



# Empowering our collective futures: *Wildlife conservation through sustainable ranching*

**David Naugle**

University of Montana, Wildlife Biology Program

With special thanks to:

**Laura Nelson**, Laura Nelson

**Marisa Sather**, FWS Partners

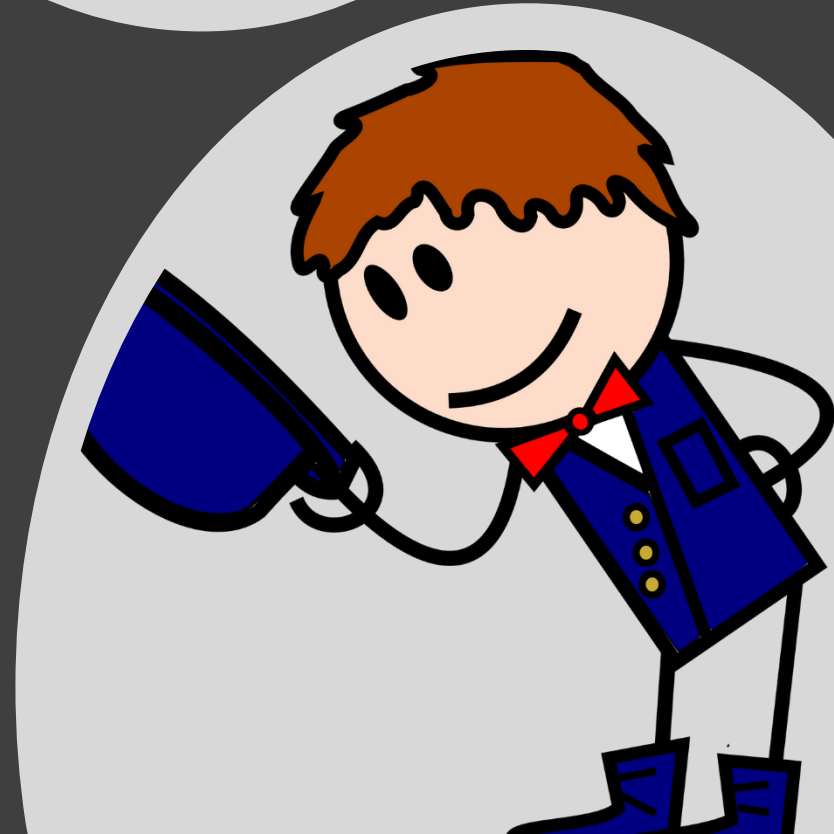
**Kyle Tackett**, NRCS Montana

**Matthew Jones**, University of Montana

# RSA Leadership



Add my 'hat's off'  
congratulations to RSA  
as the 2020 recipient of  
the FWS regional  
Director's Award for  
excellence in private  
lands conservation



Ranching is the glue that holds together  
large and intact landscapes



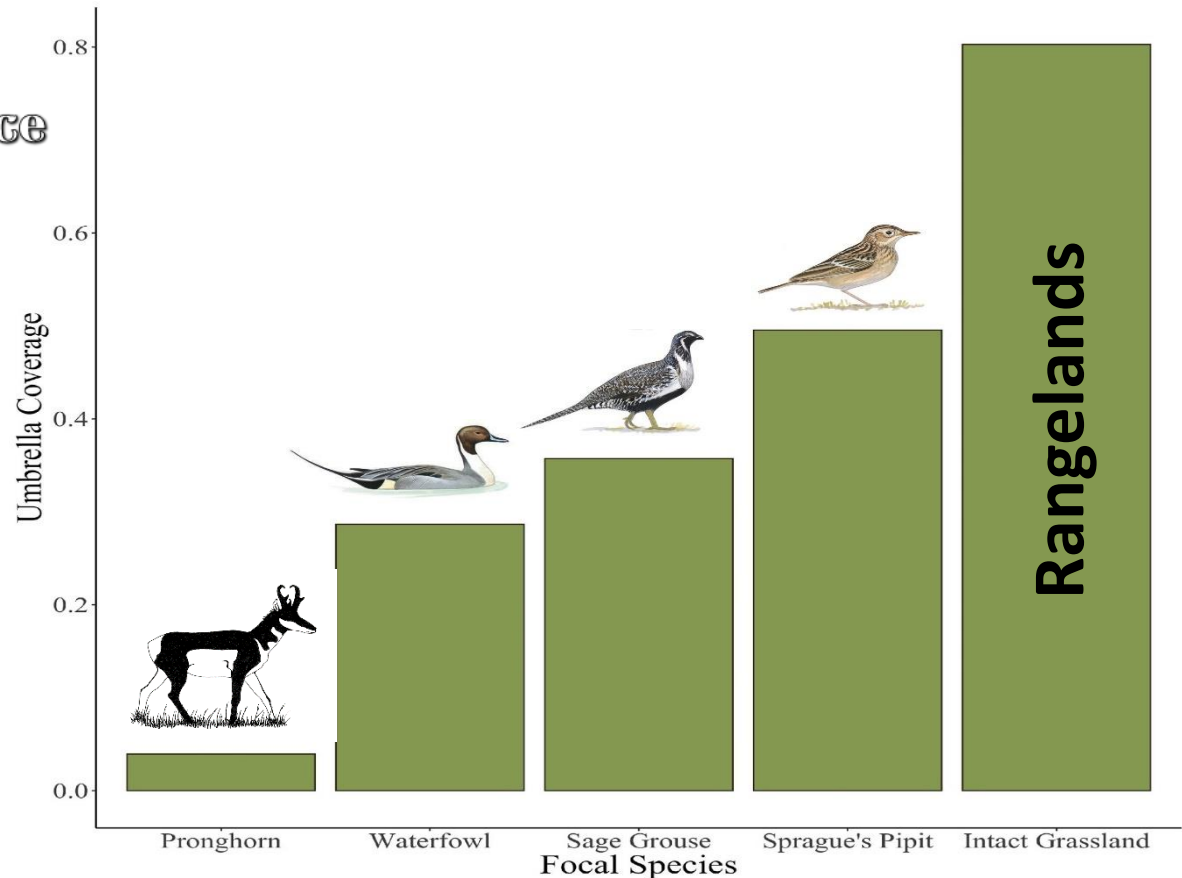
Conservation will ultimately boil down to rewarding the  
private landowner who conserves the public interest –  
Aldo Leopold, Father of Modern Conservation



