



United States Department of Agriculture



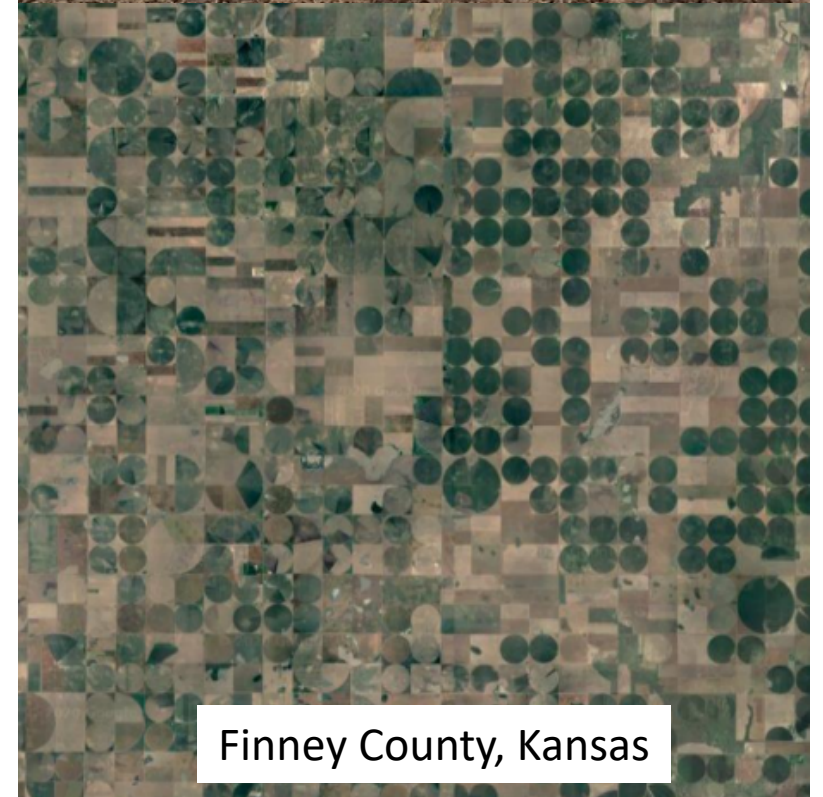
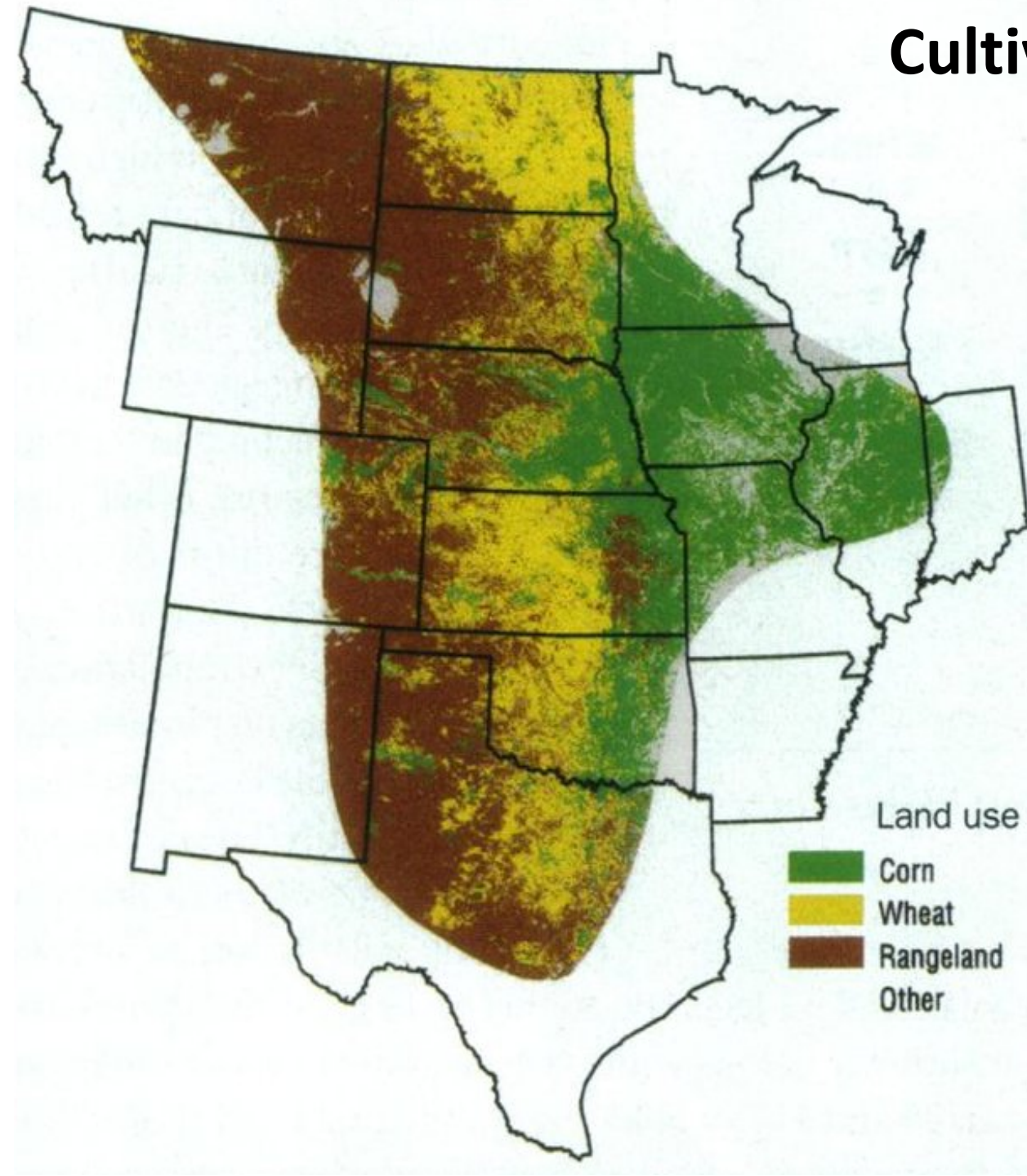
# Reducing the Threat of Land Use Conversion

Dr. Dave Naugle (Univ. of Montana, Missoula, MT) & Dr. Dan Sullins (Kansas State University, Manhattan, KS)



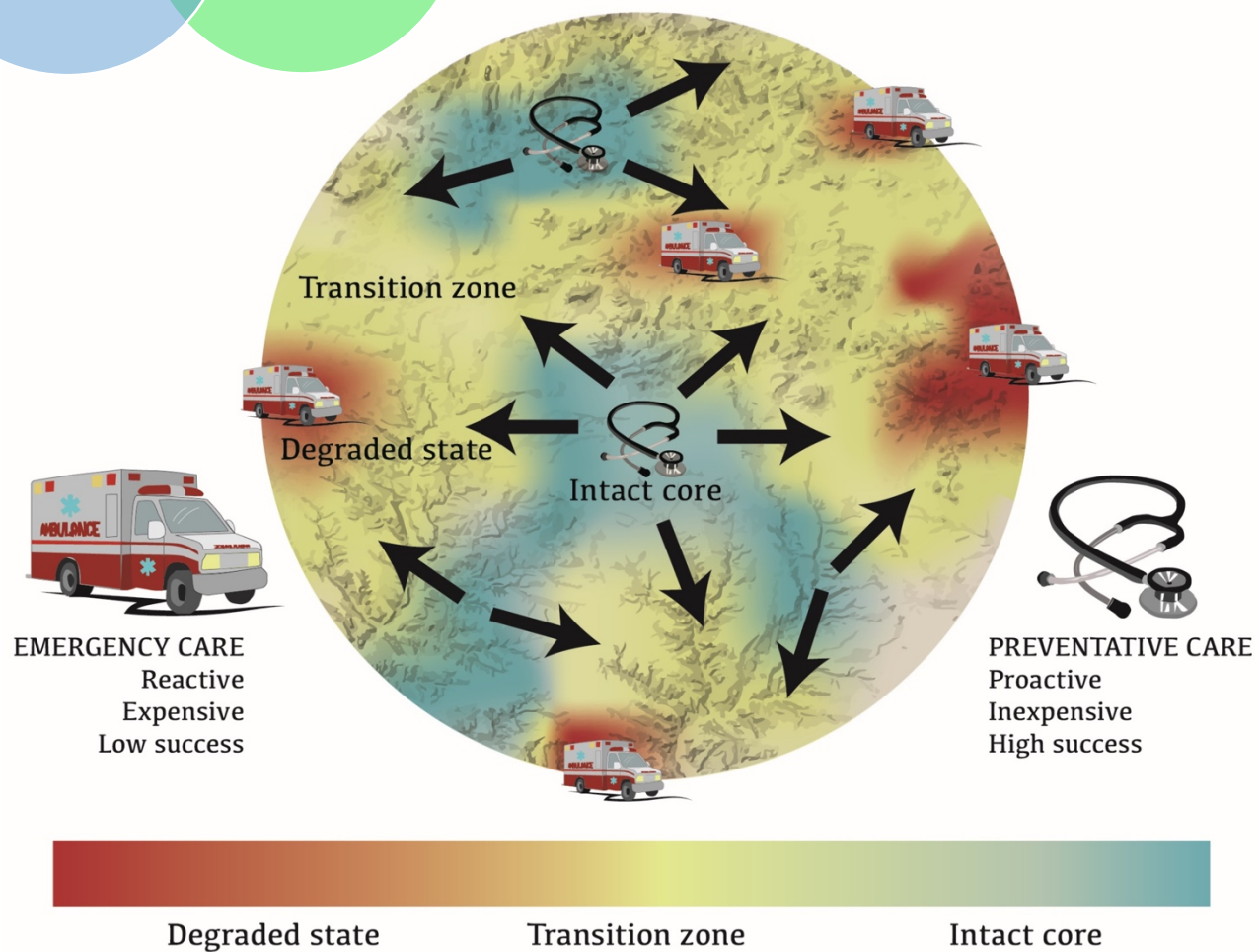
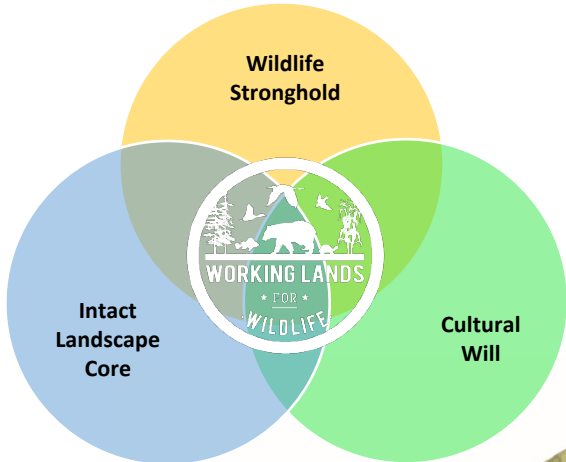


