Deer Density and Supplemental Feed in Deer Management: Conclusions from the Comanche-Faith Study

Vegetation responses

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Vegetation response to deer density

- Traditional ideas of vegetation change
- Plant community degradation
  - Decrease in preferred plants
  - Reduced forb species
  - Increase in unpalatable plants

Increasing deer density

- Preferred forbs varied more with rainfall

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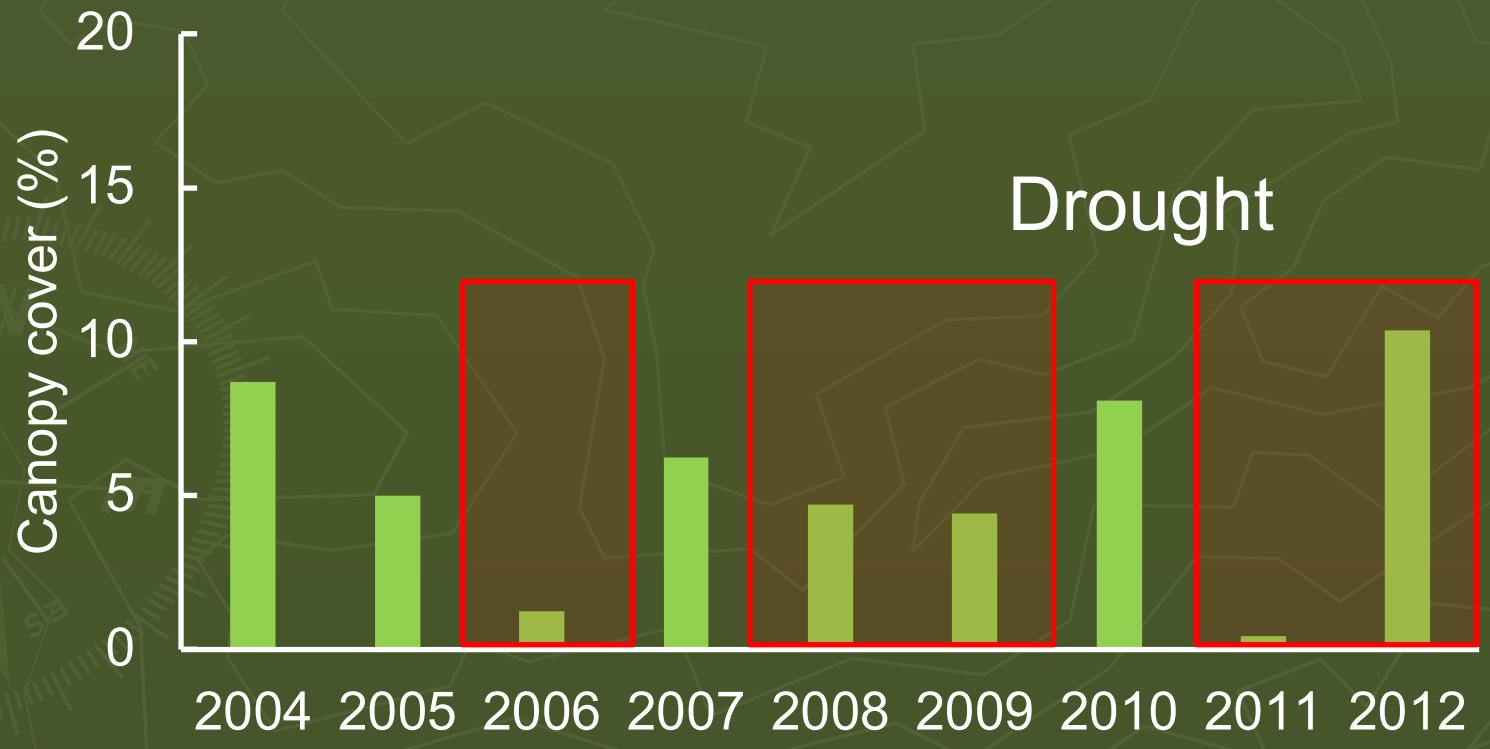
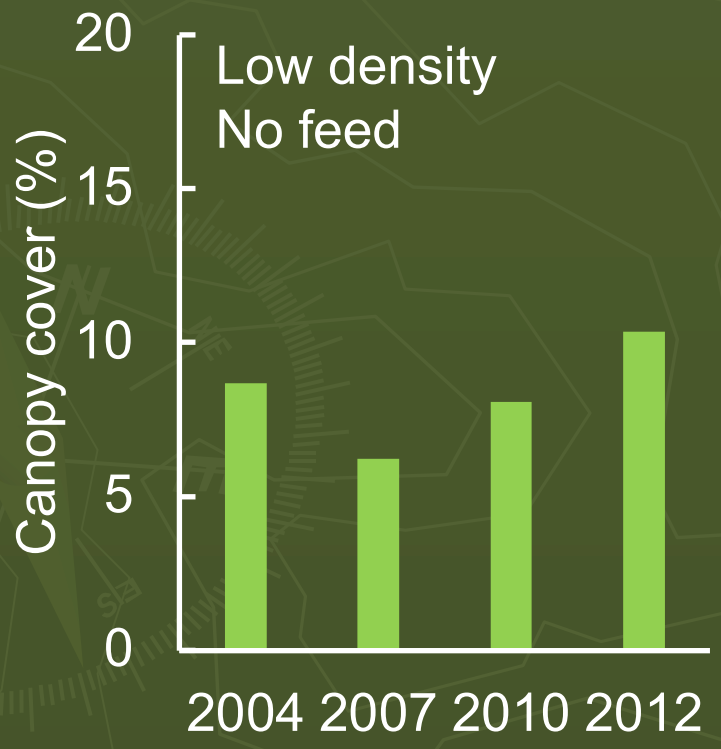
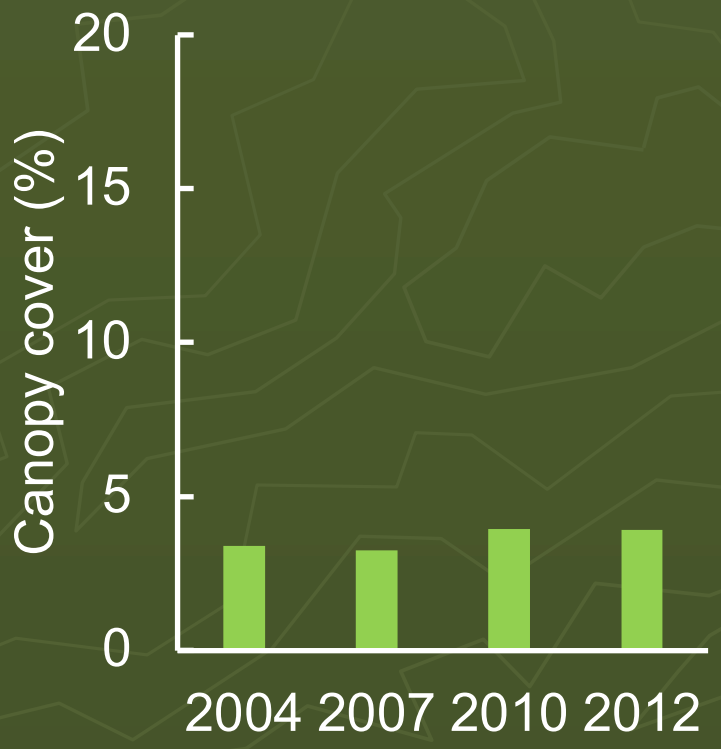