# Science aligns with RSA's mission

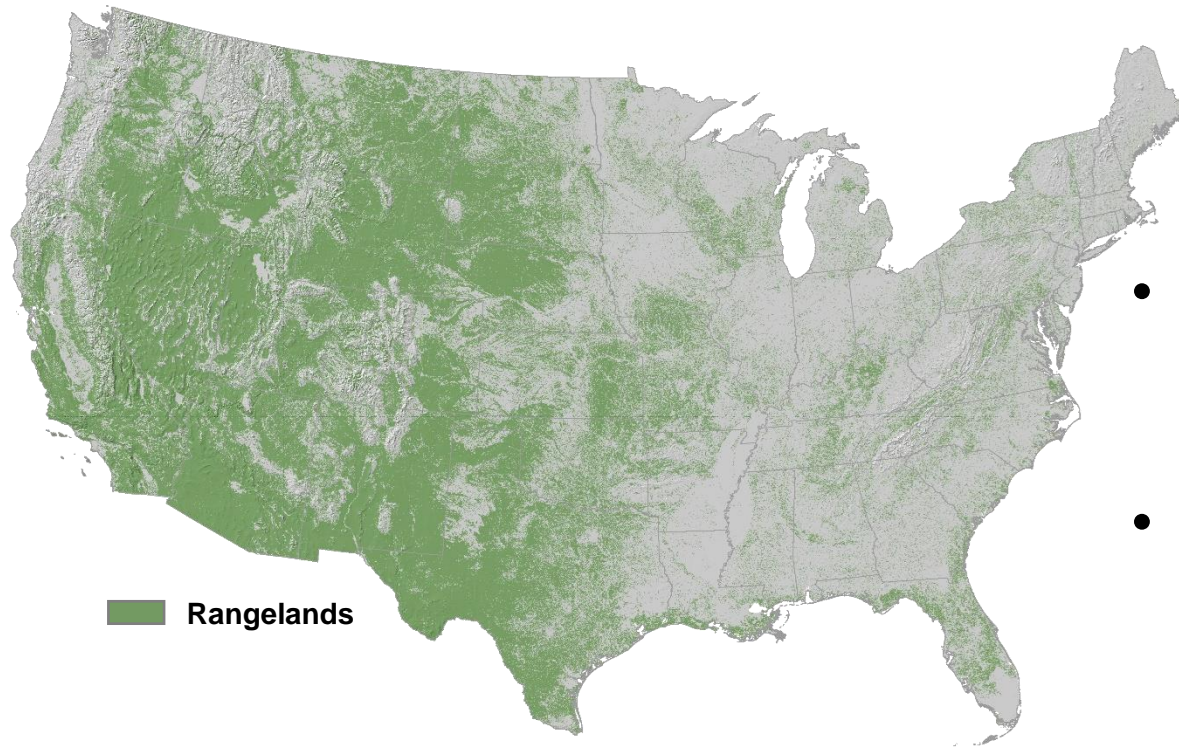


RSA promotes the ecological, social and economic conditions that sustain biodiversity...



**Intact grasslands are the best umbrella for multi-species conservation**

# The future for rangelands is promising!



- Rangelands cover a third of the nation
- 2/3 of rangelands are privately owned

**Rangelands conservation is entering a renaissance**

**Incumbent upon us to innovate big enough and fast enough to meet the challenge!**

# Conservation Frameworks

NRCS renews its commitment to working rangelands conservation



NATURAL RESOURCES CONSERVATION SERVICE  
WORKING LANDS FOR WILDLIFE

A FRAMEWORK FOR  
**CONSERVATION ACTION** IN THE  
**SAGEBRUSH BIOME**

2021 - 2025







Rangeland Inventory Monitoring ... gov



Rangeland Monitoring I Cooperative ... extension.arizona.edu



What is Rangeland Monitoring? - YouTube youtube.com



Rangeland Production Monitoring S... fs.usda.gov



Rangeland Monitoring - YouTube youtube.com



Rangeland Monitoring - Santa Fe Ranch ... santaferanchfoundation.org



Rangeland Resource Commission nge.org



Rangeland Monitoring & Improve... tetonconservation.org



Grazing Permittees in BLM Photo Monitoring uidaho.edu



rangeland monitoring - Progressive Cattle progressivecattle.com



Interpreting rangeland monitoring data ... thefencepost.com



Ranch Advisory Partners 159.203.237.232

We must embrace 21<sup>st</sup> century technology to scale up rangeland conservation



# Rangeland Analysis Platform

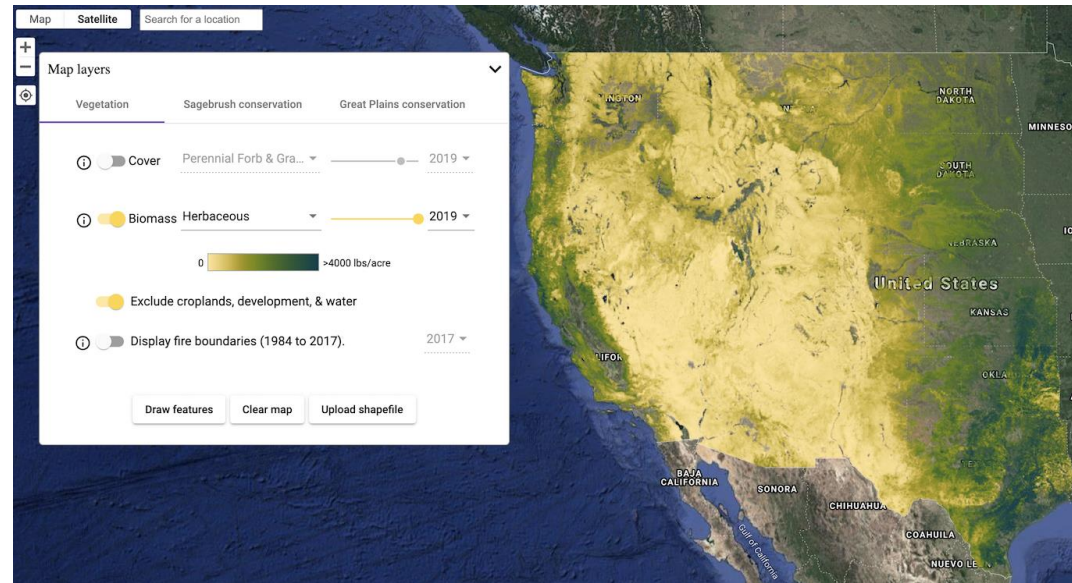
Launch app



## Revolutionizing Rangeland Monitoring

Land management data at your fingertips

Vegetation Cover and  
Herbaceous Production  
across Western U.S.  
Rangelands

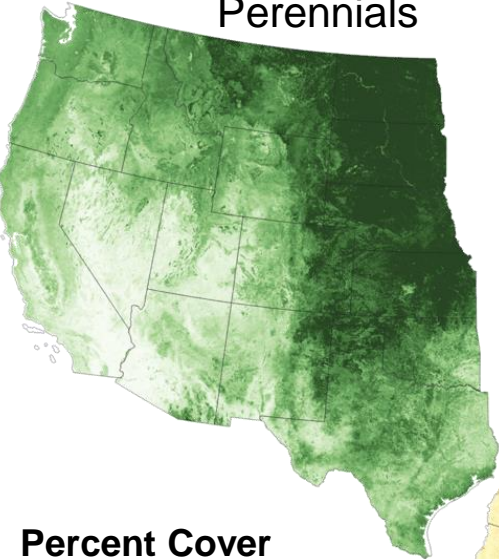




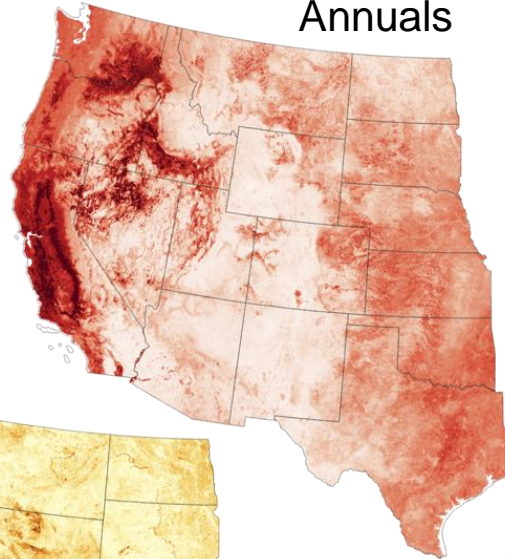
# RAP data - Cover



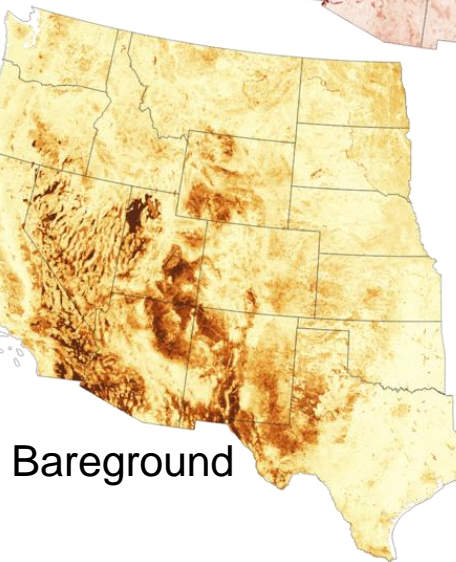
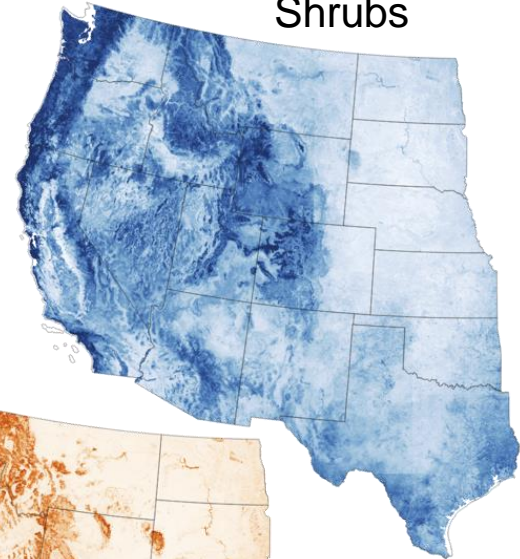
Perennials