# Cultivation

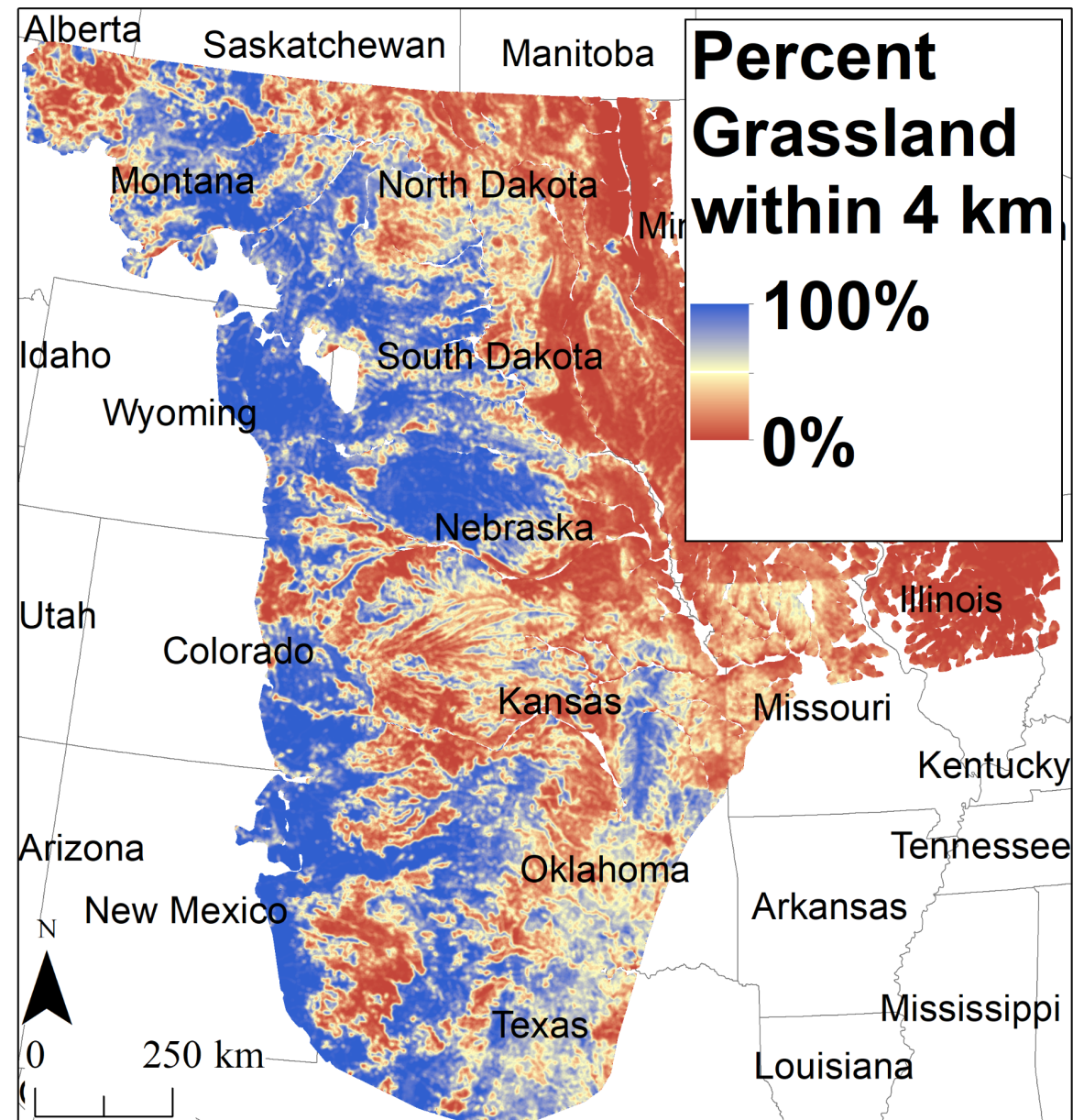


Finney County, Kansas





Credit: USDA-NRCS, Working Lands for Wildlife





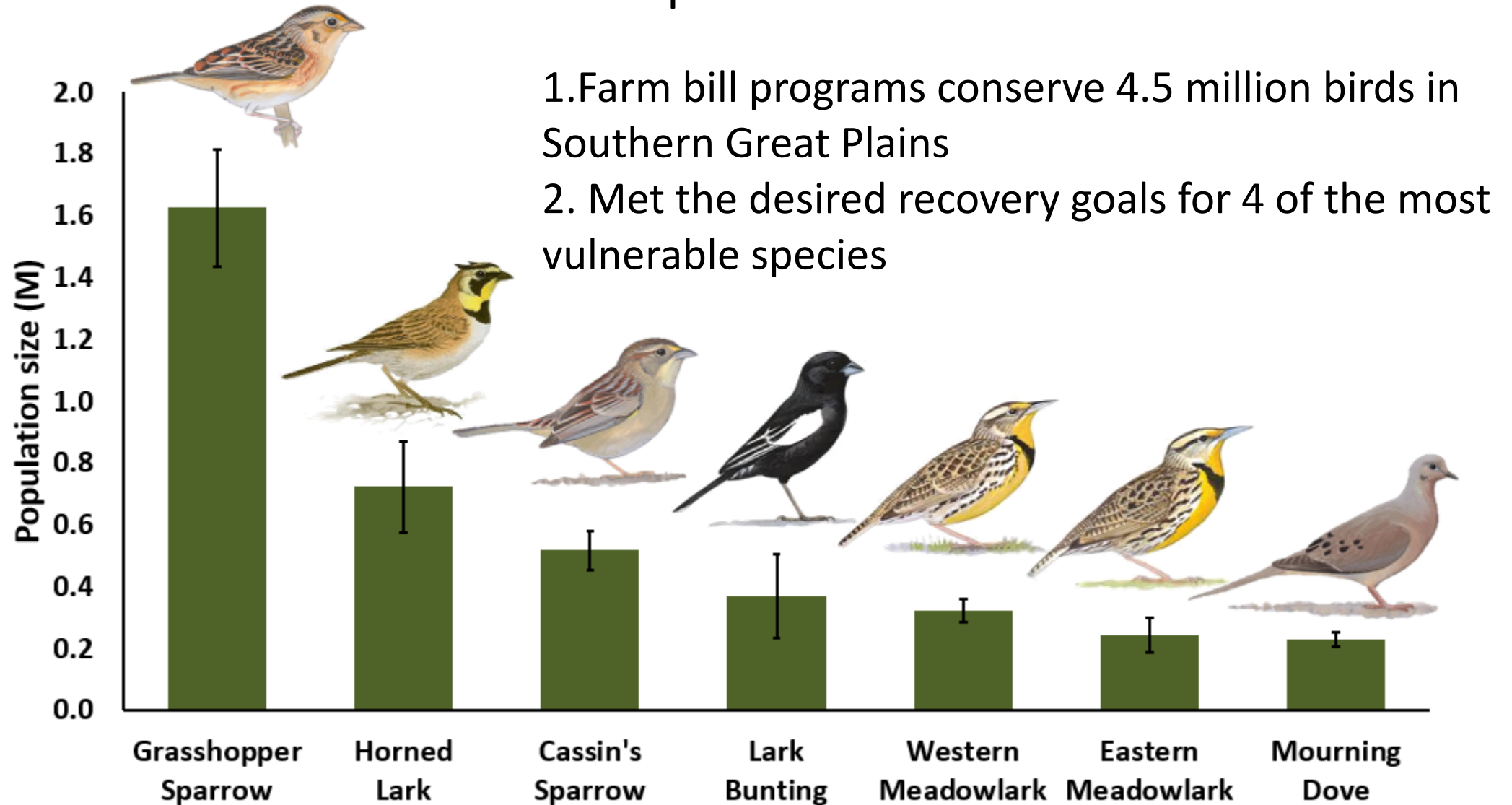
# The Conservation Reserve Program (CRP): A Tool For Reducing Grassland Loss

- Began in 1985
- Converts cropland to perennial cover (grassland)
- Contracts with producers to remove environmentally sensitive lands from agricultural production in exchange for a rental payment
- Completely voluntary
- 10-15 year long contracts





# Farm Bill Capable of Recovering Grassland Bird Populations



Pavlacky et al. *In press*. Private land conservation programs scale-up to meet population recovery goals for the most vulnerable grassland birds. *Conservation Biology*.



# CRP as a Tool to Convert Cropland to Grassland

Think spatially and over broader periods of time

What happens after contracts expire? How many CRP fields remain as grassland? Where are fields more durable after expiration?

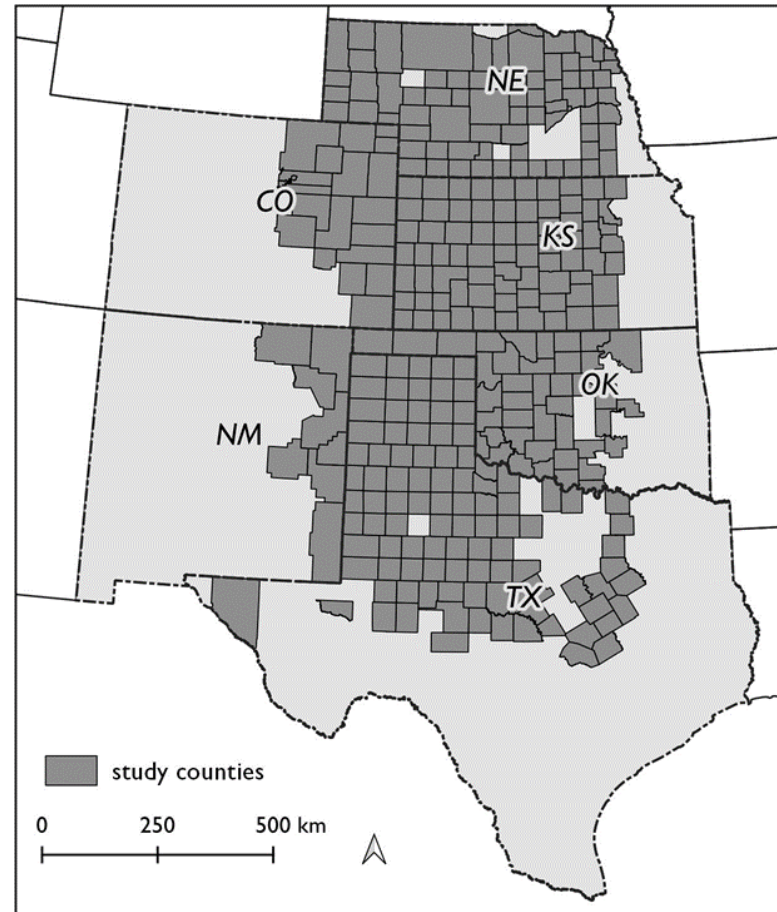
**Durability** is a term used to describe the “fate” or “survival” of the fields in a grassland state after contract expiration.





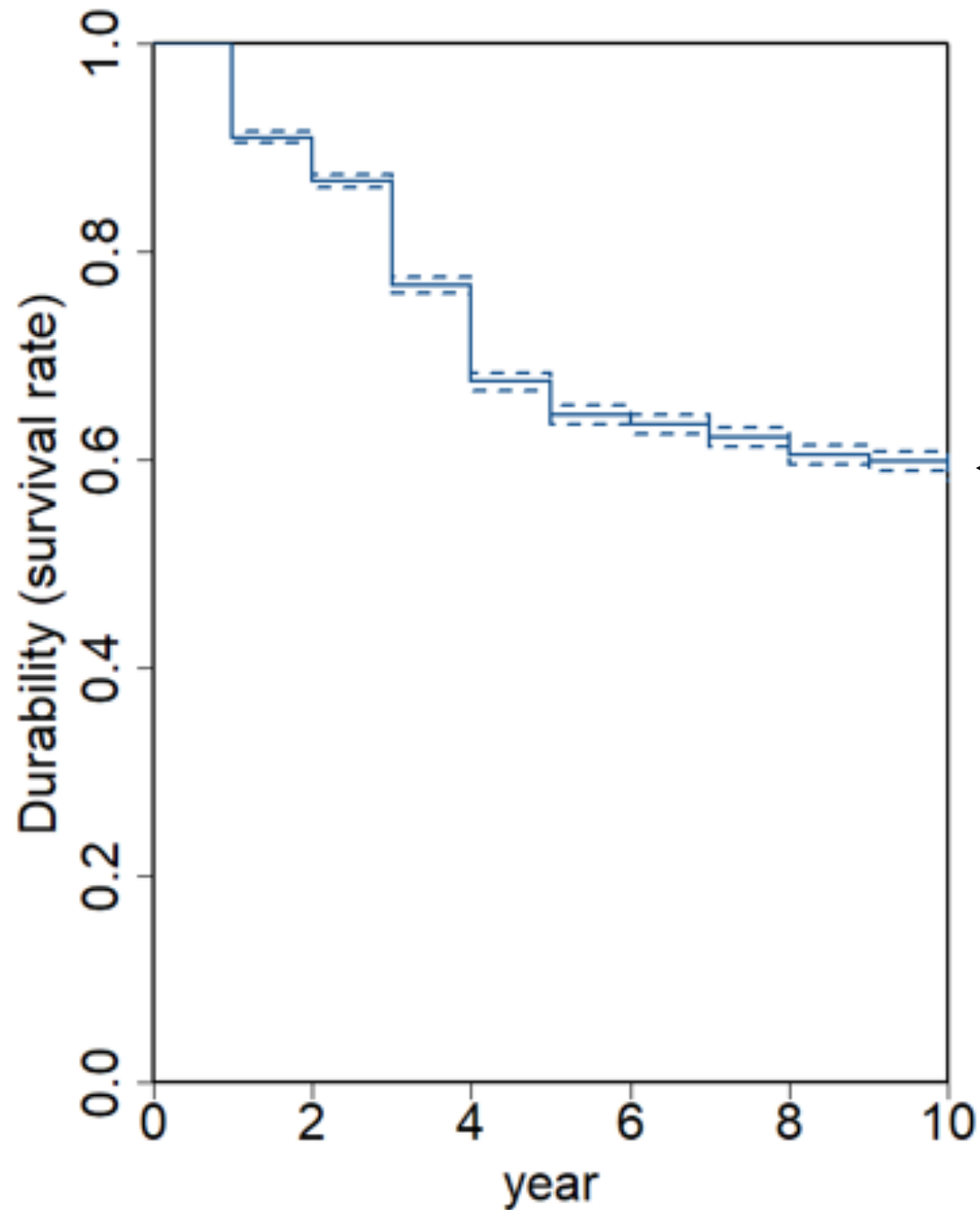
# Estimating Durability of Grasslands after CRP Expiration

- 10,879 CRP grasslands
- Fields that expired in 2007
  - Colorado = 680
  - Kansas = 3,965
  - Nebraska = 1,403
  - New Mexico = 280
  - Oklahoma = 1,774
  - Texas = 2,777
- Restricted to:
  - Introduced grasses (CP1)
  - Native grasses (CP2)
  - Already established grasses (CP10)