Increasing deer density

- No reduction of preferred forbs





Increasing deer density

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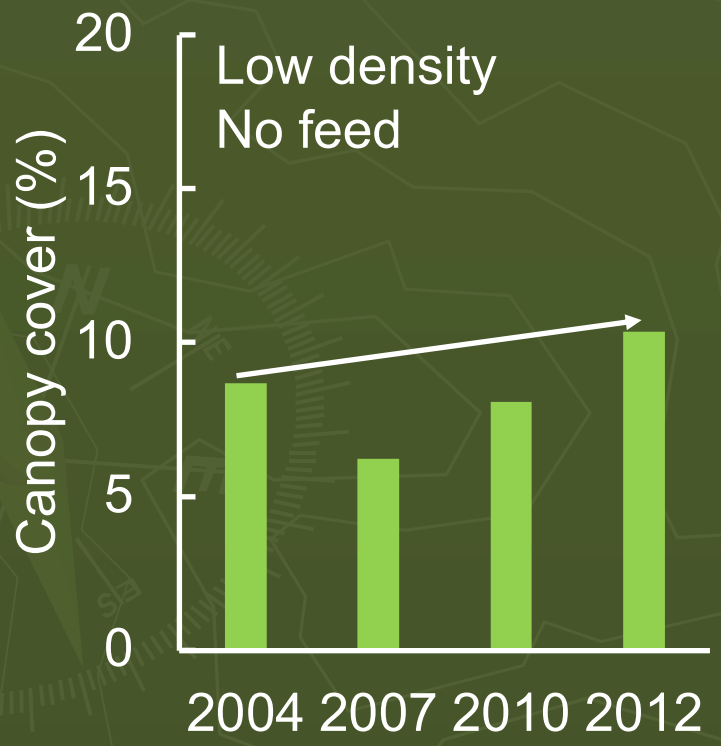
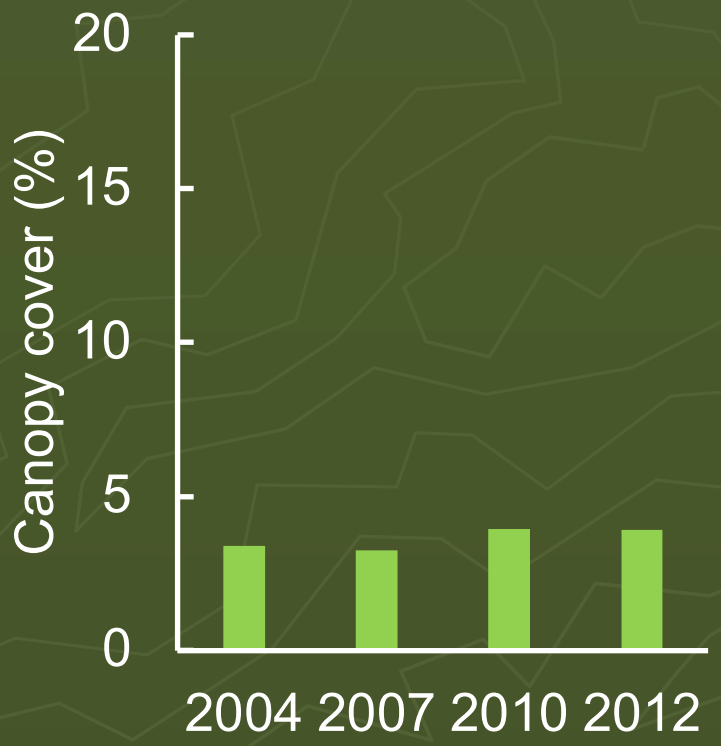
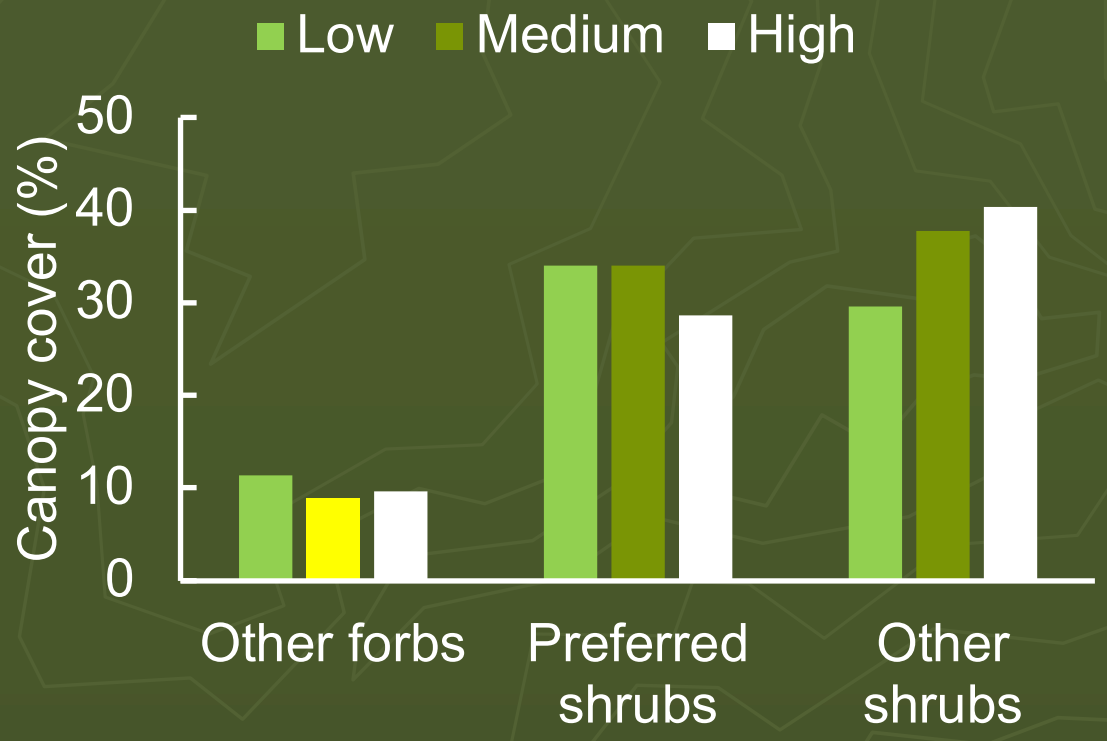




Increasing deer density

- Did not affect
  - Canopy cover of other forbs
  - Number of forb species
  - Canopy cover of woody plants