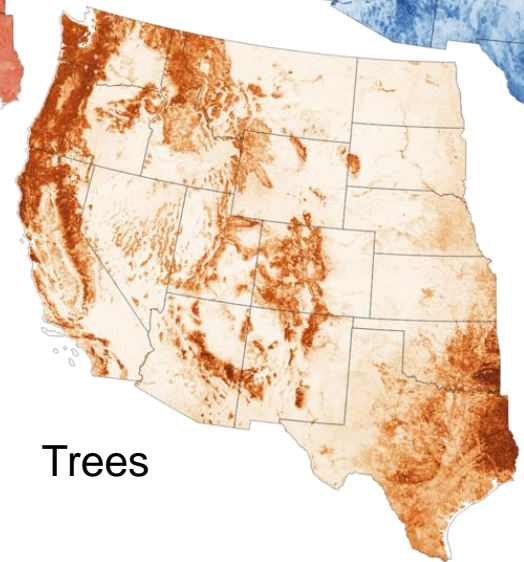
Annuals



Shrubs



Bareground

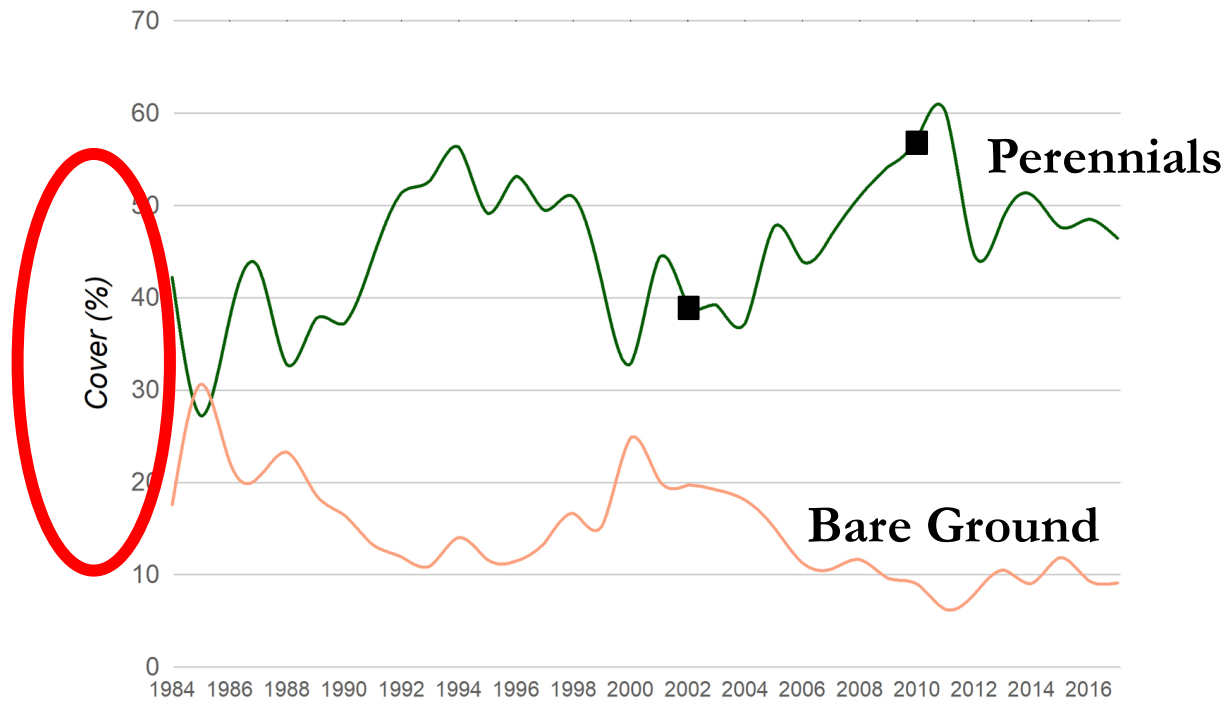


Trees

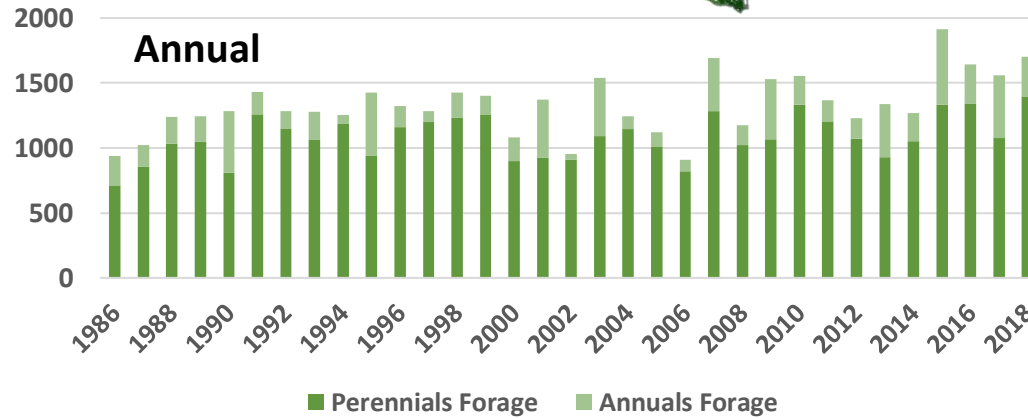
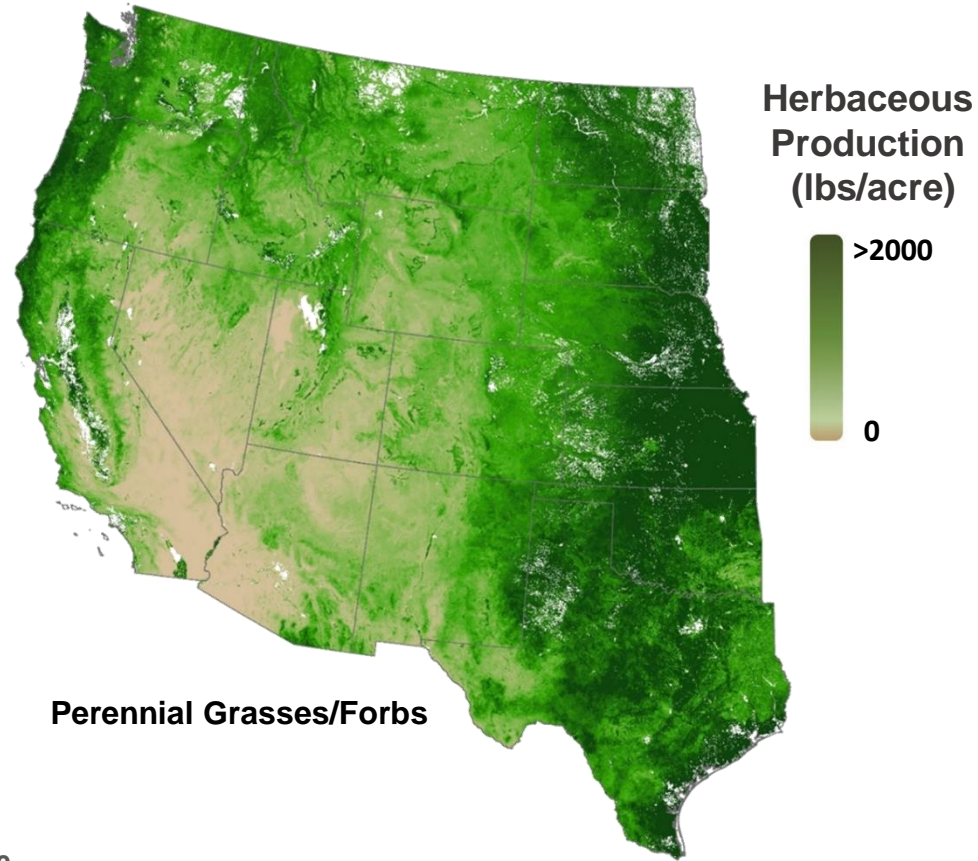
Percent Cover