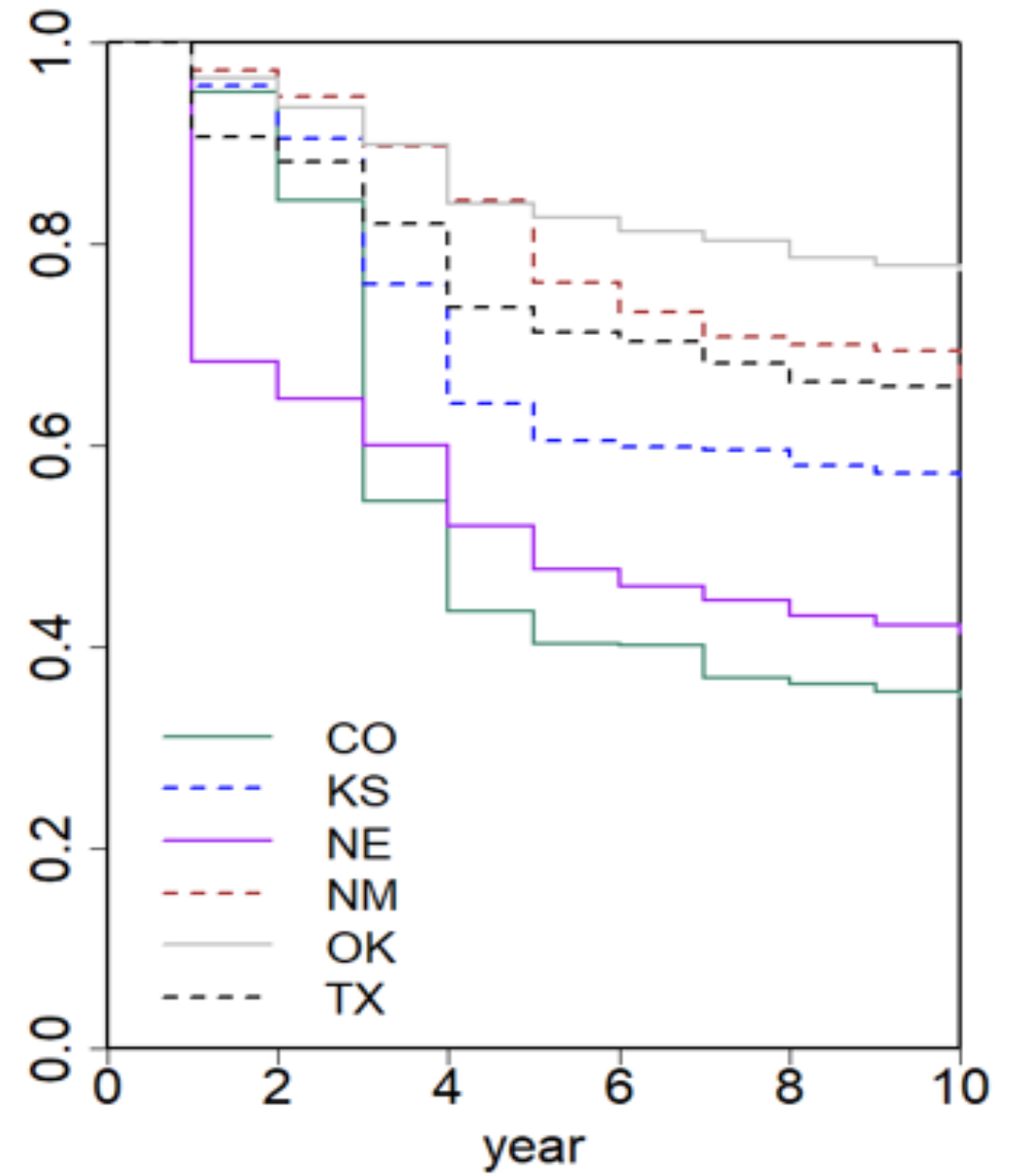
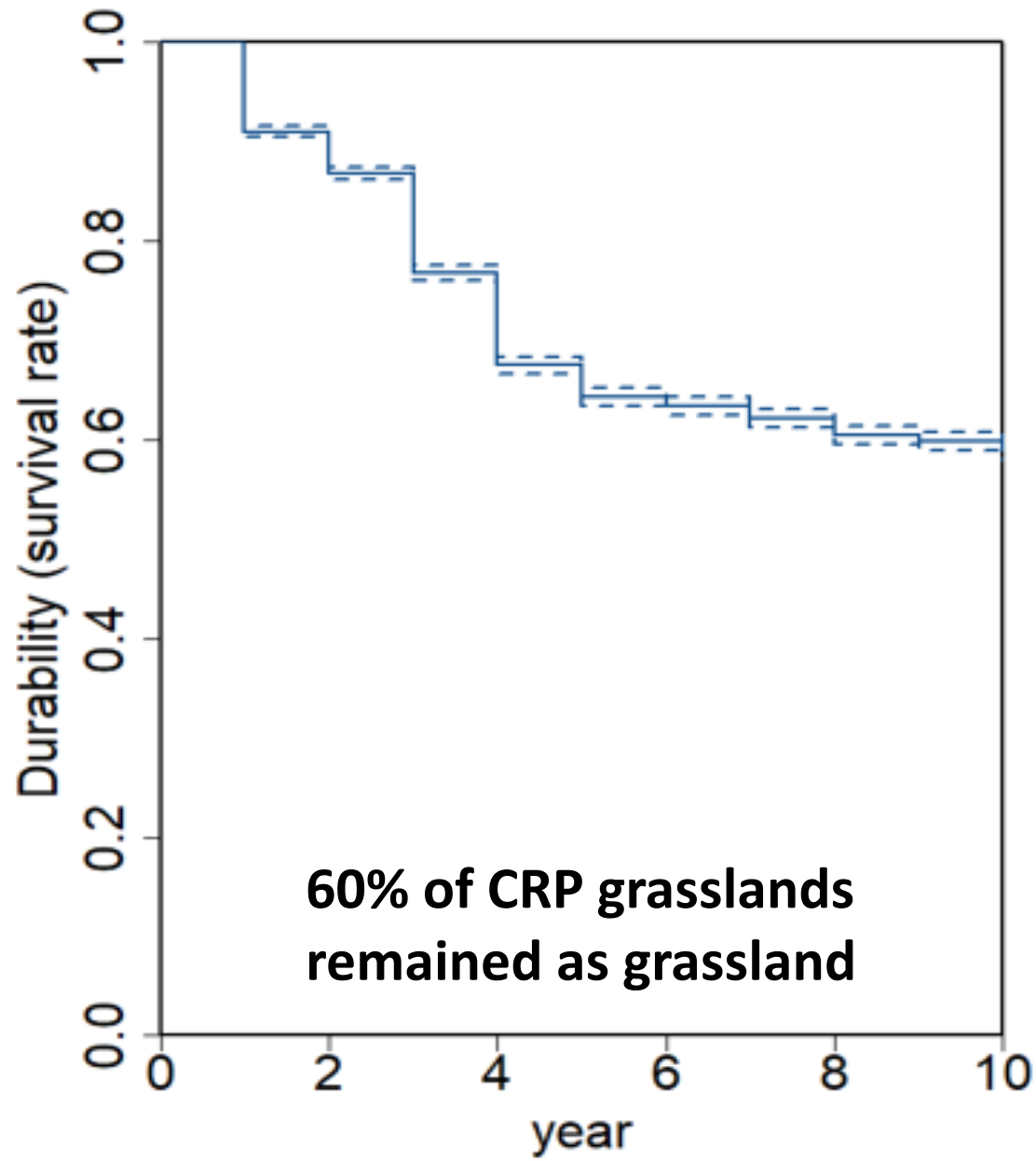
Other Co-Authors: Christian Hagen (Oregon State Univ.), Bram Verheijen (KSU), Meghan Bogaerts (PLJV), Tim Griffiths (NRCS)





**60% of CRP  
grasslands  
remained as  
grassland**



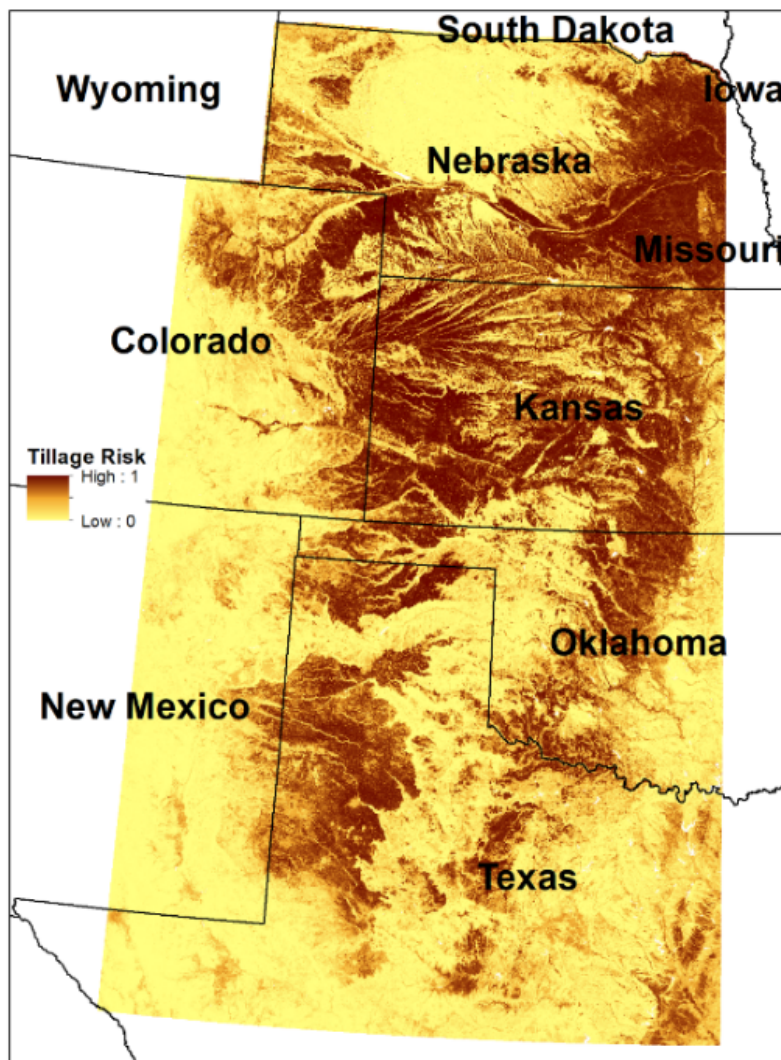


\* Annual variation in crop prices and drought severity also influenced durability

