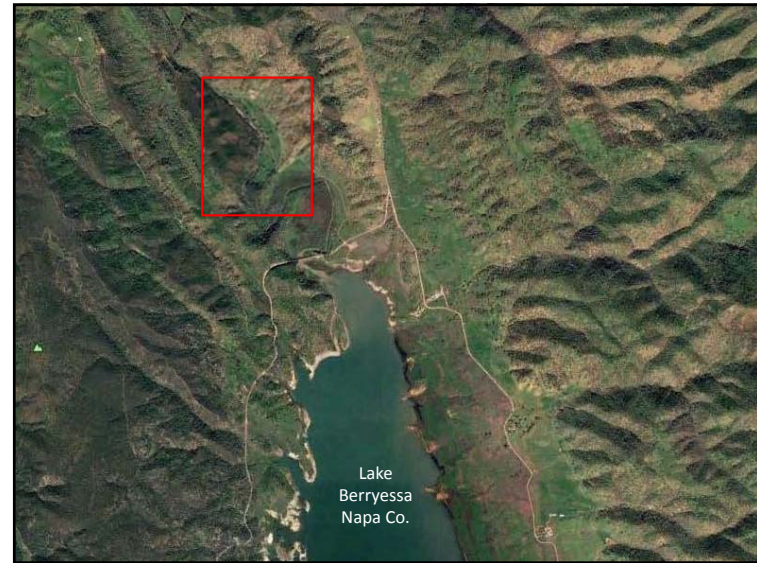
Morgan Doran
UC Cooperative Extension

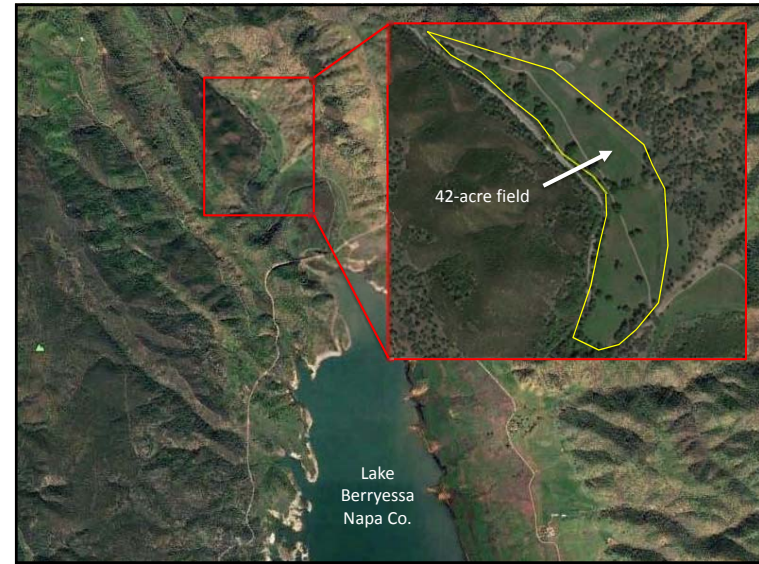
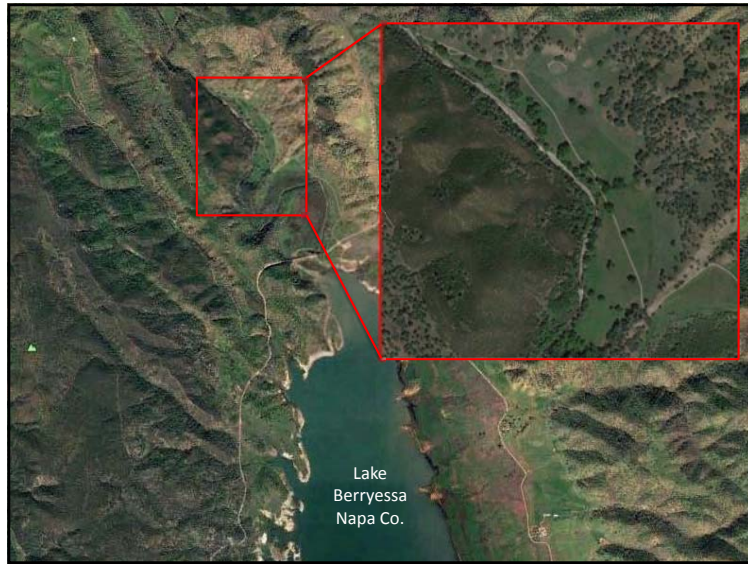
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Collaborative Team and Storyline