# Monitoring vegetation on a BLM allotment

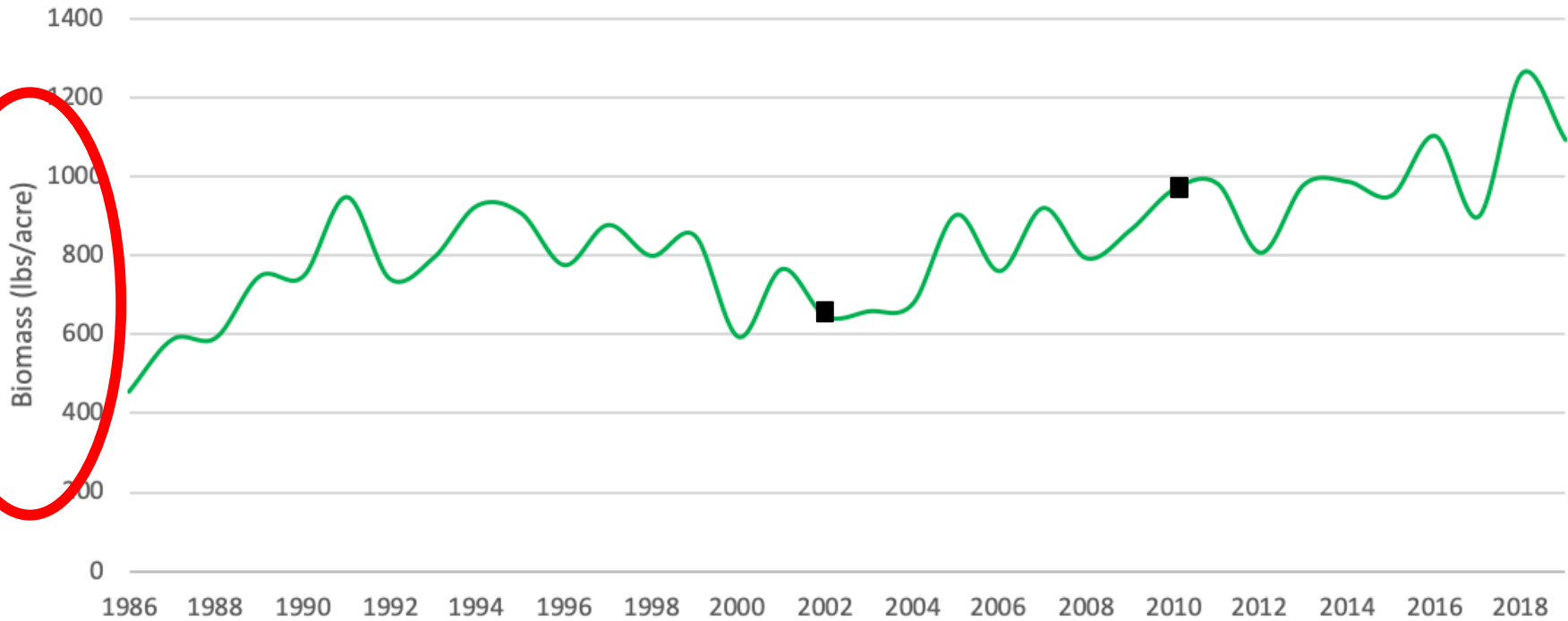
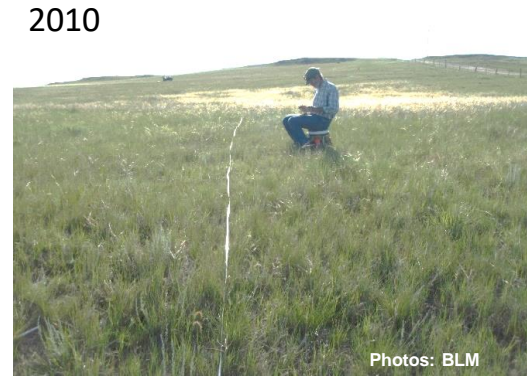