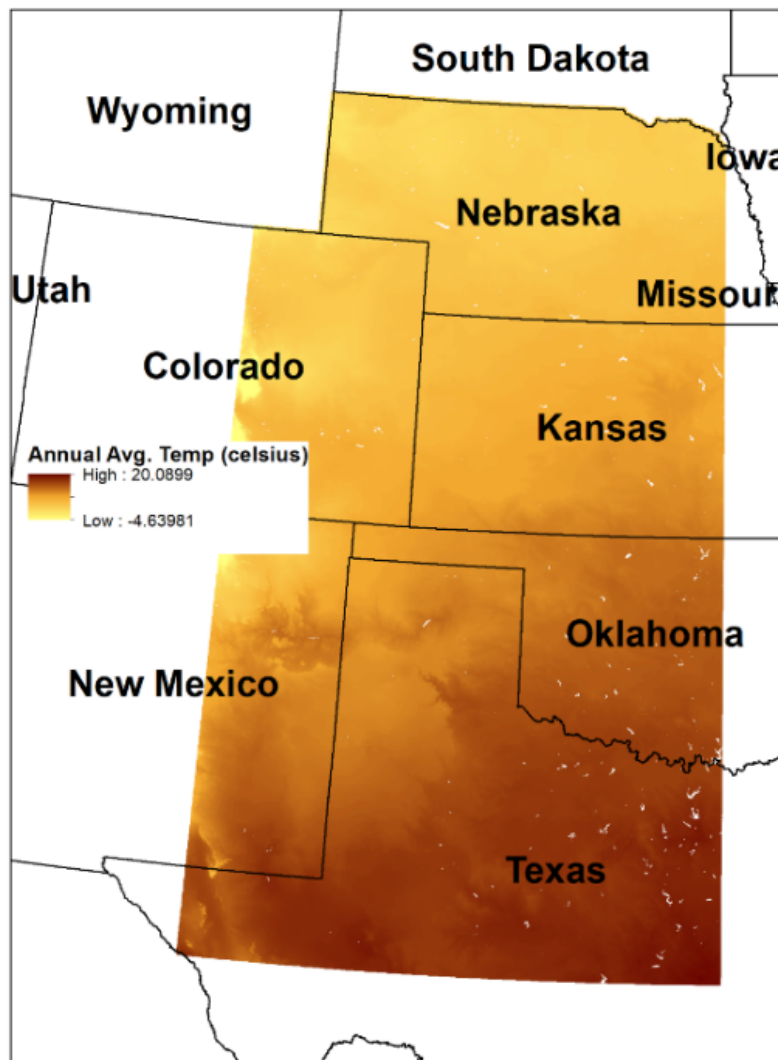


# Spatial Variation in CRP Durability

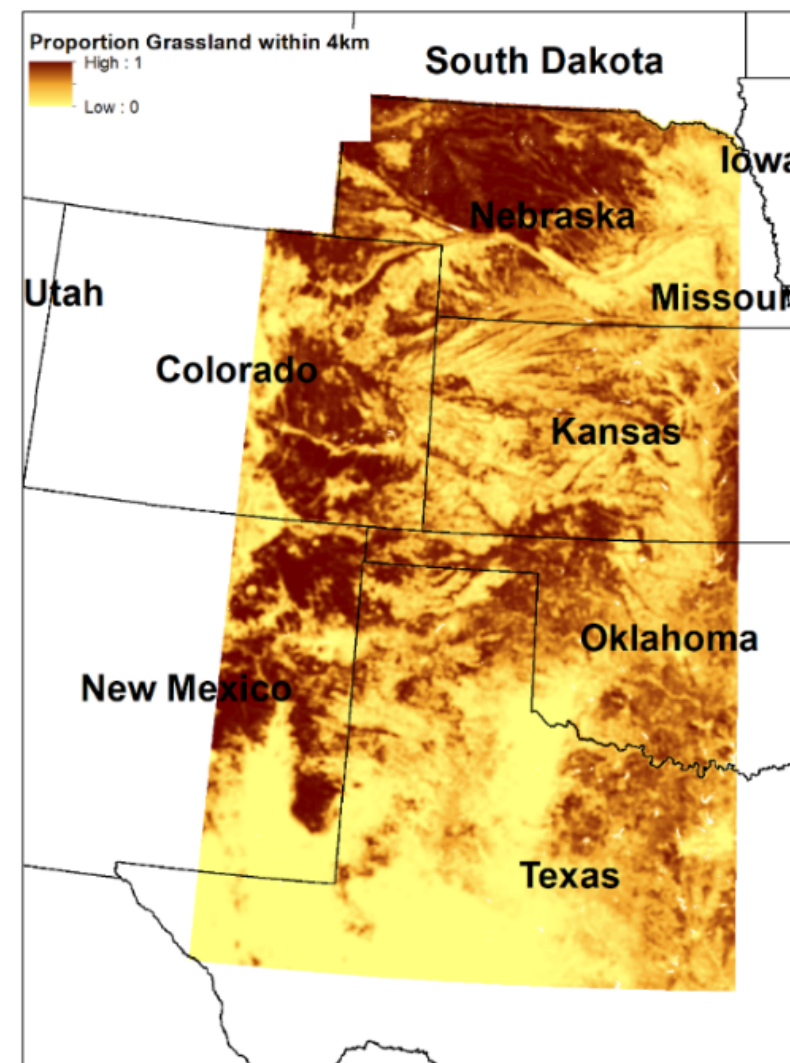
Tillage Risk Index



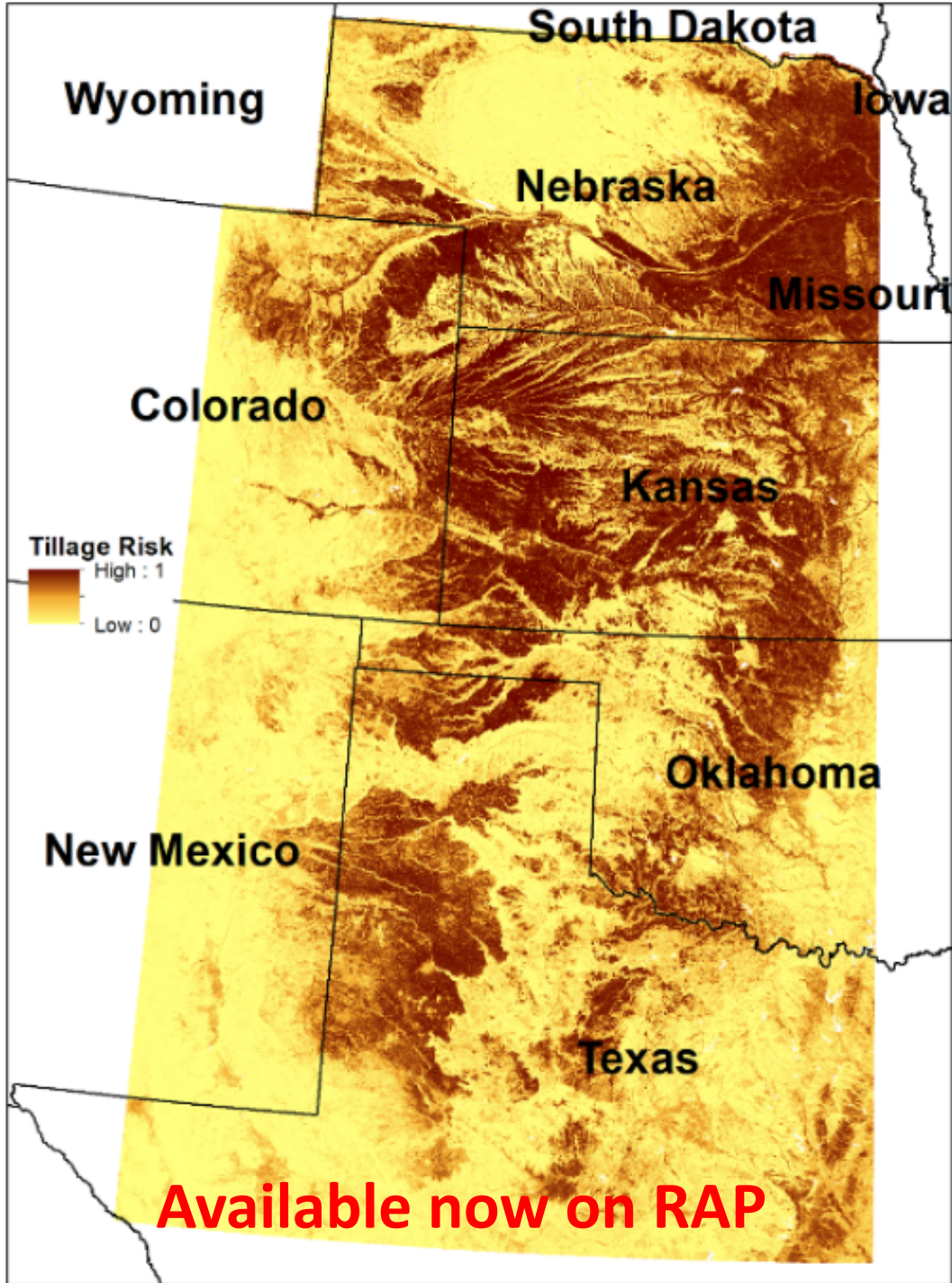
Annual Average Temperature



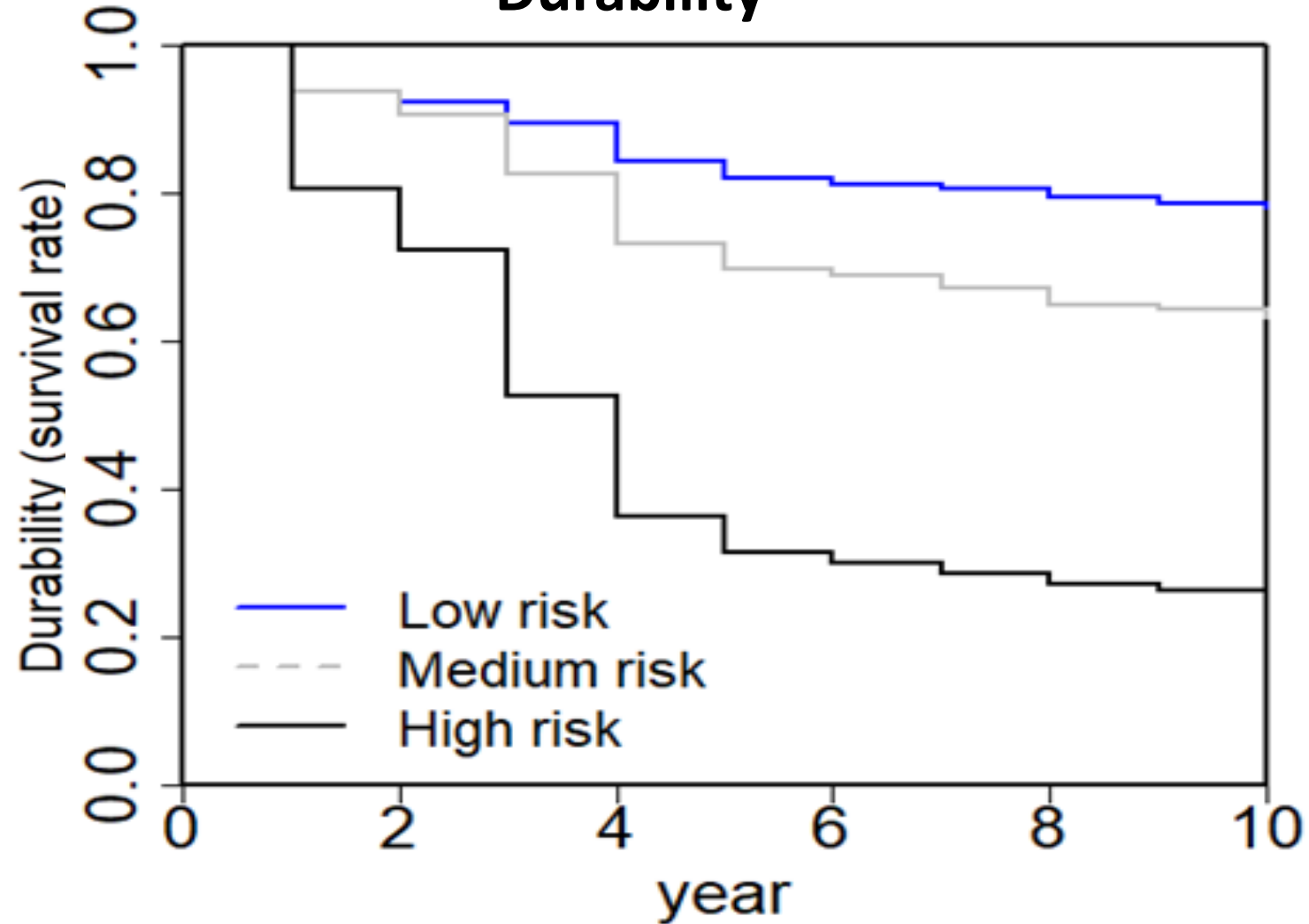
Proportion Grassland within 4km







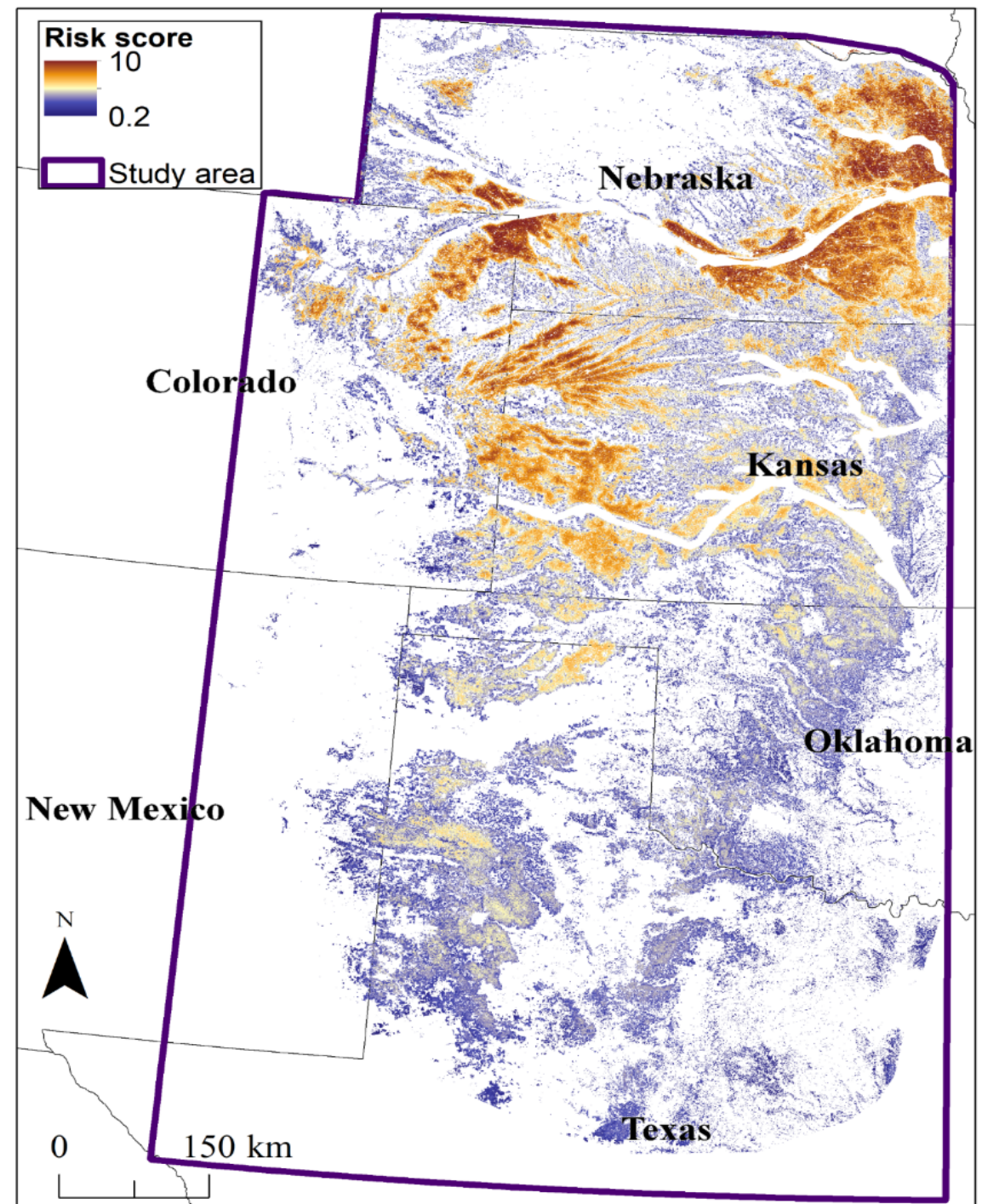
## Influence of Tillage Risk on Durability



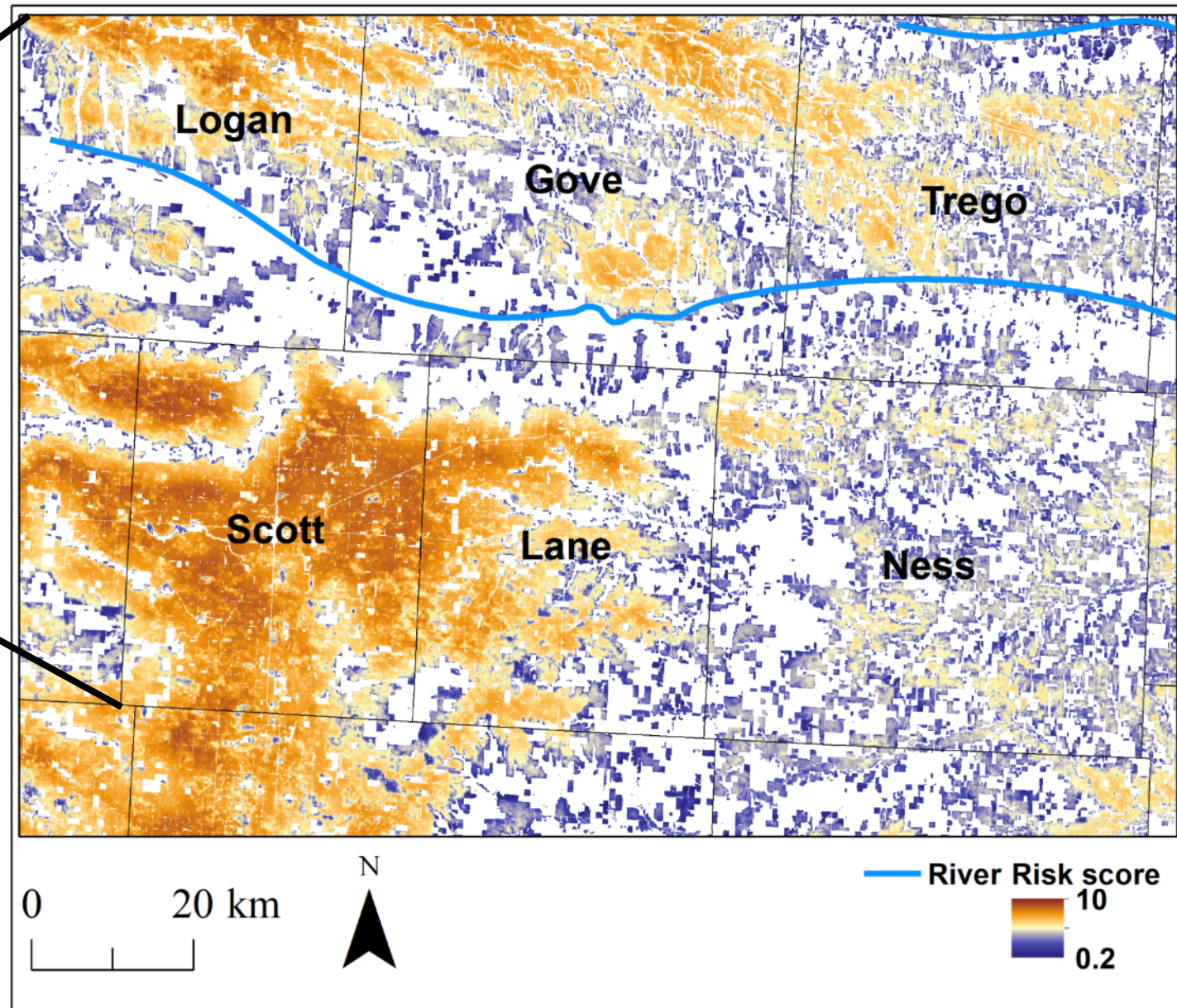
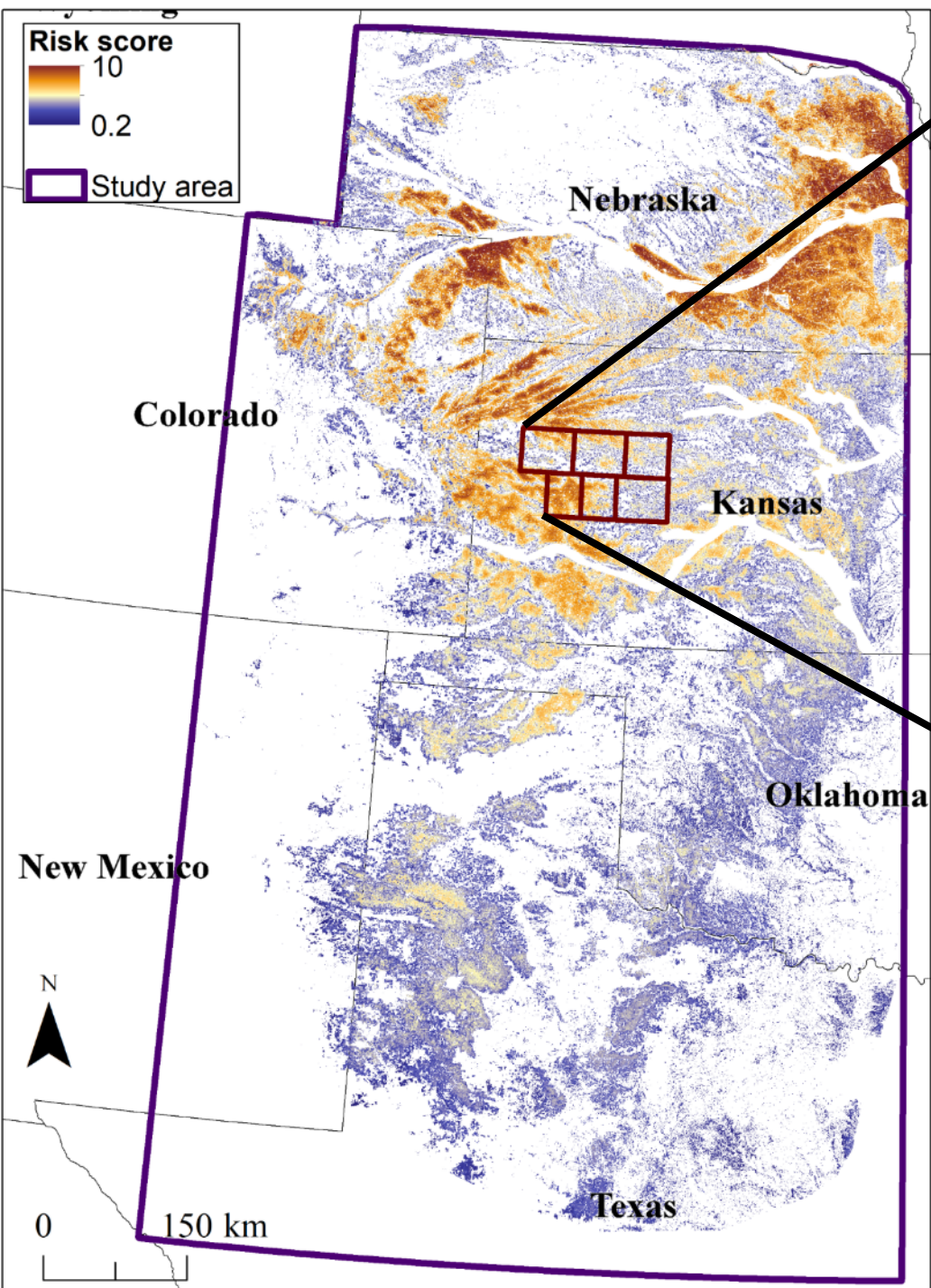
**4X the probability of remaining as grassland through spatial targeting**