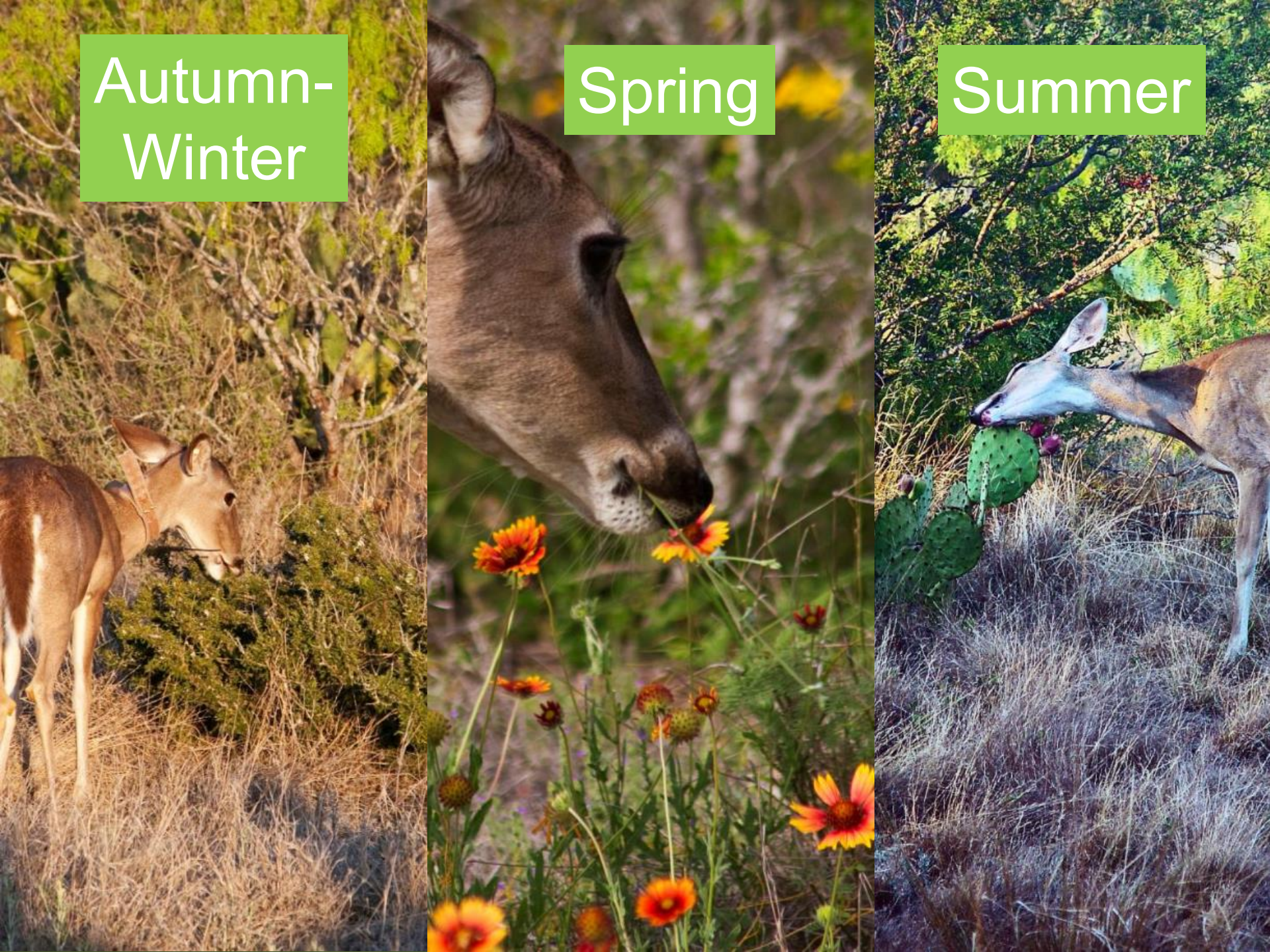


Why no effects detected?

- Variation in rainfall
  - Wet years (2004, 2007, 2010)
    - Food abundant
    - Swamping effect
  - Drought years (2006, 2008-09, 2011)
    - 44% of forbs annuals
    - Perennials dormant during drought
    - Avoid being eaten
  - Weakens influence of deer density

Why no effects detected?

- Changing food availability
  - Deer switch forage classes depending on availability
  - Allows recovery of forage class not being eaten