# RAP data - Production

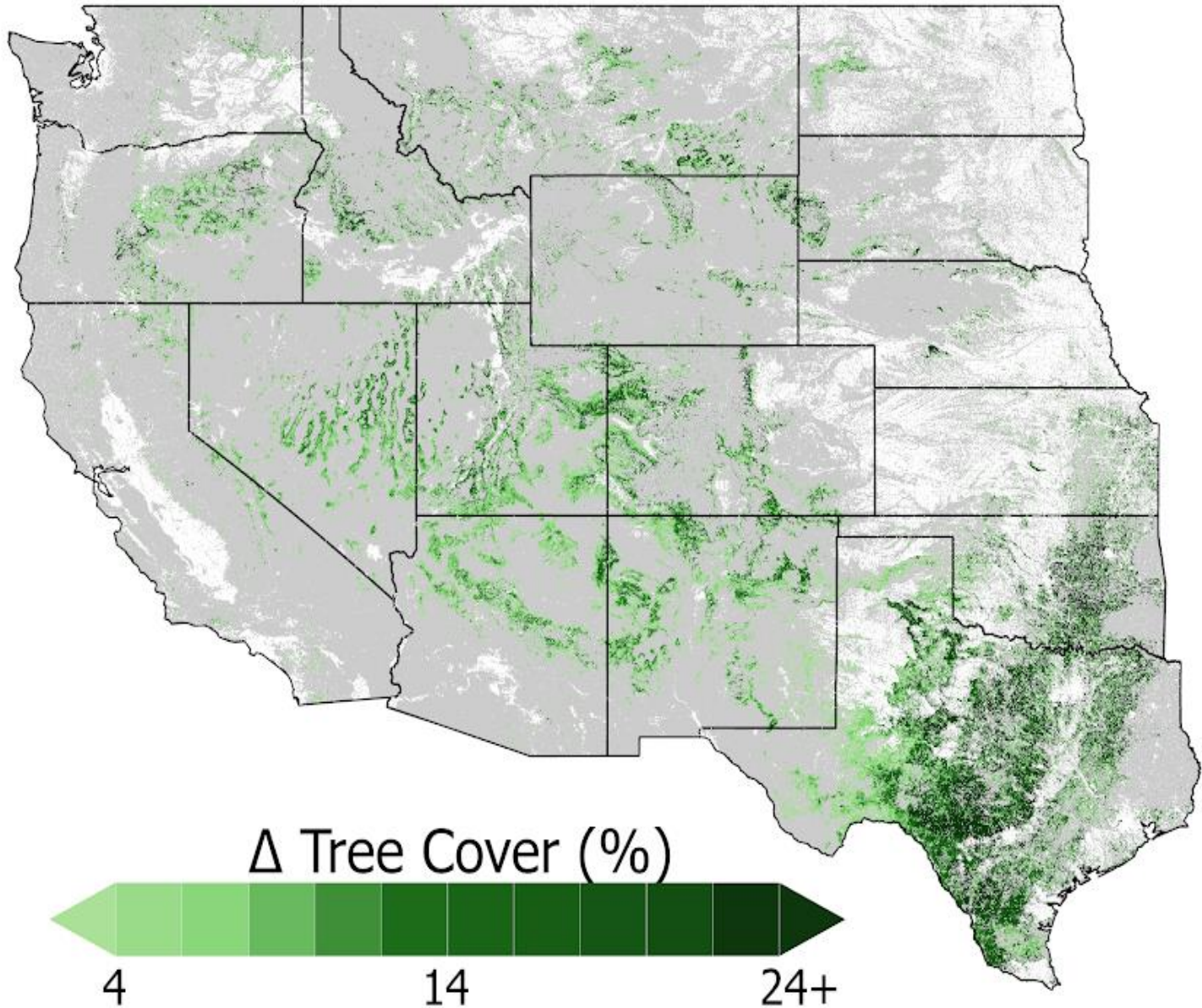




# Monitoring production on a BLM allotment

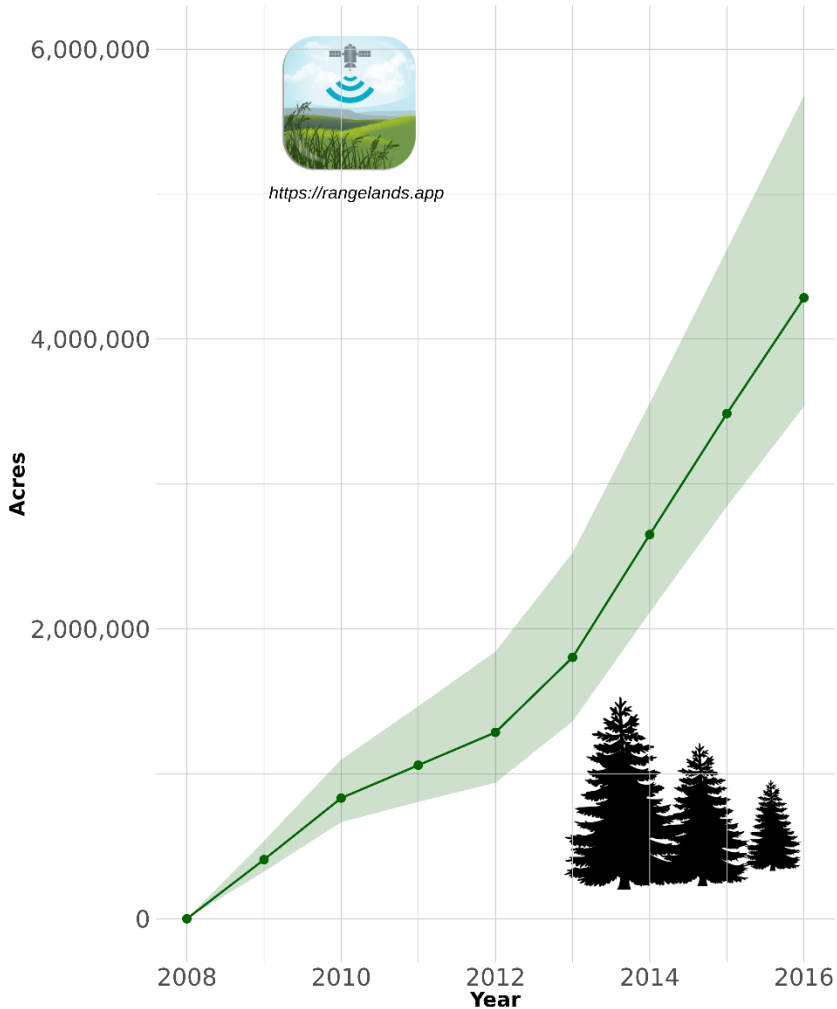


# RAP in Action: Woodland expansion

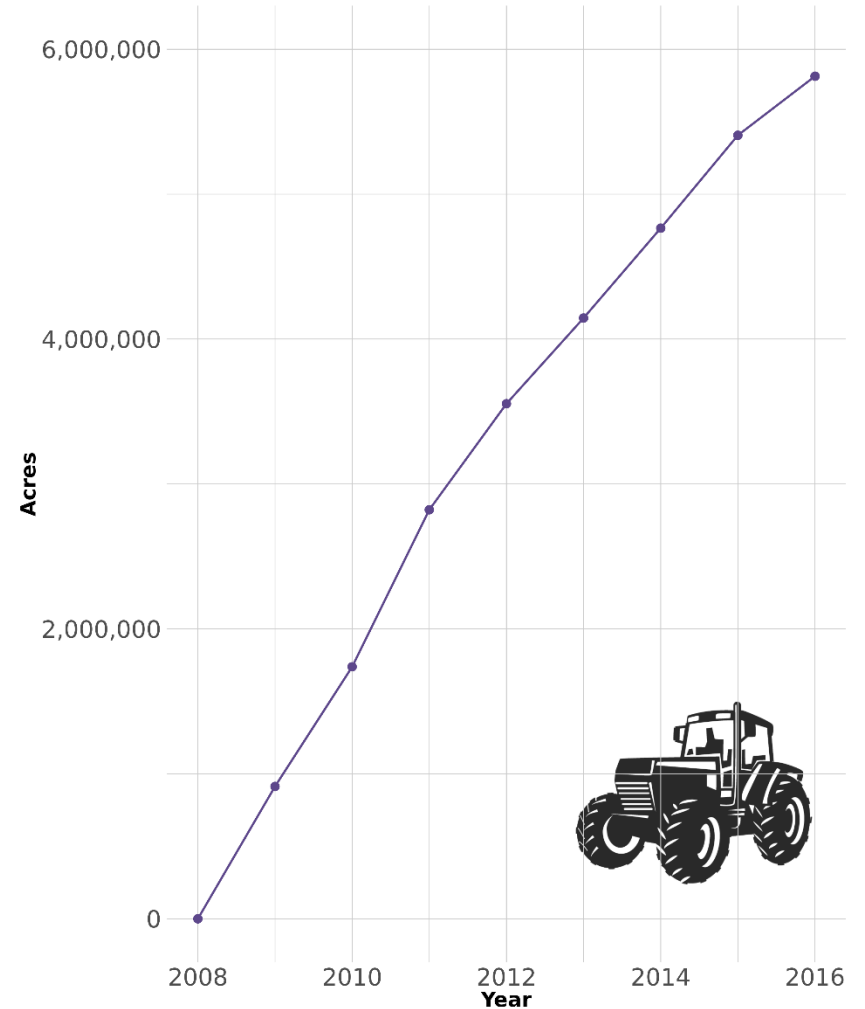


# Rate of grassland loss to woodland expansion is equivalent to cultivation in the Great Plains

## Tree Cover