# Predicted Surface of CRP Conversion Risk

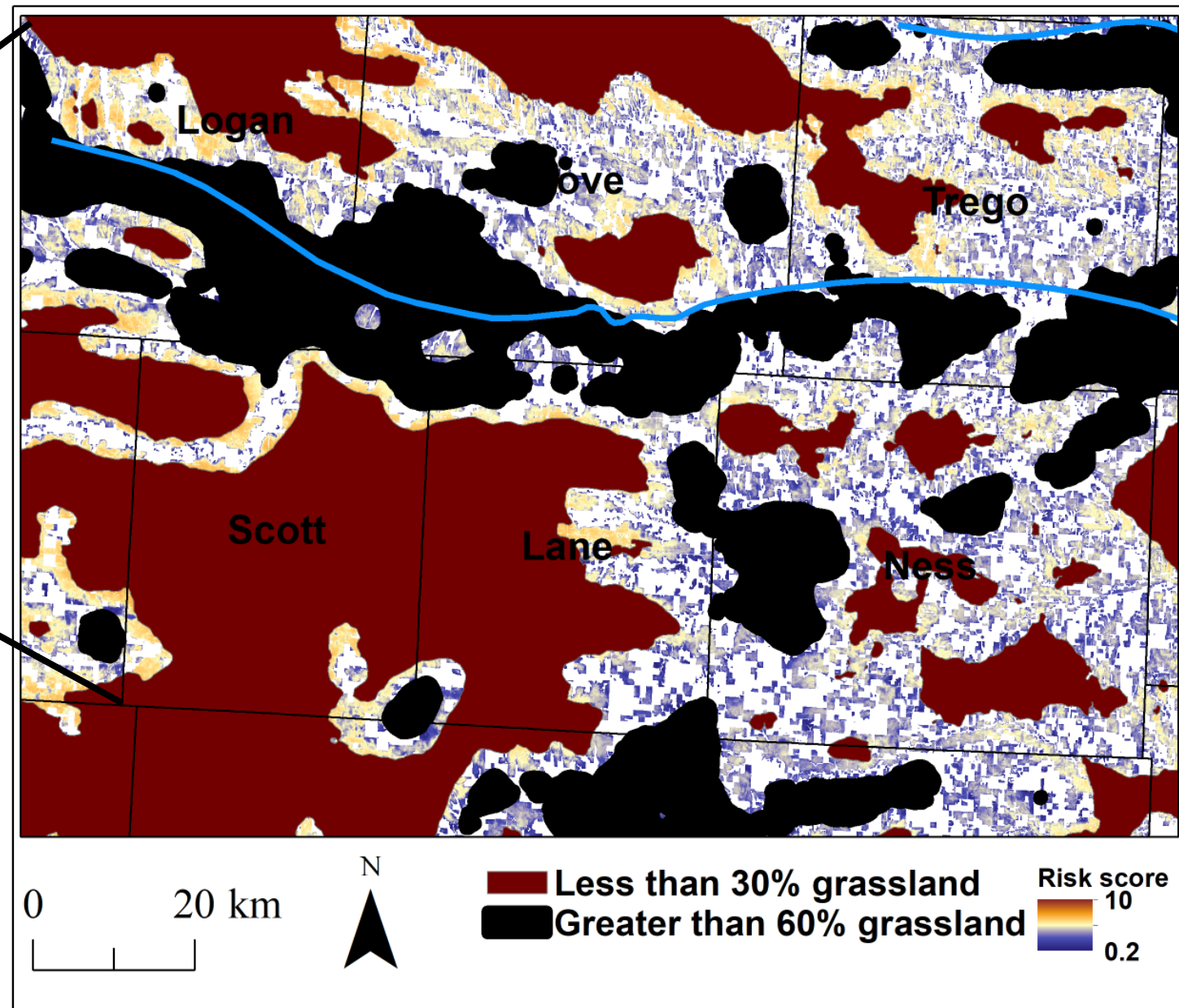
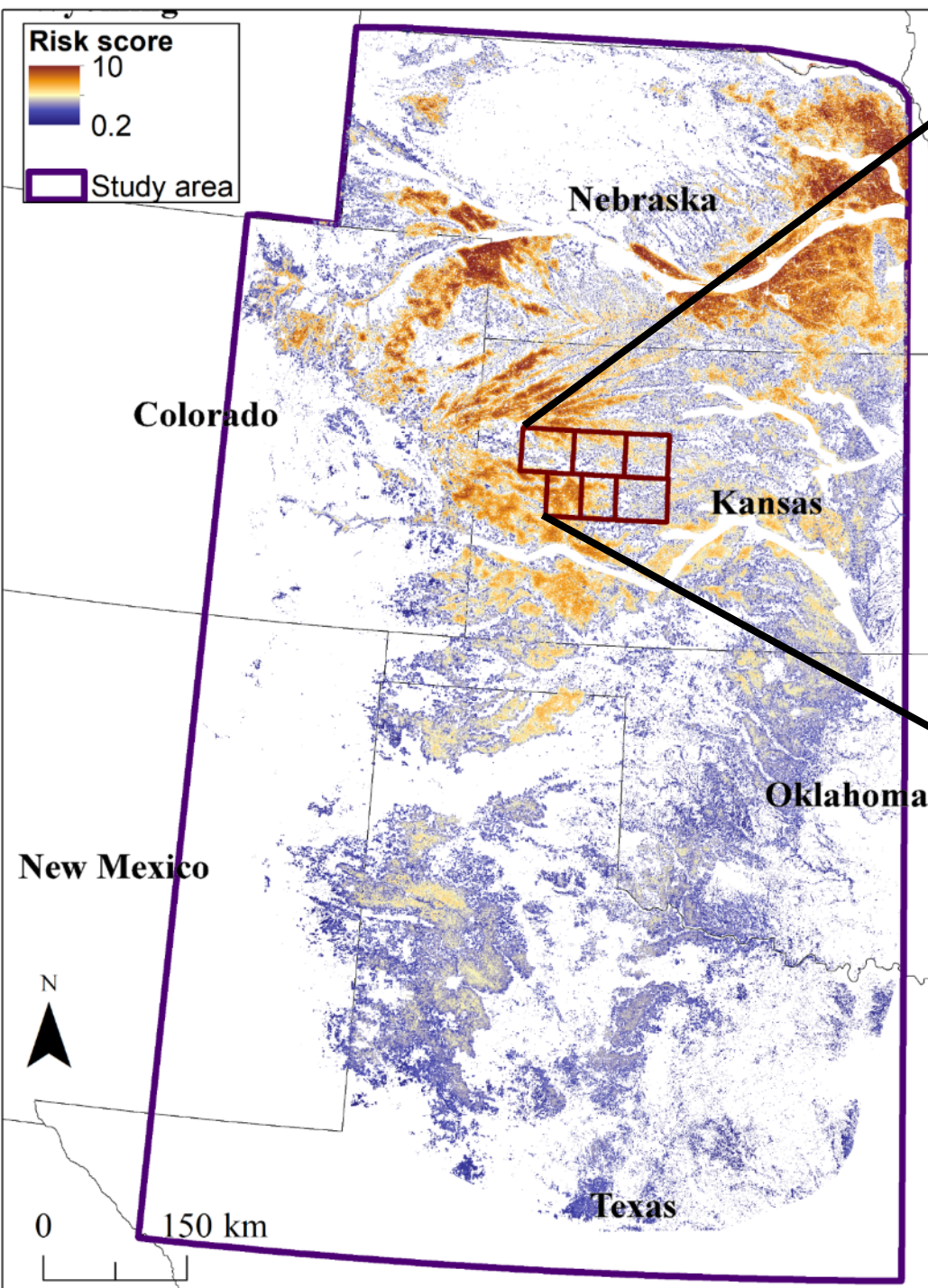
- Red= high risk of conversion to cropland
- Greater risk in northern extent
- Likely linked to better conditions for growing corn/ sorghum/wheat
- Expected greater risk in eastern areas
- Likely influenced by aquifer water availability and soil













**Expired CRP that was Hayed**



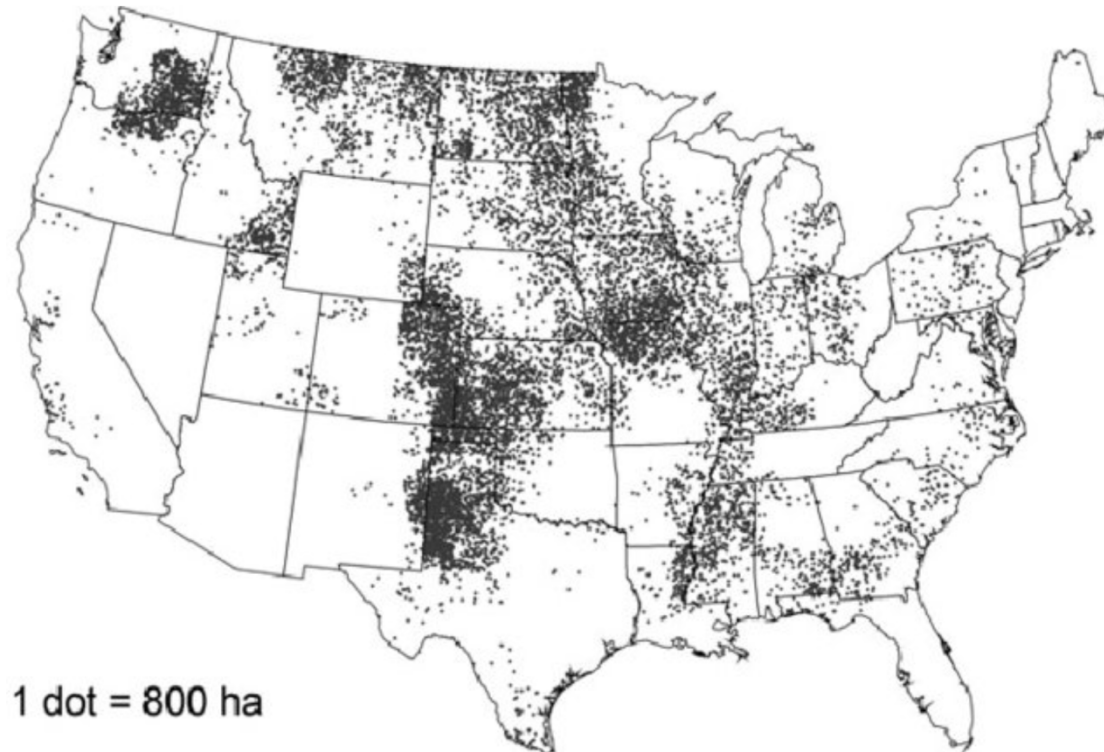
**Well managed expired CRP with lesser prairie-chicken nest**





# Management Implications

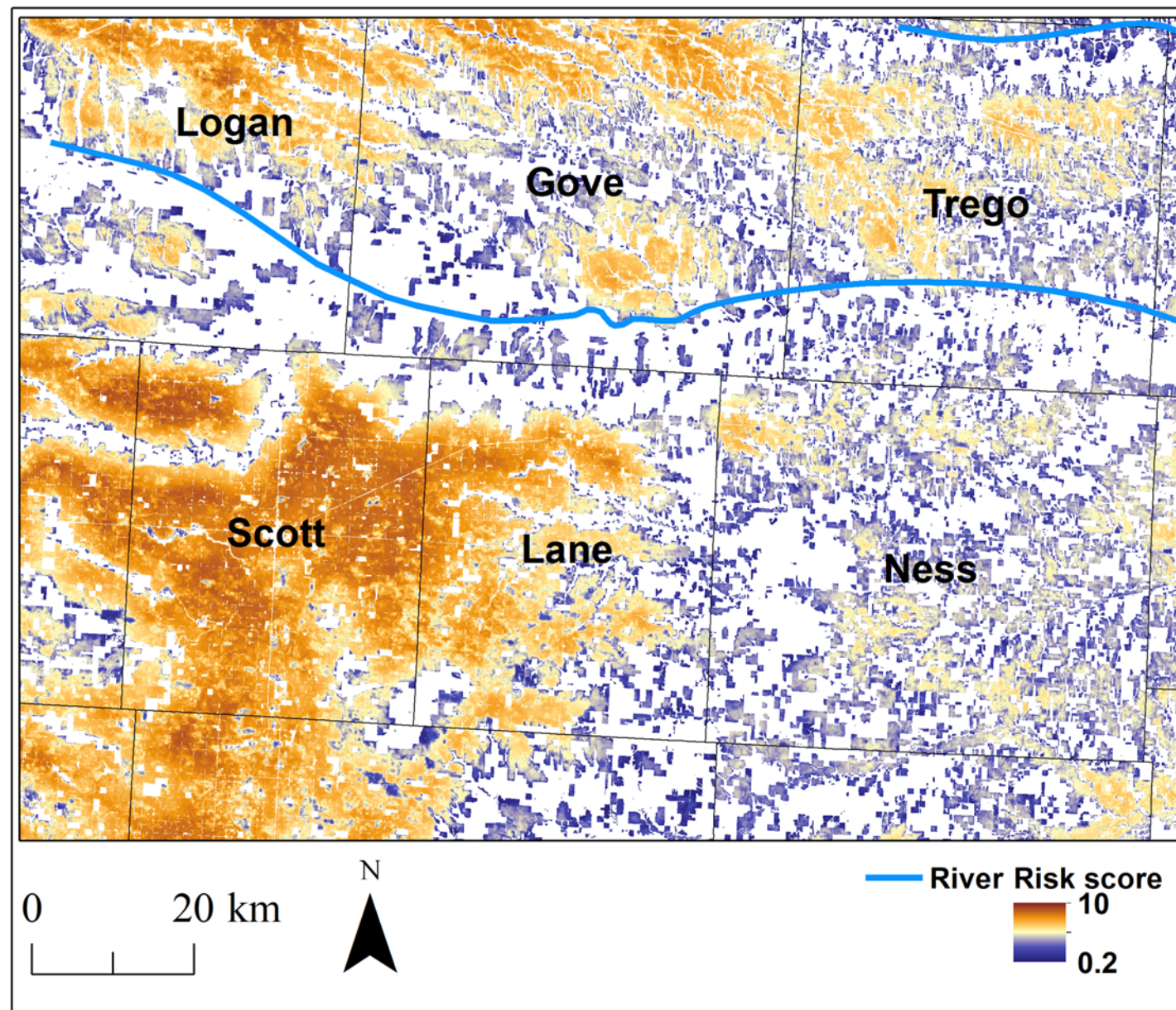
- Spatial targeting fill in gaps
- Envision enrollment and expiration of CRP fields over longer periods of time- buys more time
- Impact of CRP becomes greater than the sum of acres currently enrolled