- George Gamble – Landowner / Producer
- Phil Blake – DC, NRCS Napa Co. (retired)
- Chip Bouril – NRCS Napa Co.
- Morgan Doran – Livestock & NR Advisor, UCCE
- Dave Dyer – NRCS PMC Director (retired)
- Leslie Roche – UCCE Specialist, UC Davis
- D.J. Eastburn – Asst. Specialist, UC Davis
- Elise Gornish – UCCE Specialist, UC Davis

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Site History

Working Cattle Ranch
– Cow-calf beef



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• **YST Infestation - 1999**
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- Site burned 2003 & 2004



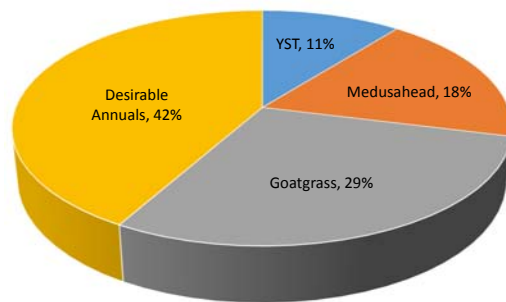
Turning project into research

Created replicated seeding trial

- **Annual seed mix**
 - Annual ryegrass + vetch
- **Native perennial mix**
 - Purple needlegrass + blue wildrye + CA onion grass + CA brome
- **Exotic perennial mix**
 - Berber orchardgrass + Harding grass
- **Native & Exotic perennial mix**
- **Seeding control**