Expansion

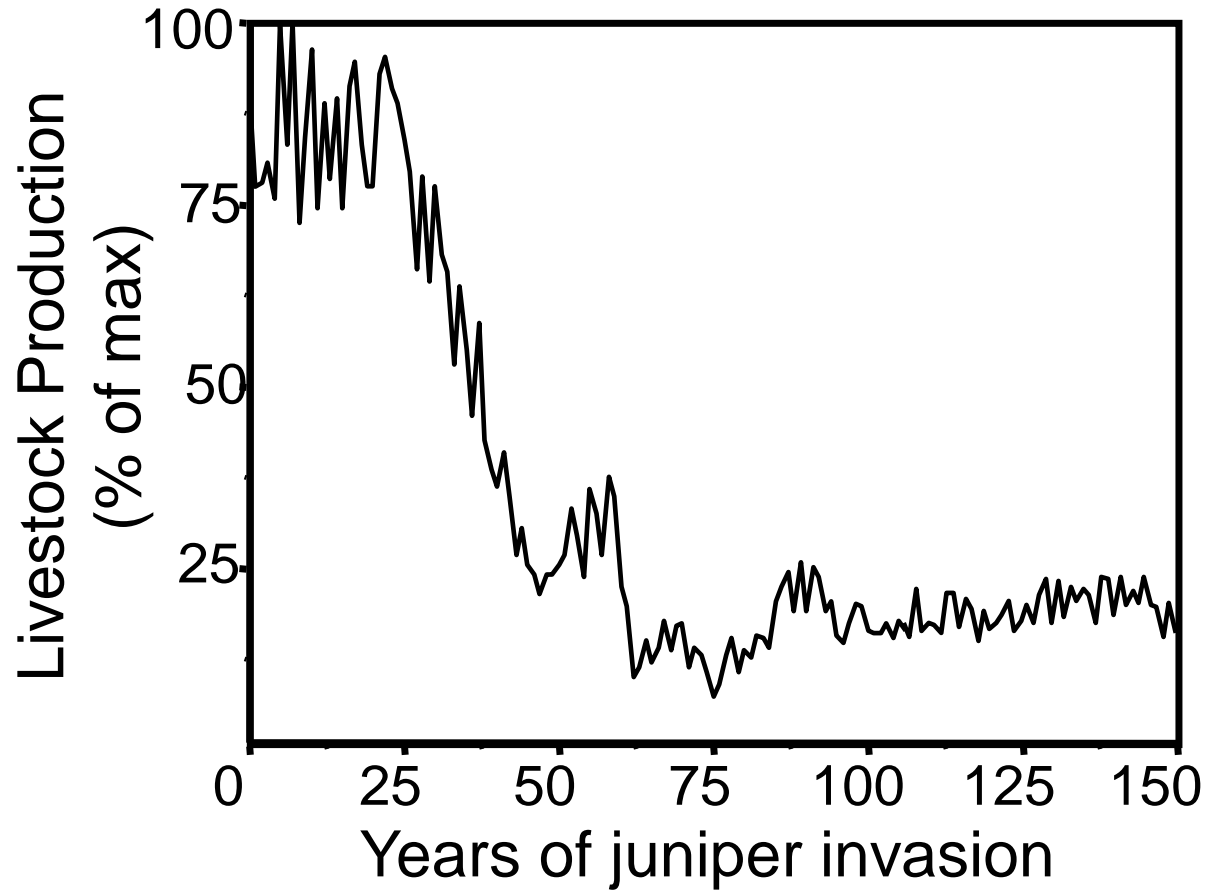


## Agricultural Conversion





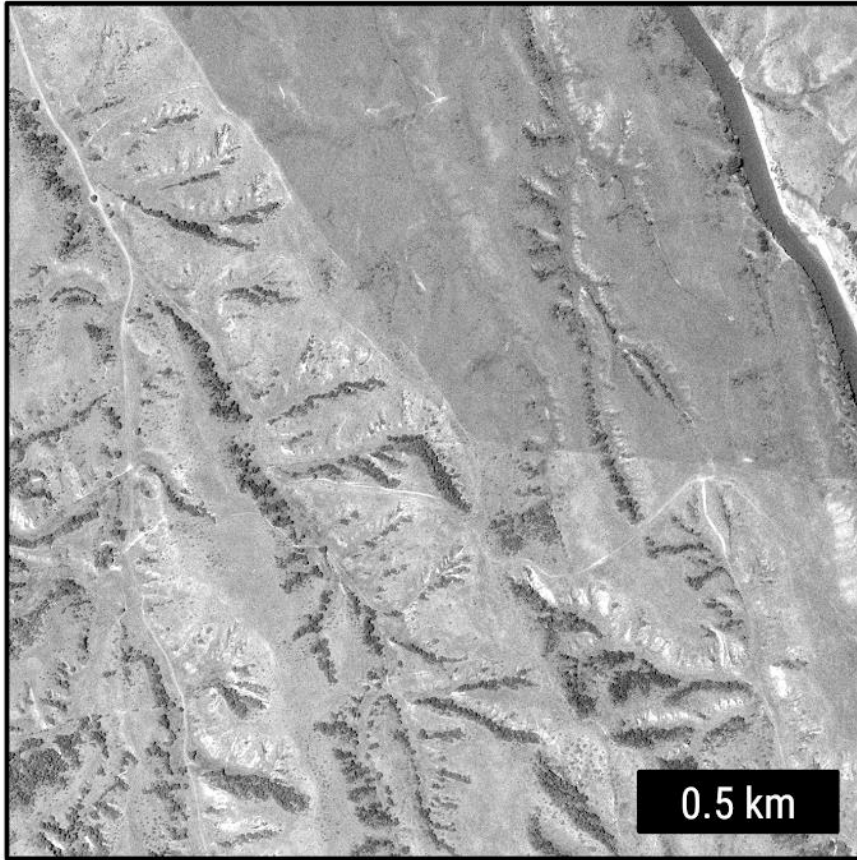
# 80% Historical Stocking Rate Decline



Fuhlendorf *et al.* 2008



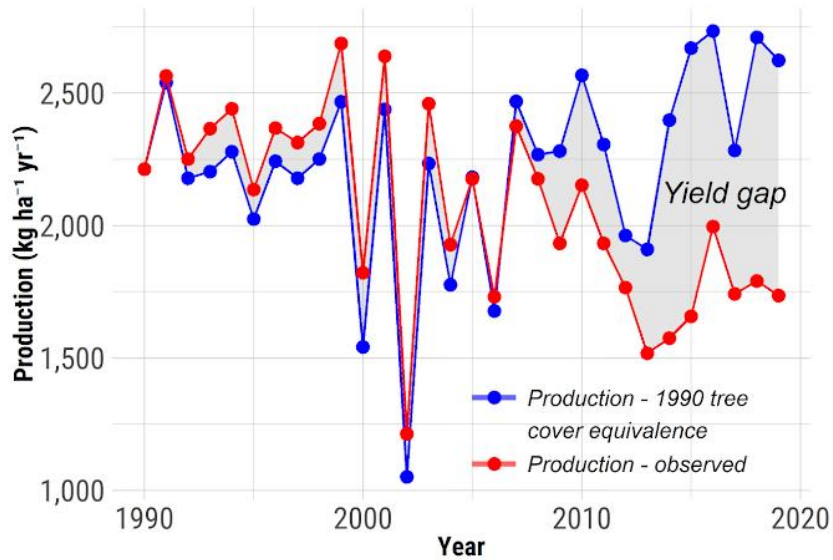
Year: 1992



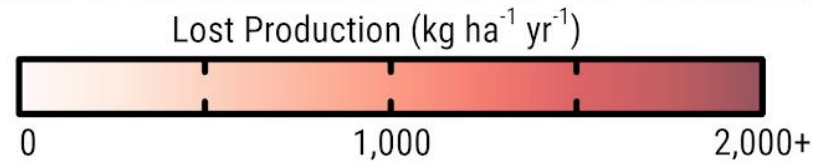
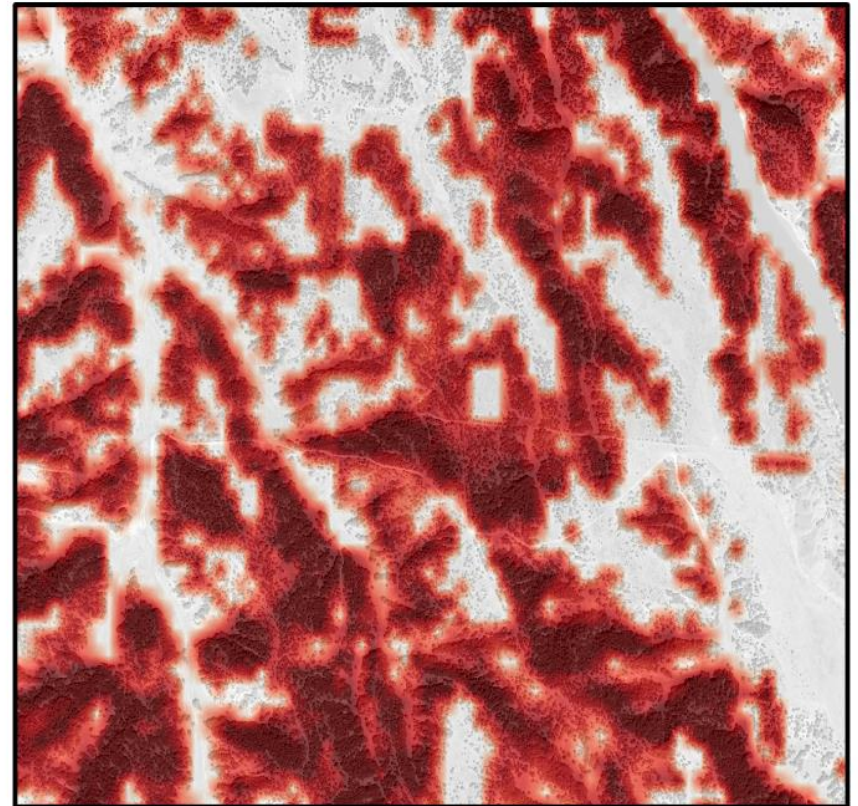
Year: 2018