# Management Implications

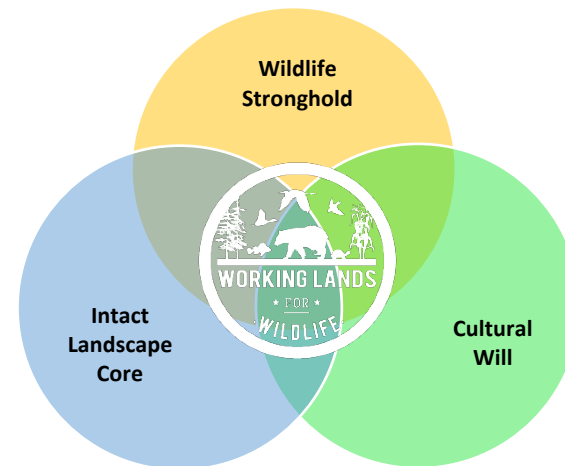
- Use CRP to piece together **grassland dominated landscapes** in areas of low conversion risk
- Consider targeting easements in lower risk areas as well



# Mindset for a Proactive, Spatial Strategy

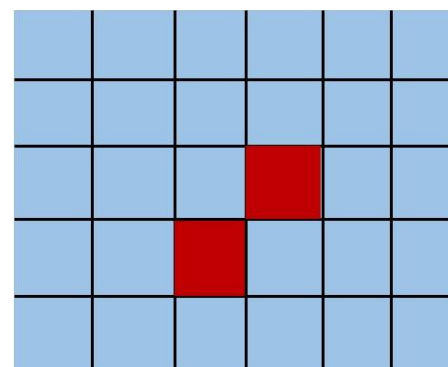
## 1. Keep grass green side up

- Easements
- Transition from idled lands to working grazing lands



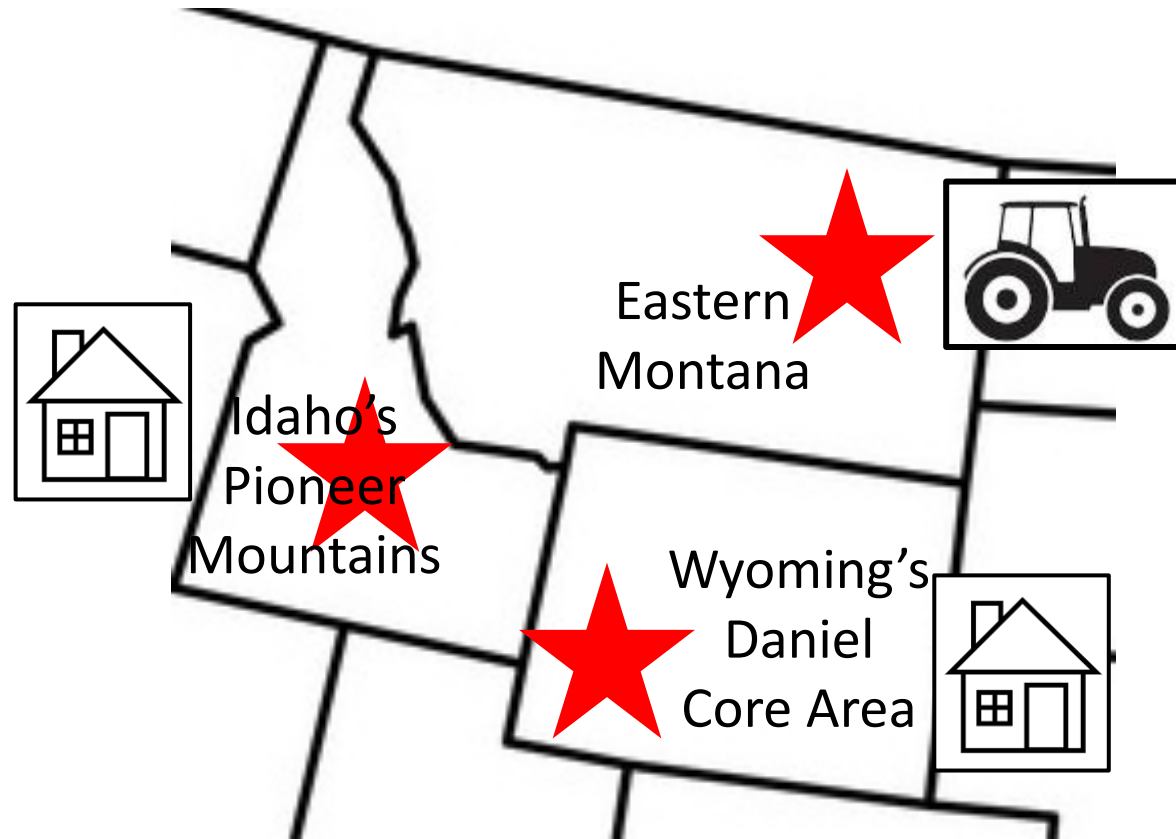
## 2. Fill in the grassland gaps

- Plant back cultivated lands to perennial grassland





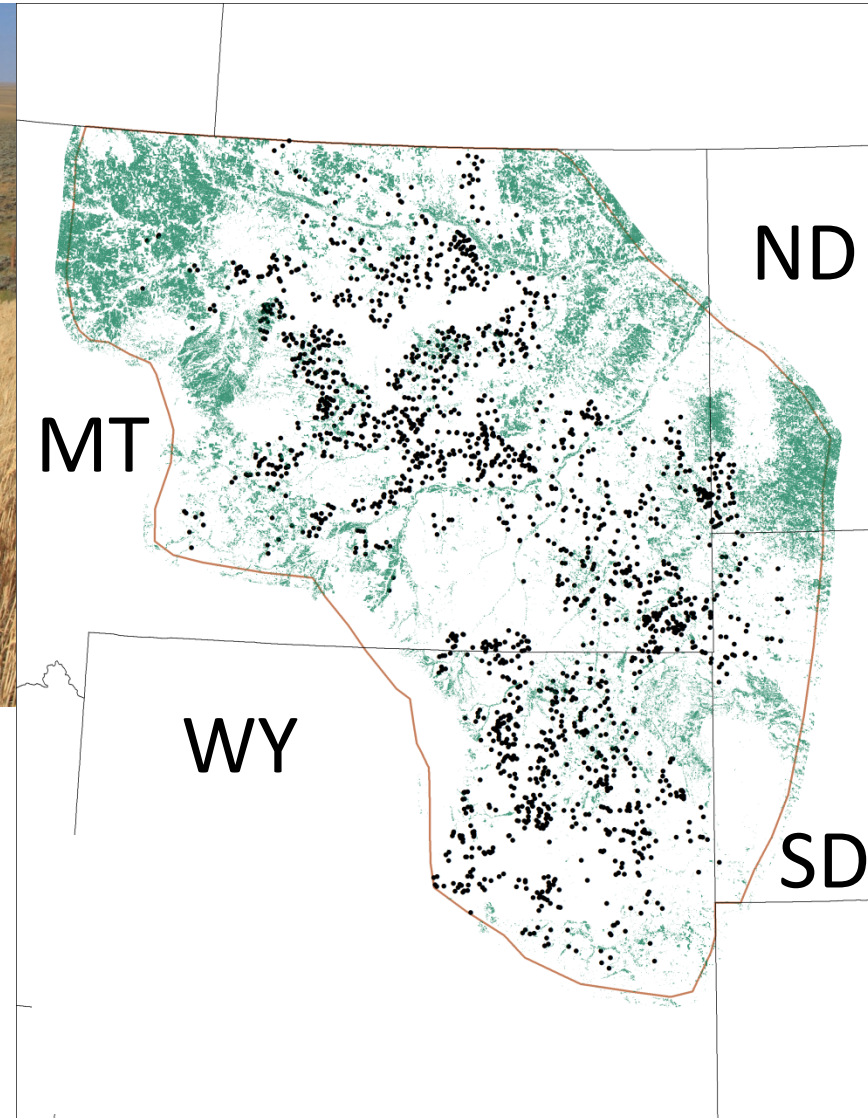
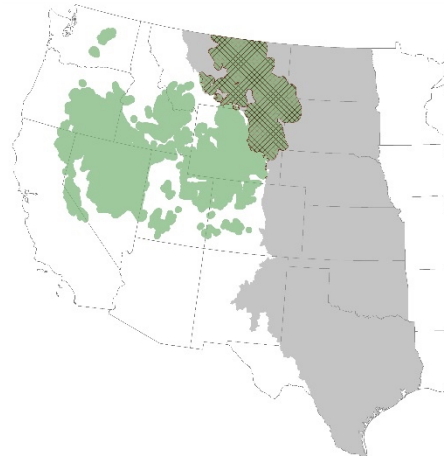
# Reducing Cultivation and Subdivision Threats



# Cultivation in Sage-Grouse Management Zone I

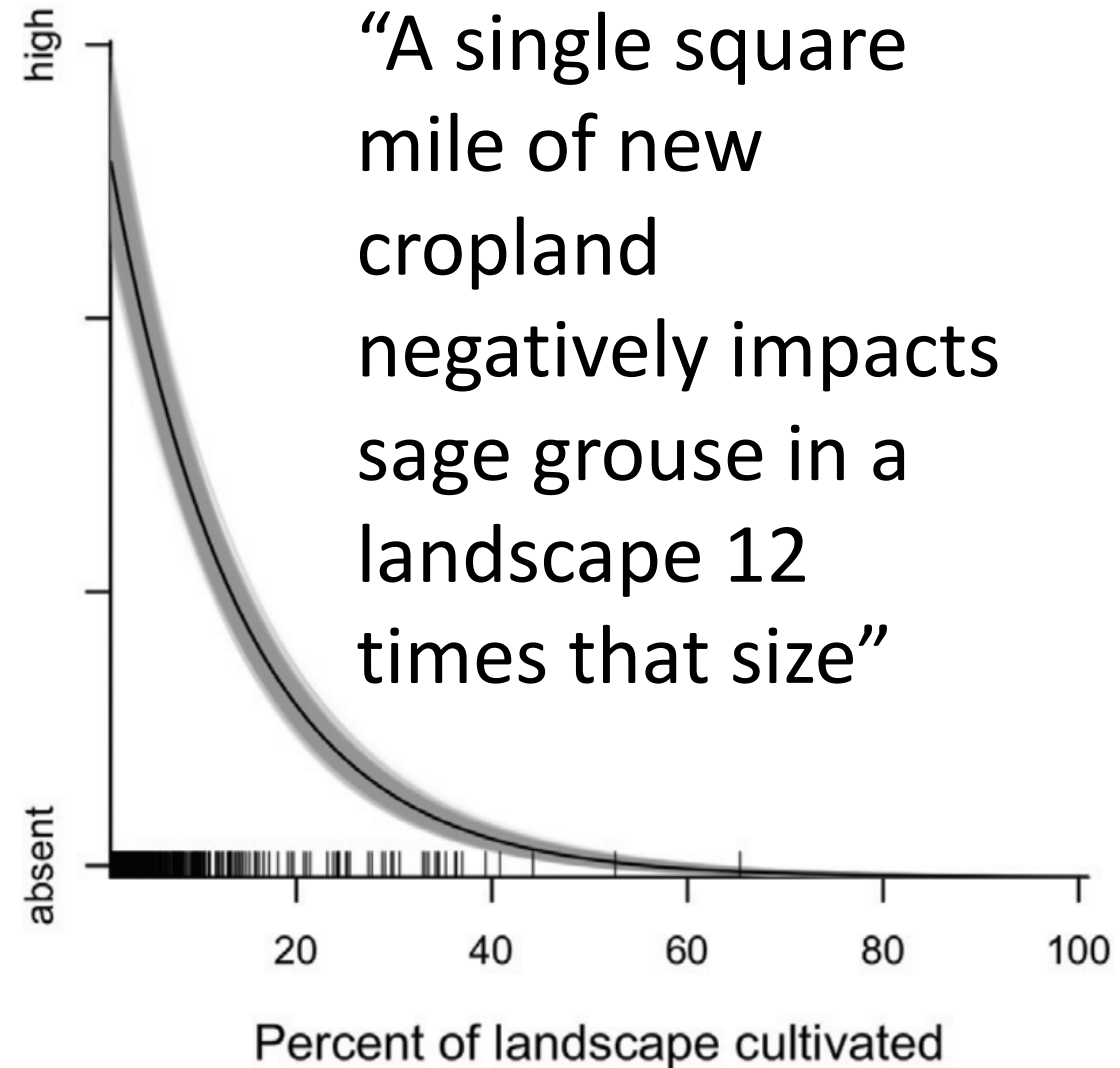
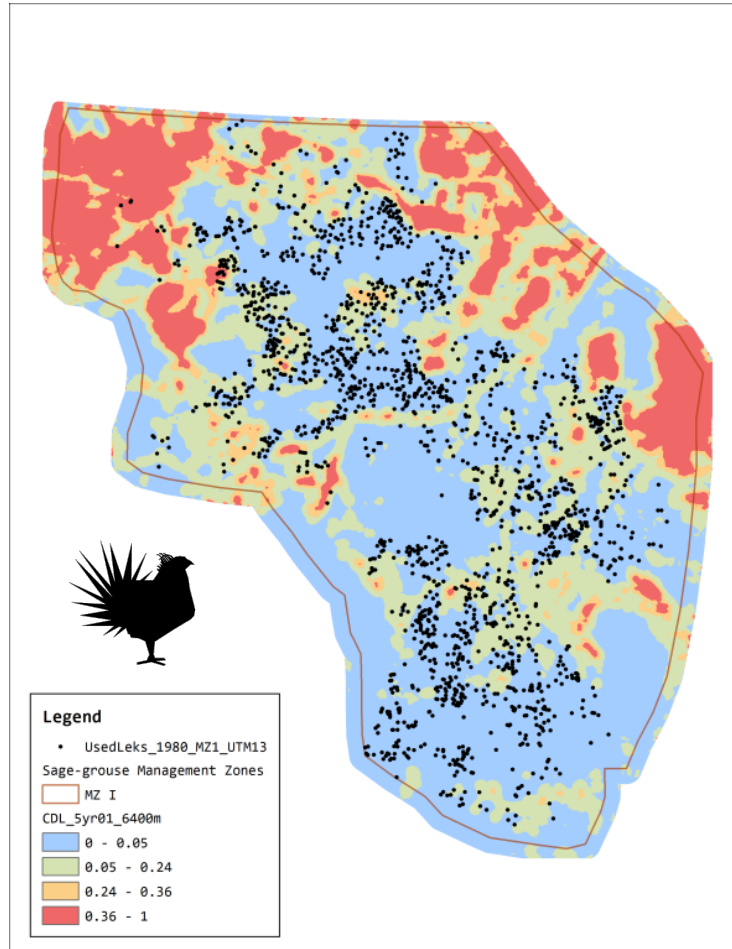