Autumn-
Winter
Spring
Summer

Why no effects detected?

- Anti-herbivore defenses
  - Replacing leaves removed by deer
  - Canopy architecture
  - Thorns and spines
  - Anti-nutrition plant compounds

Why no effects detected?

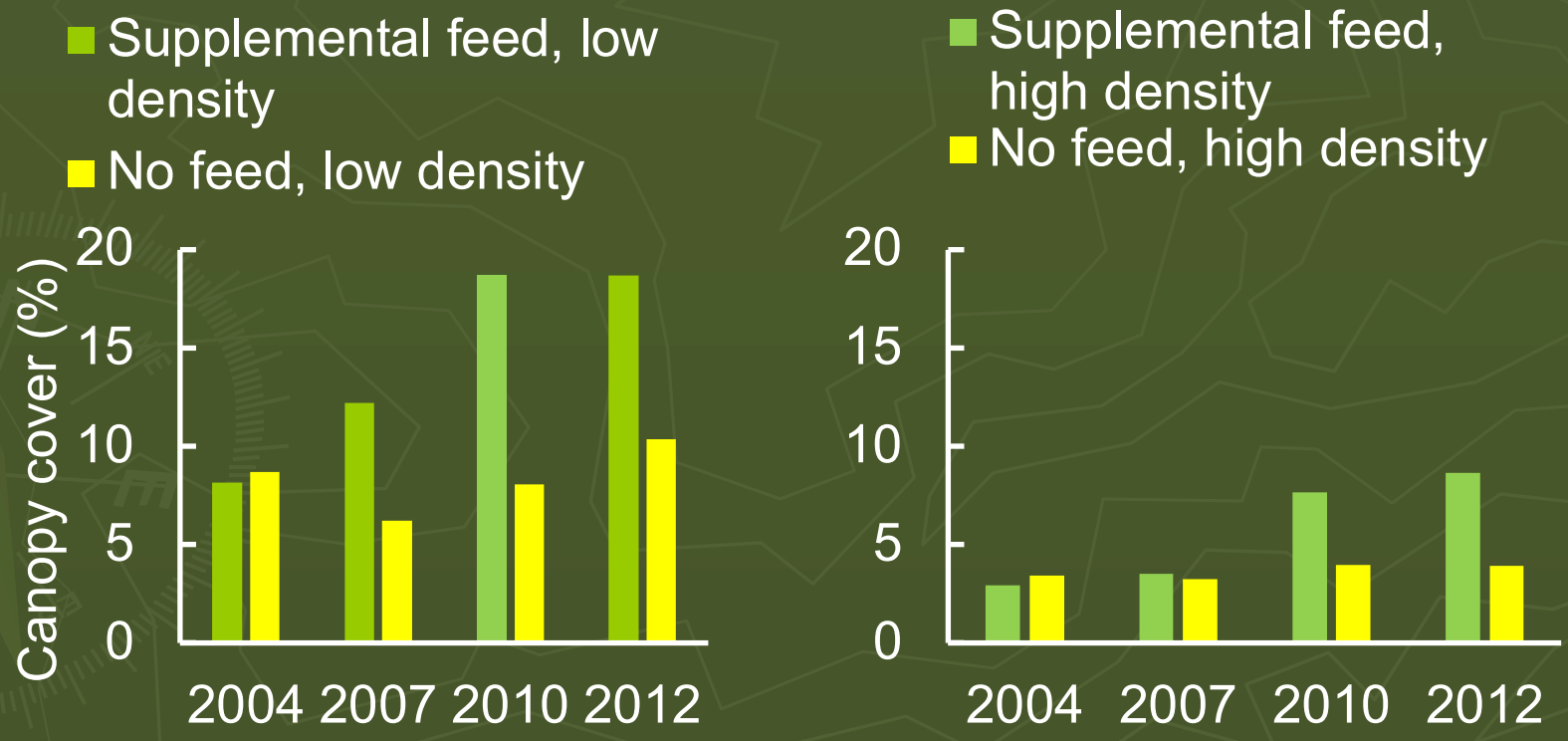
- Legacy effects
  - Woody plants increased in past 200-300 years
  - Developed under intensive use
    - 2.4 million sheep and goats in 1882
    - 1 sheep (or goat)/3 acres in Dimmit county