## Loess Hills in the Great Plains of Nebraska

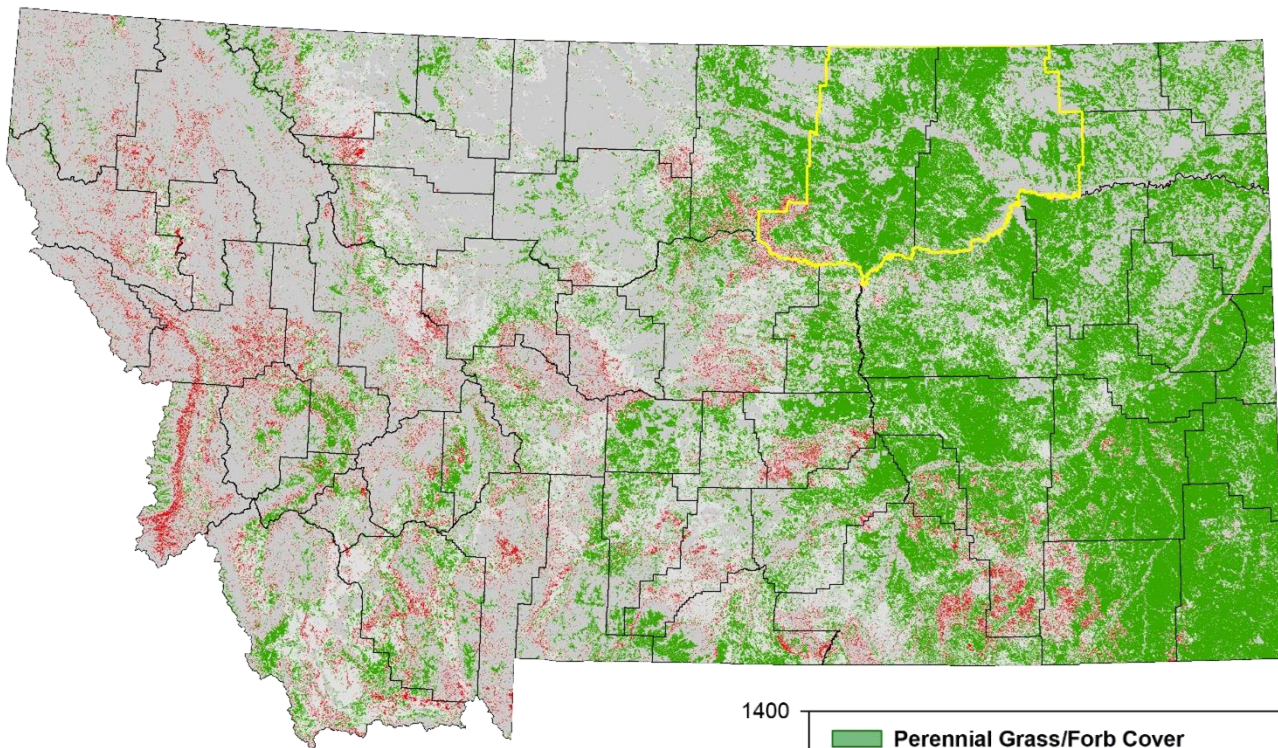


**The Production  
Yield Gap  
\$5 billion loss**



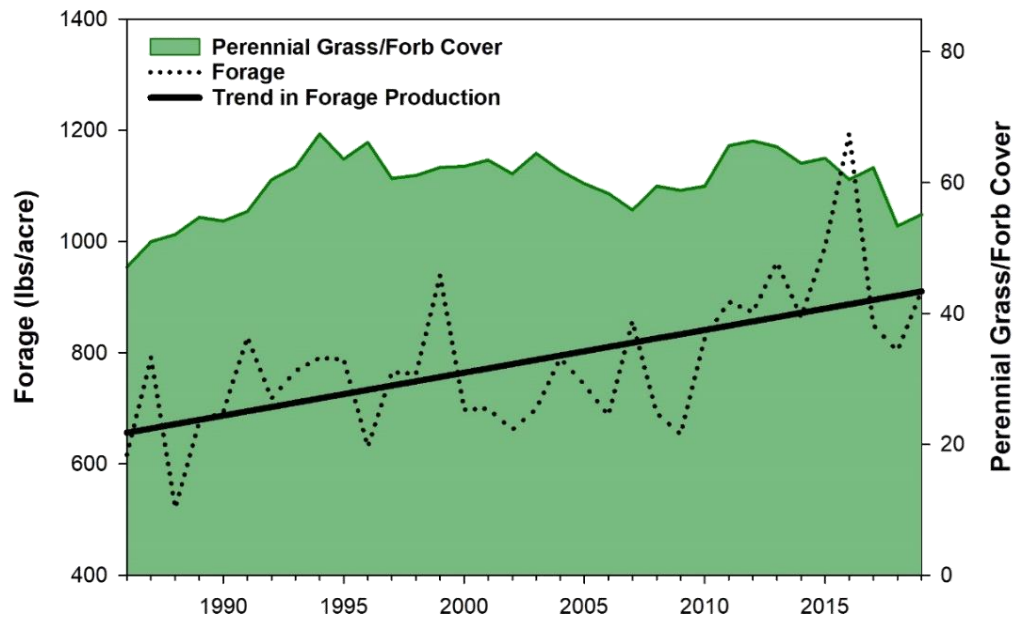


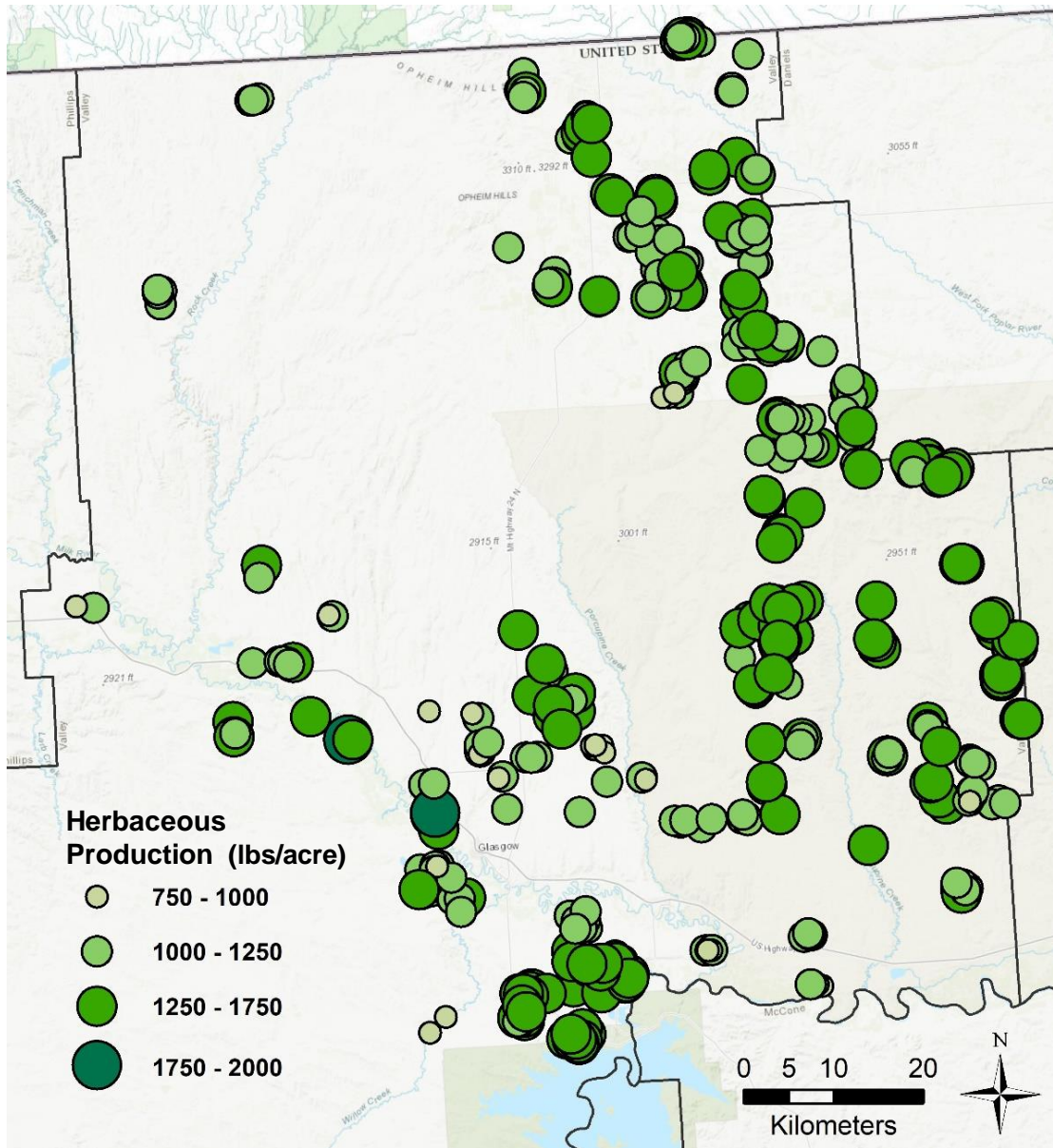
# RAP in Action: Production on the Hi-Line