Hatched  
area is  
overlap  
between  
initiatives





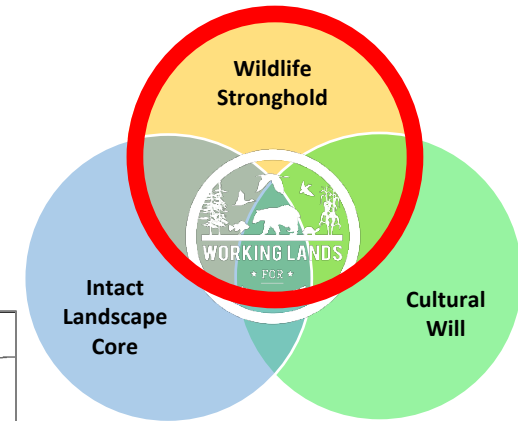
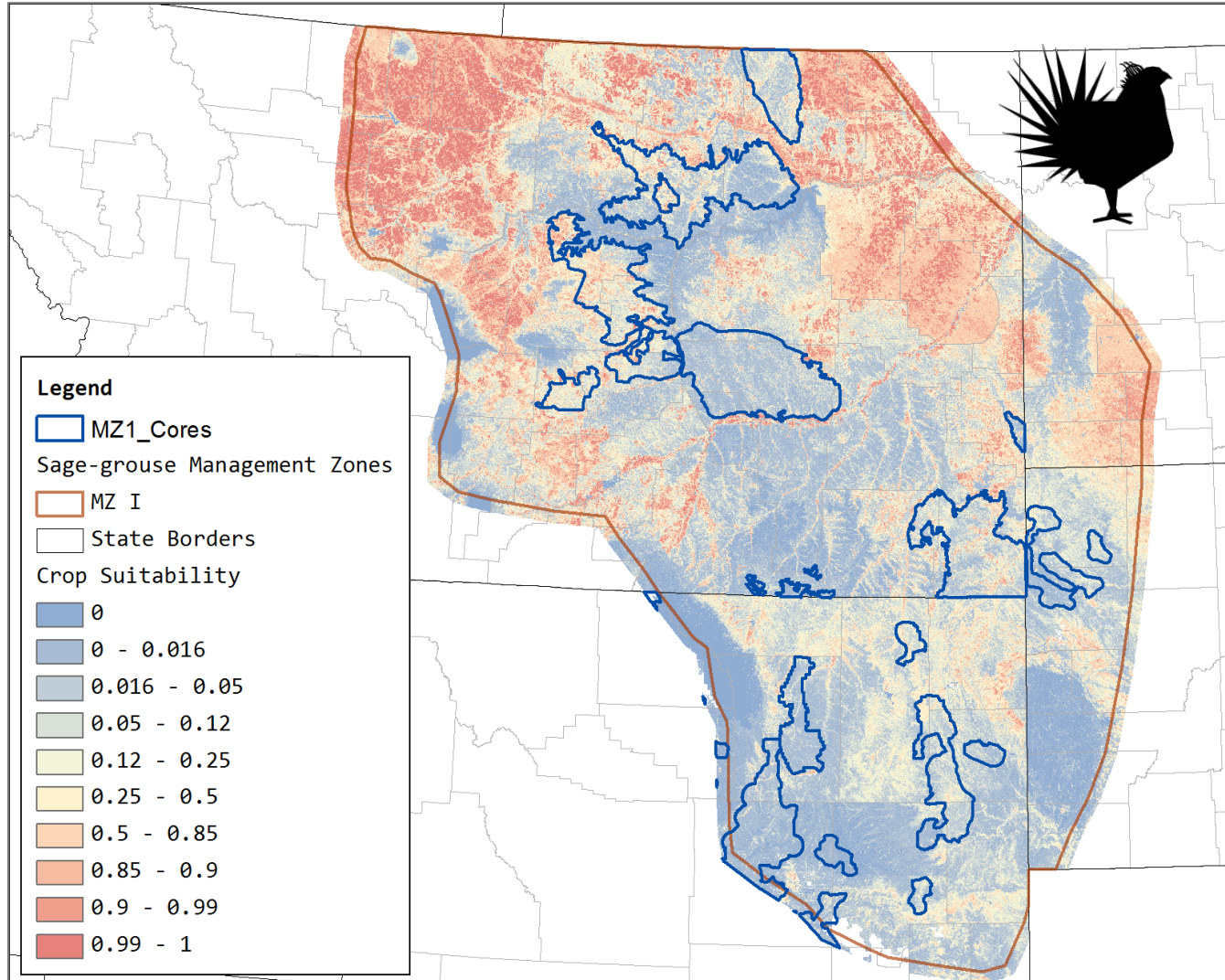
# Decision Support





# Mindset for Strategy Development

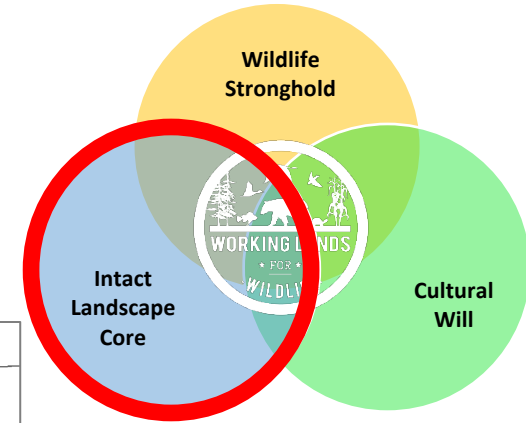
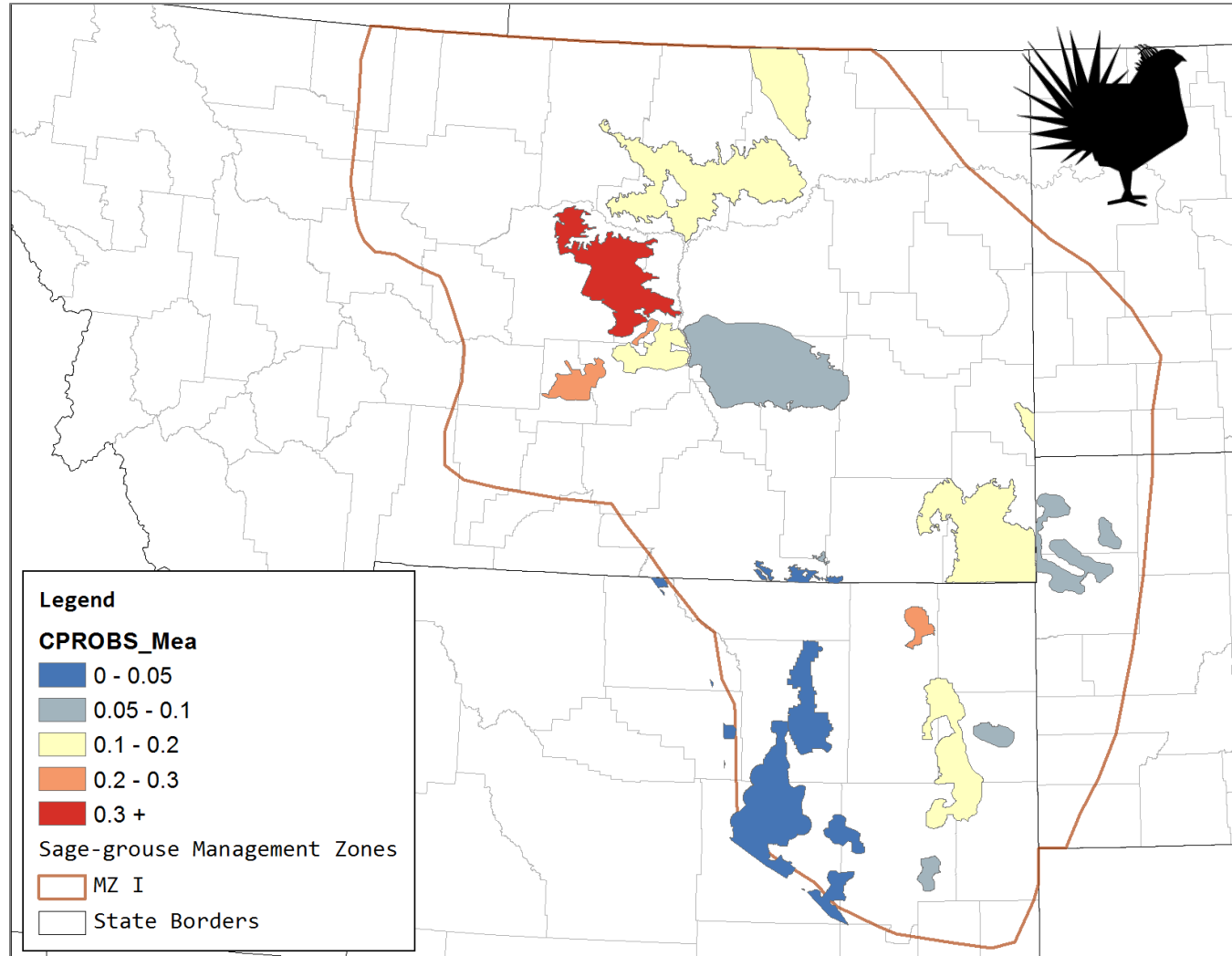
## 1. Identify Wildlife Strongholds





# Mindset for Strategy Development

## 2. Prioritize Cores by Risk





# Mindset for Strategy Development

## 3. Assess Cultural Will



Kyle Tackett, Partnership Liaison NRCS Montana  
SGI State Lead

### Montana ALE NUMBERS AT A GLANCE

**191,575 acres**

protected through ACEP-ALE  
under 2014 Farm Bill

**31% of 2014 Farm Bill ALE  
acres nationwide**

**18 ALE Applications**

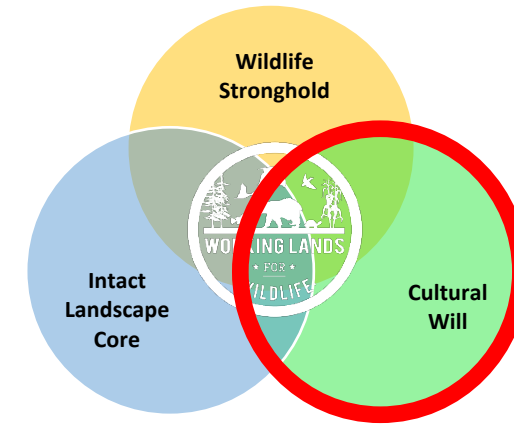
submitted by Montana land trusts  
in FY19

**Totalling \$25.6 million  
in Federal requests**

**\$17,769,054**

obligated to Montana ALE  
projects in FY19,  
the largest ACEP-ALE  
allocation in the country