Vegetation response to feeding

- Increased foraging
  - Preferred plants?
  - Unpalatable plants?
- Vegetation degradation?

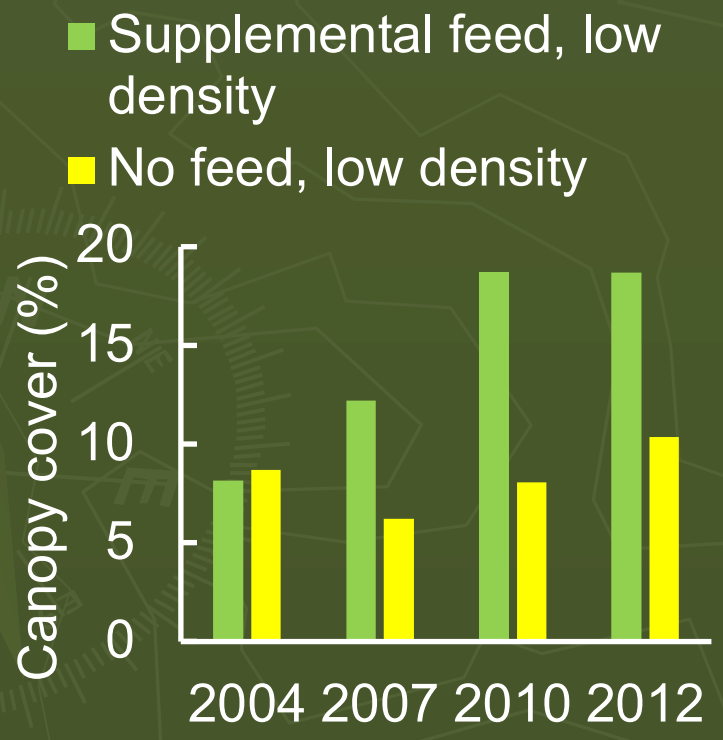
Supplemental feed

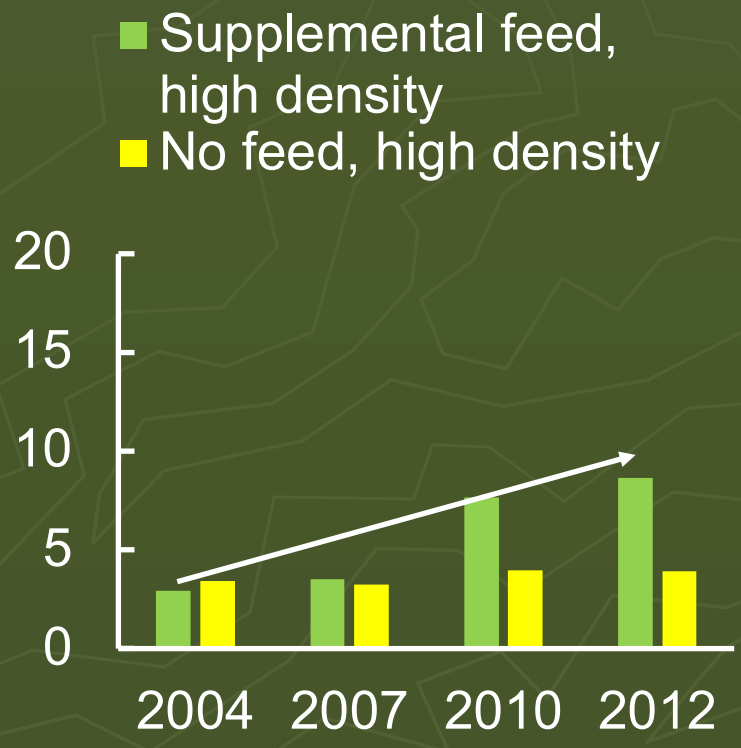