30 year **positive** and **negative** trends in production

Valley and Phillips Counties  
+40% increase in productivity

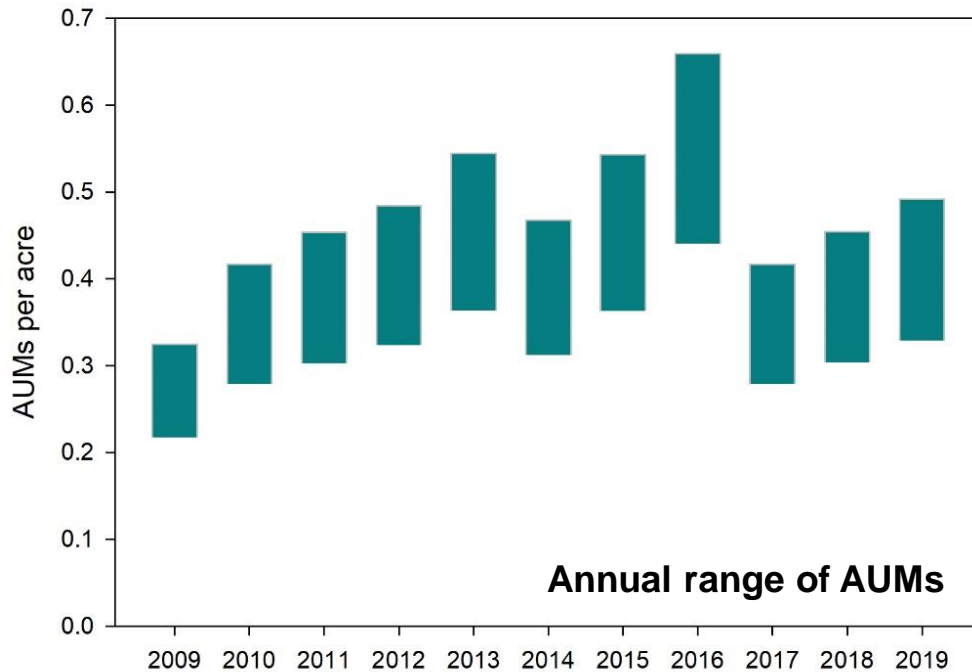




## Expiring CRP

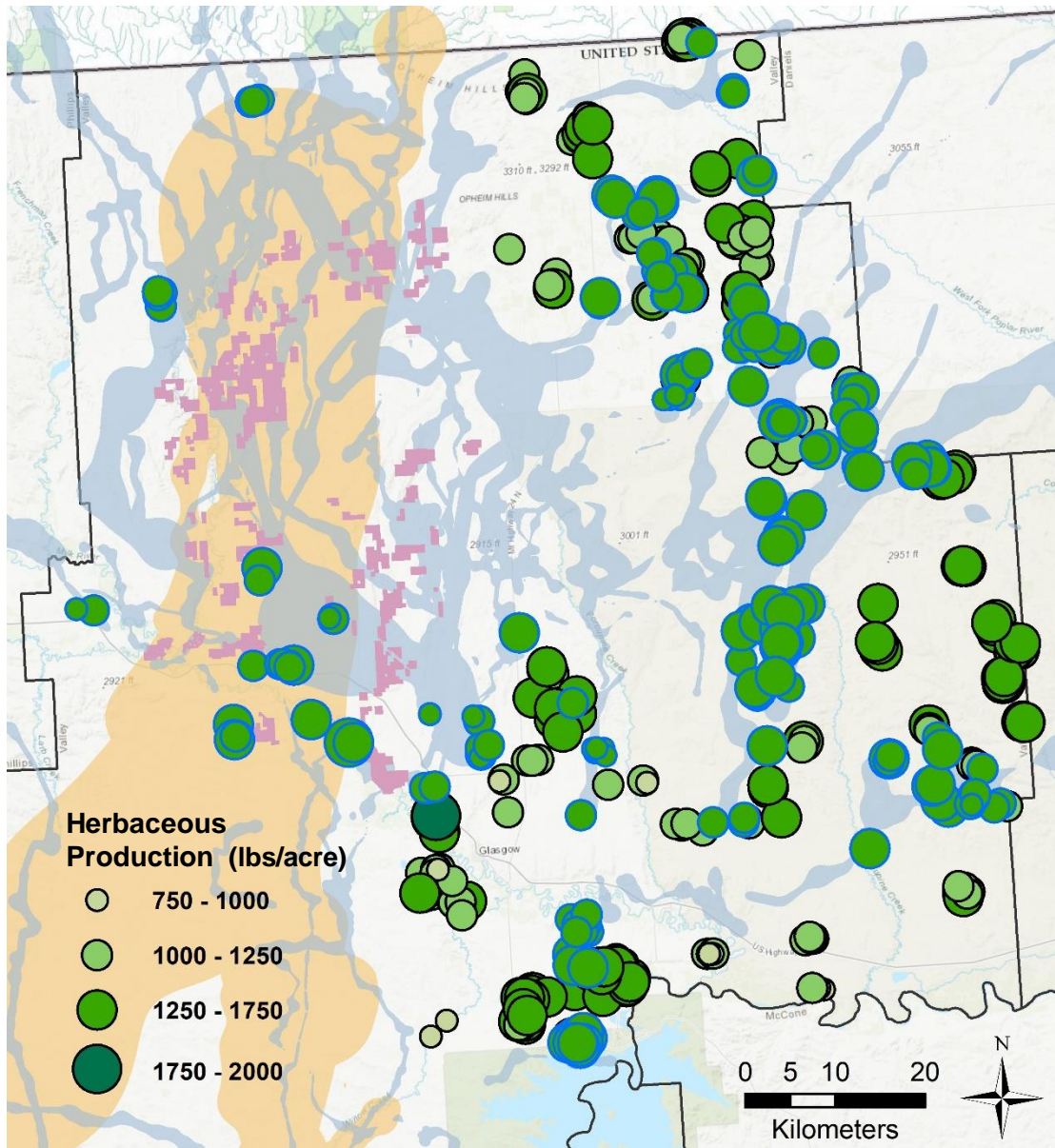
- 500 units previously broken out, enrolled in CRP, with contracts expiring by 2023
- Total 42,776 acres
- Average annual production is 750-2000 pounds per acre

# Value to the Community



- Valley Co. CRP fields average 0.32-0.48 AUMs/acre
  - Valley Co. Soil Survey estimates 0.30-0.51 AUMs/acre
  - CRP annual rental value:
    - 915 lbs per AUM
    - 25% grazing efficiency
    - 42,776 acres of CRP
- = rental revenue of \$500k/yr





Orange Sage Grouse migratory pathways

Blue Pronghorn migratory pathways

Pink Conservation Easements

## Value to Wildlife

- >50% of acres are within sage grouse and pronghorn migratory pathways
- A single square mile of cropland negatively impacts sage grouse in a landscape 12 times in size
- Converting 42,000 acres to cultivation would reduce habitat quality on a half million acres

# A domino effect of beneficial outcomes