**37,769 acres will be conserved  
with FY19 allocation**



## Mindset for Strategy Development

### 3. Assess Cultural Will

## Key Points from Montana

Outreach/Education

Capacity

Relationships

Deliver

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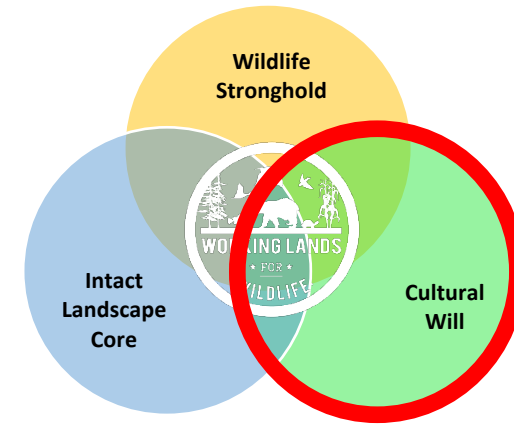
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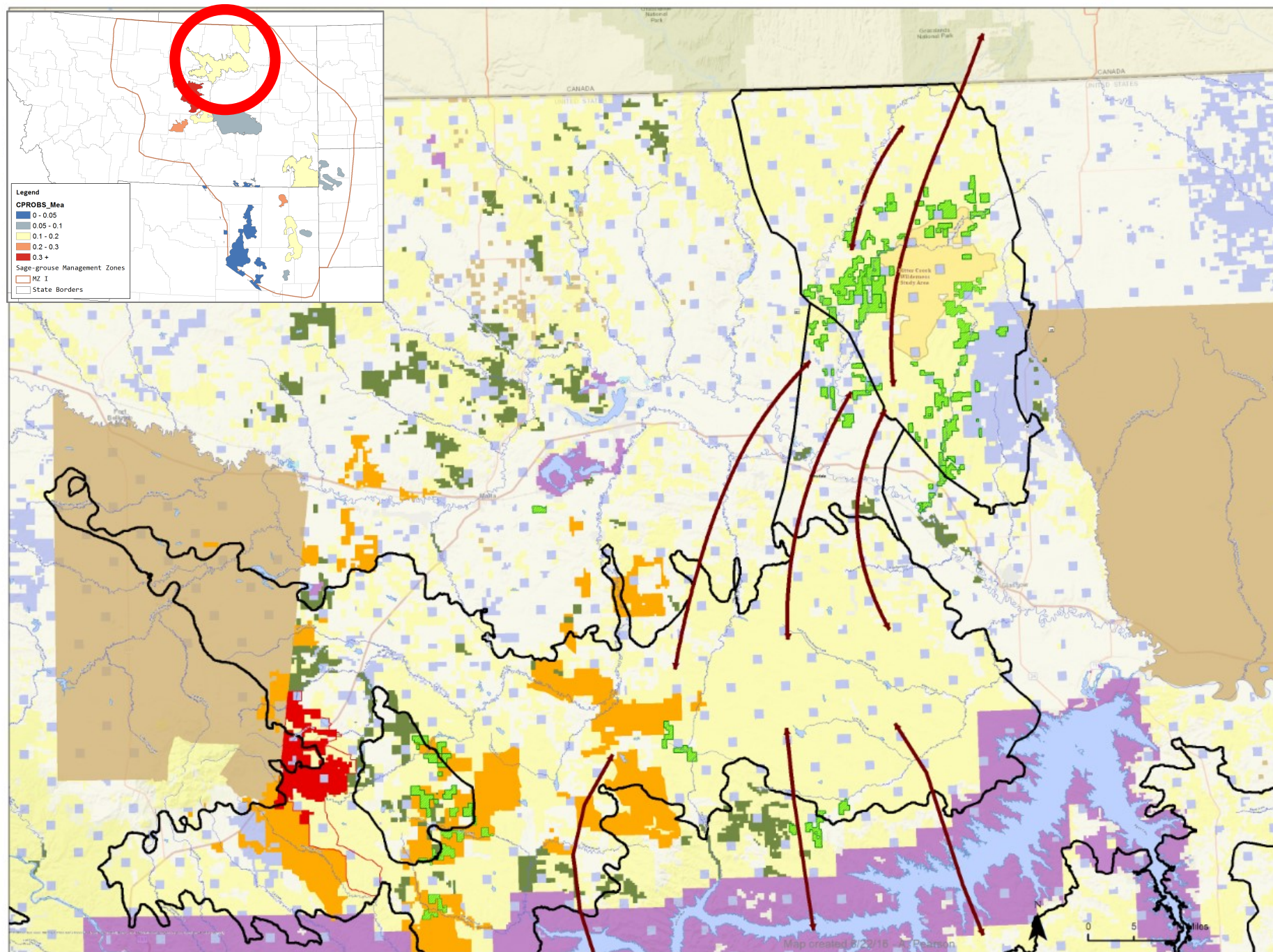
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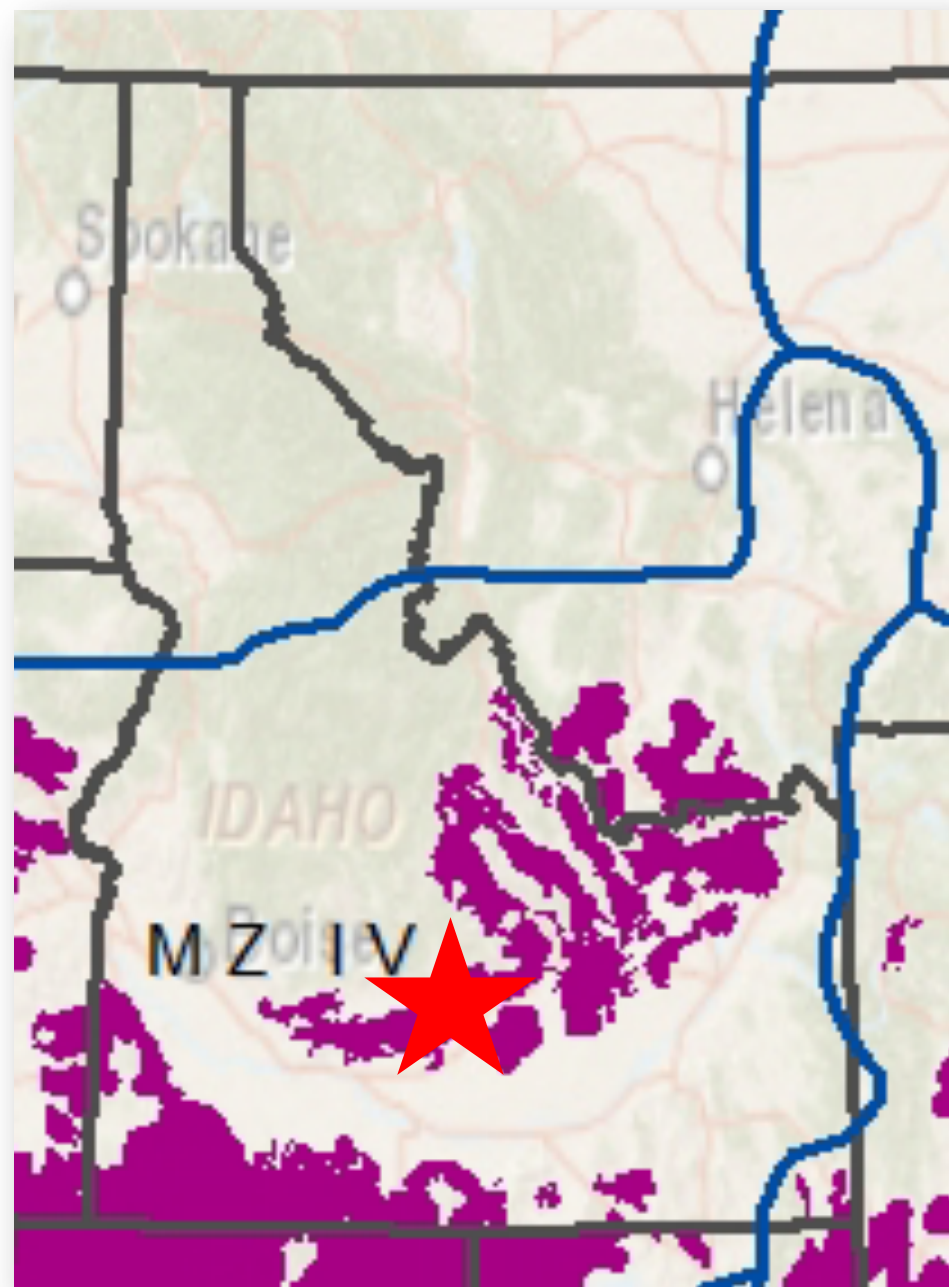
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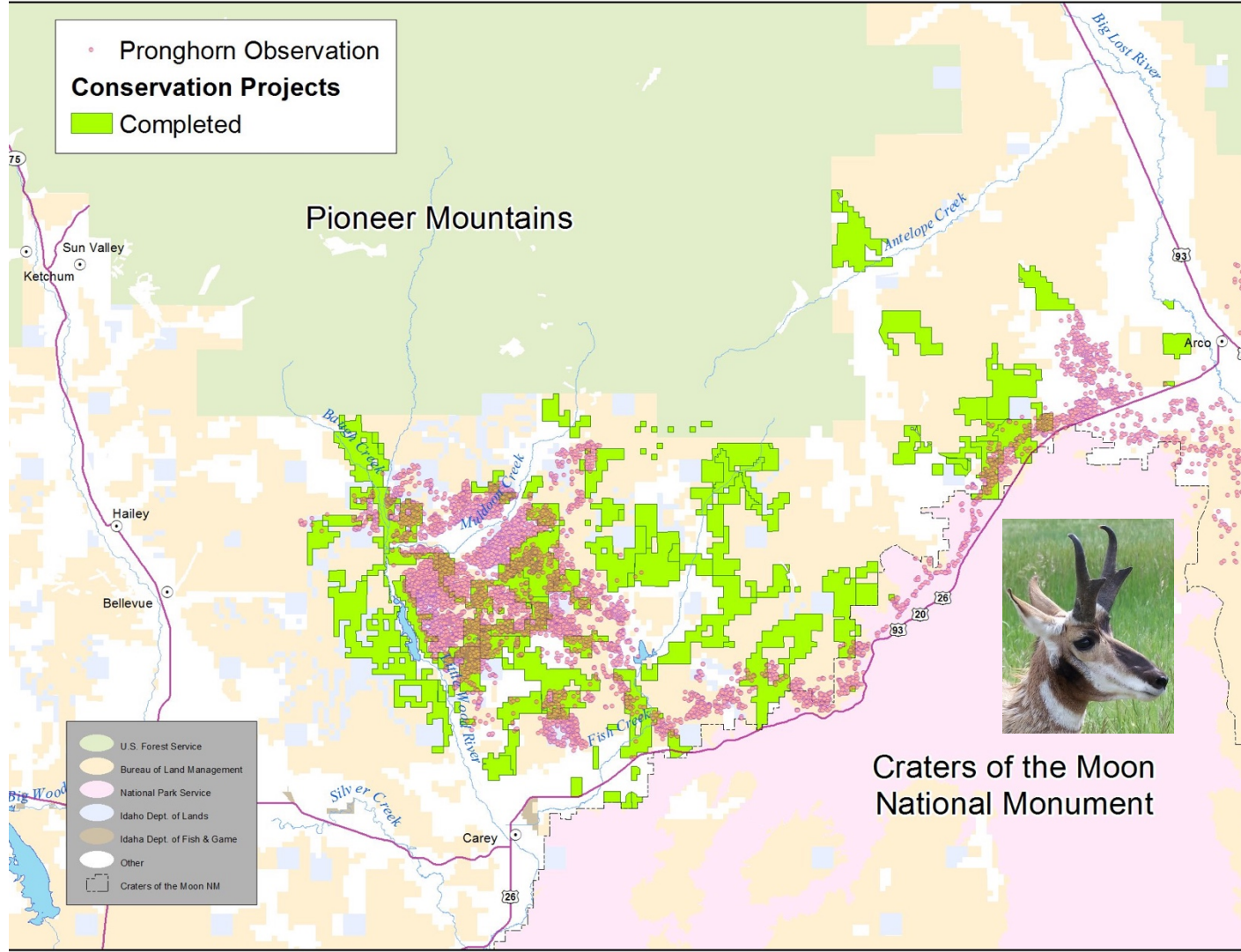


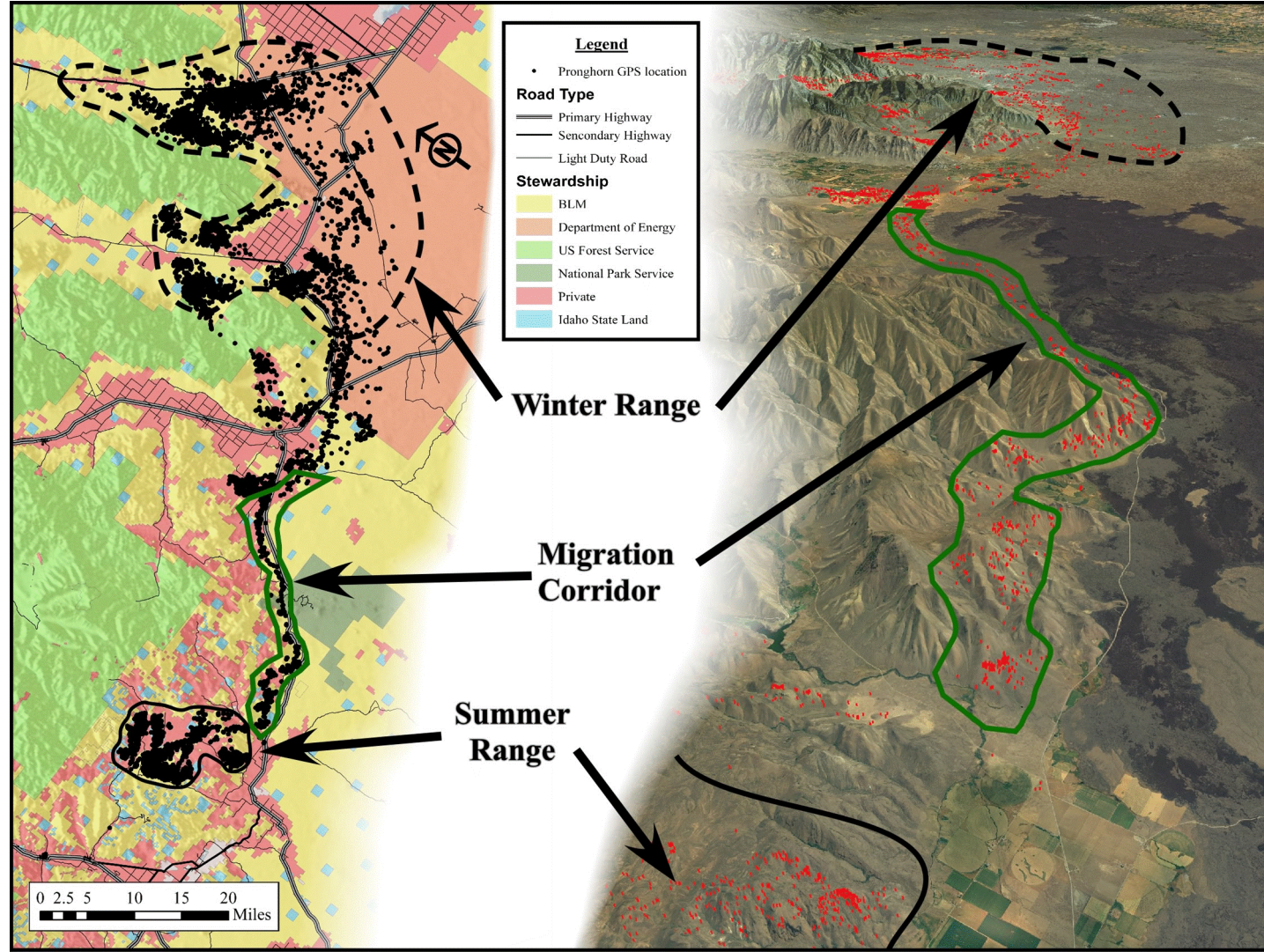














# Additional Resources

Easements reduce subdivision threat in Wyoming  
*Featuring Wyoming ranching community (video)*



<https://www.youtube.com/watch?v=V1VPWuTHJ7U&feature=youtu.be>

How do conservation easements work  
*with NRCS's Lisa McCauley (Ask an Expert)*



<https://www.sagegrouseinitiative.com/conservation-easements-work/>

Montana easements conserve grouse migration  
*with links to TNC's Brian Martin (article)*



<https://www.sagegrouseinitiative.com/new-easements-montana-protect-longest-known-sage-grouse-migration-corridor/>