- Preferred forbs increased



Supplemental feed

- Preferred forbs increased
- Increase (%) similar in low and high





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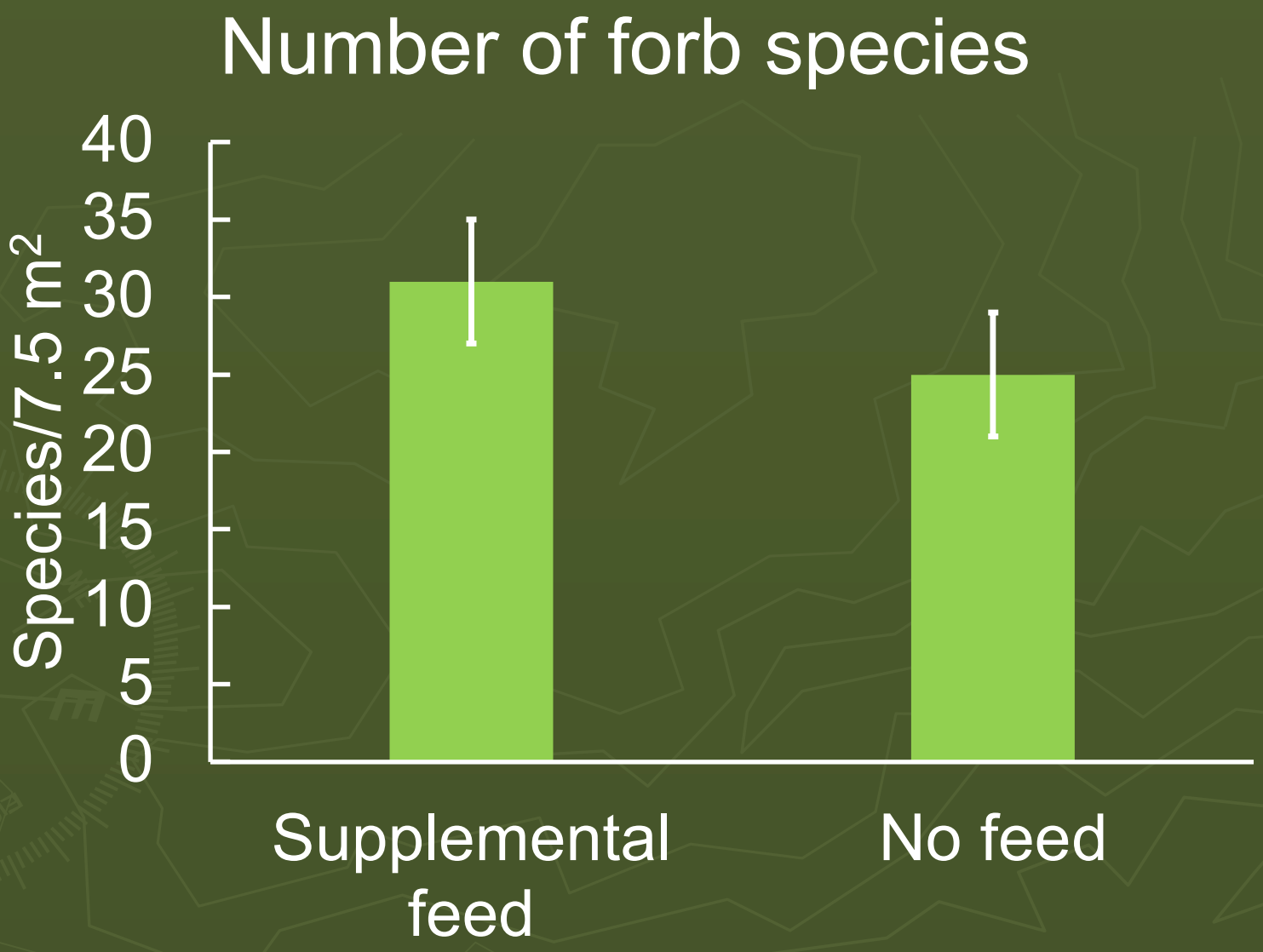