Plots = 1.3 acres each
Drill seeded fall 2004

Cover of Invasive and Other Annual Species,
Pre-burn 2003



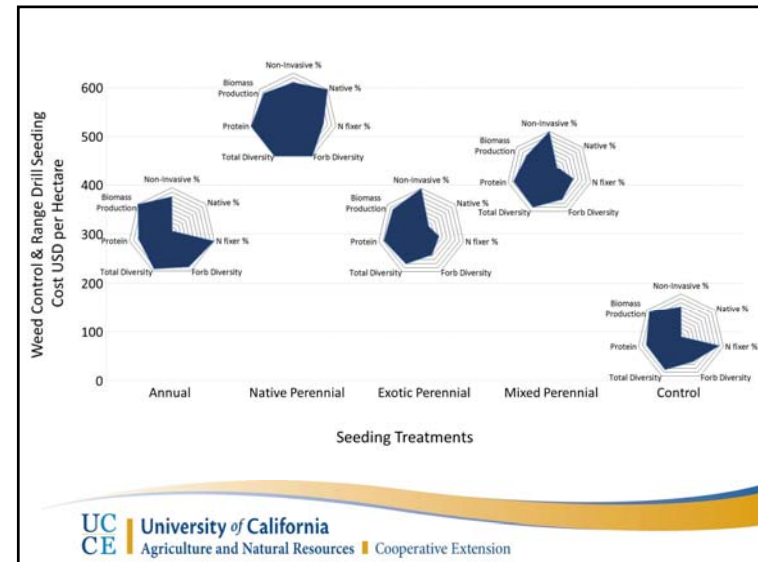
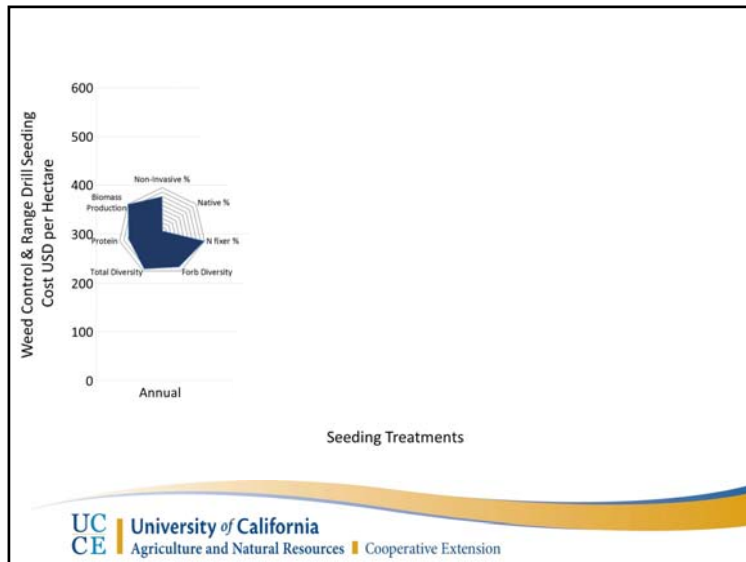
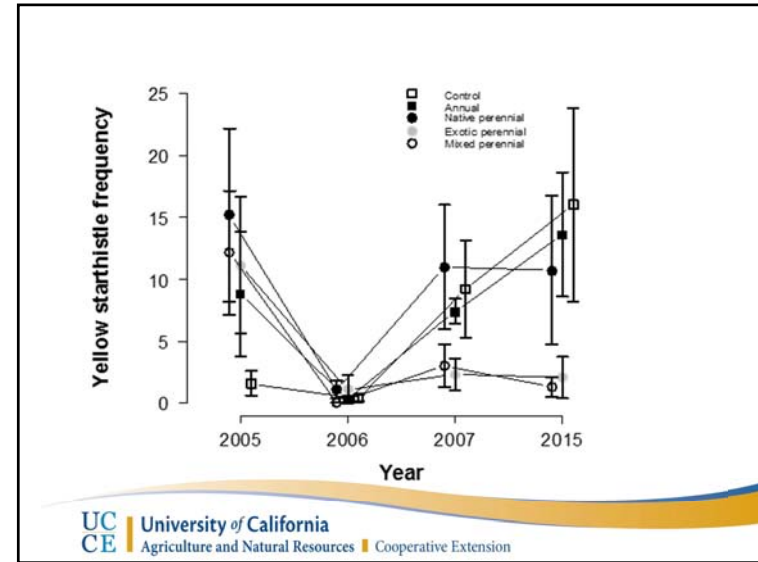
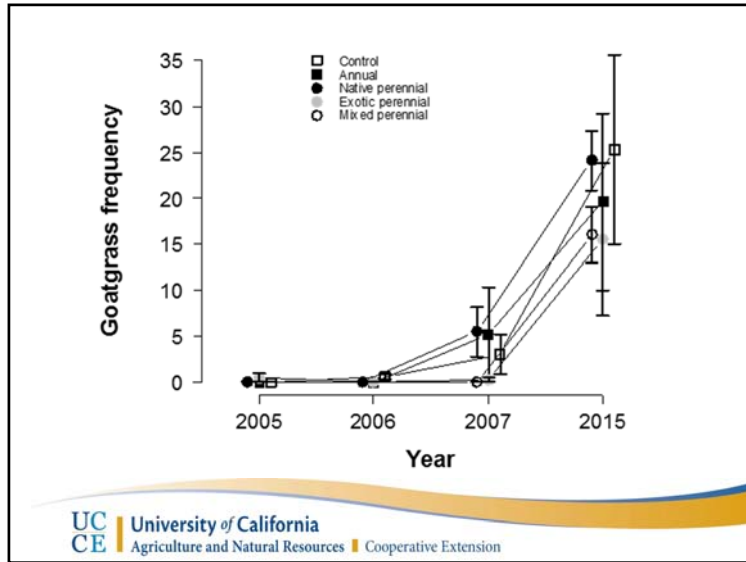
Data Collection

Line-point intercept

4 transects per plot


2005, 2006, 2007, 2015





Take Home Messages:

- Species selection
 - Ability to survive and thrive
 - Desired outcomes/services
 - Cost
- Functional traits determine resistance to invasion
- Success is site dependent
- George Gamble's perspective






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- Species selection
 - Ability to survive and thrive
 - Desired outcomes/services
 - Cost
- Functional traits determine resistance to invasion
- Success is site dependent
 - Soil
 - Aspect
 - Slope
- Weed resistance
- George Gamble's perspective

• Next Steps

- Aerial images
 - Biomass
 - Livestock utilization
- Other rangeland sites



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