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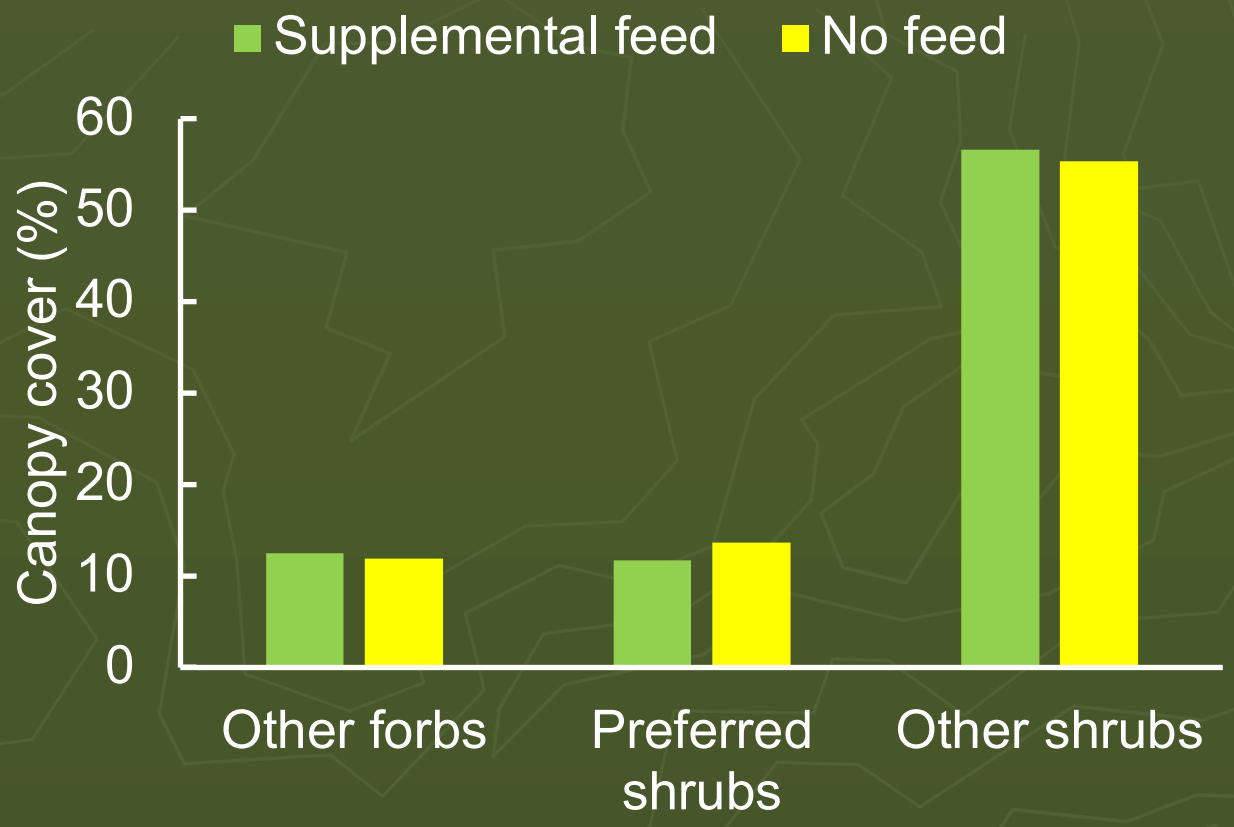
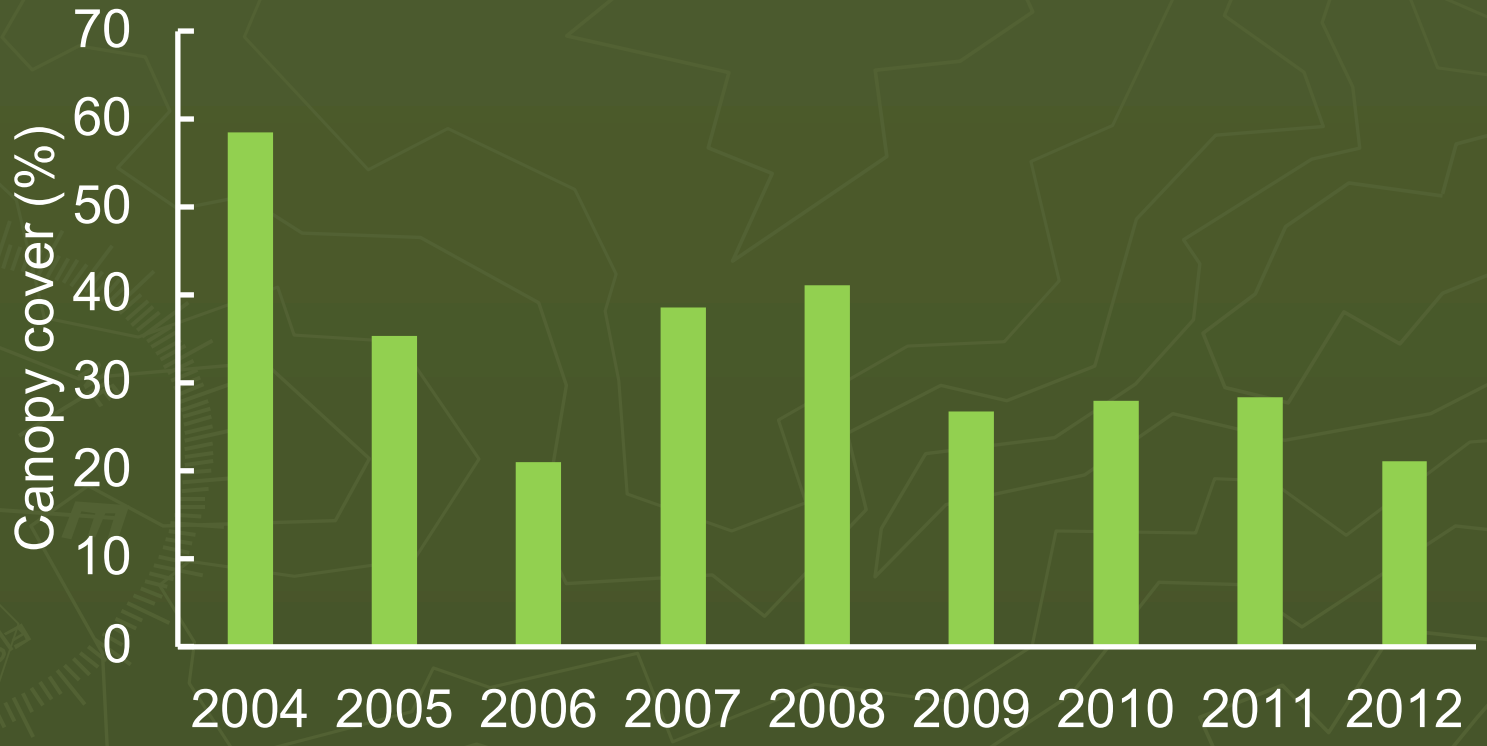


Why did preferred forbs increase with supplemental feed?

- Protective effect
  - >50% of deer diets was feed
  - Exclosures
    - No cattle or pigs, controlled deer densities
    - Recovery from pre-enclosure grazing and browsing

Why did preferred forbs increase with supplemental feed?

- Reduced perennial grasses during 2009-2012



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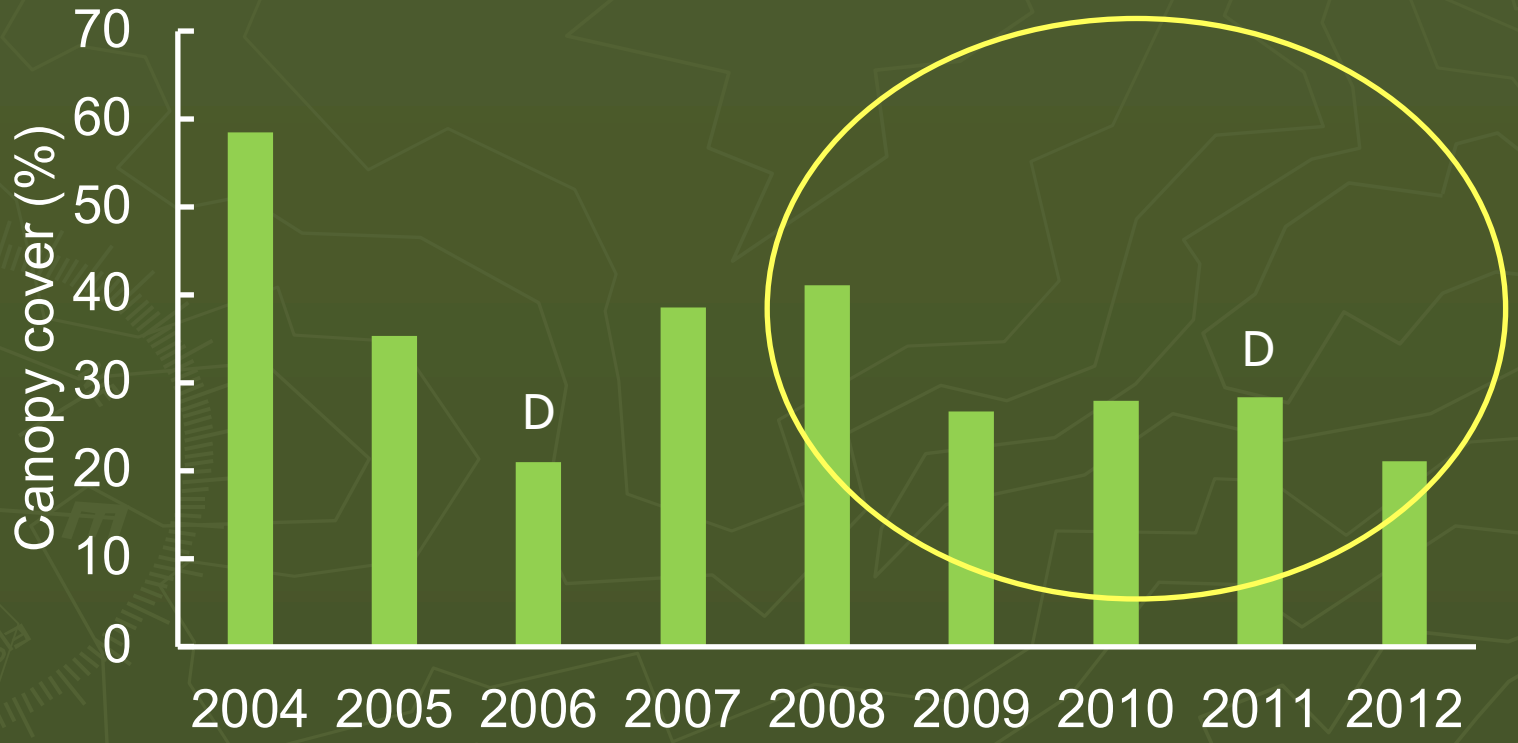

Conclusions

- Vegetation responses to deer do not follow traditional ideas of vegetation change
- Reducing deer densities unlikely to alter vegetation
  - Within range of densities tested
- Time lags
  - Years required for effects to be expressed
  - 6 years at high density

Acknowledgements

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Questions?
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