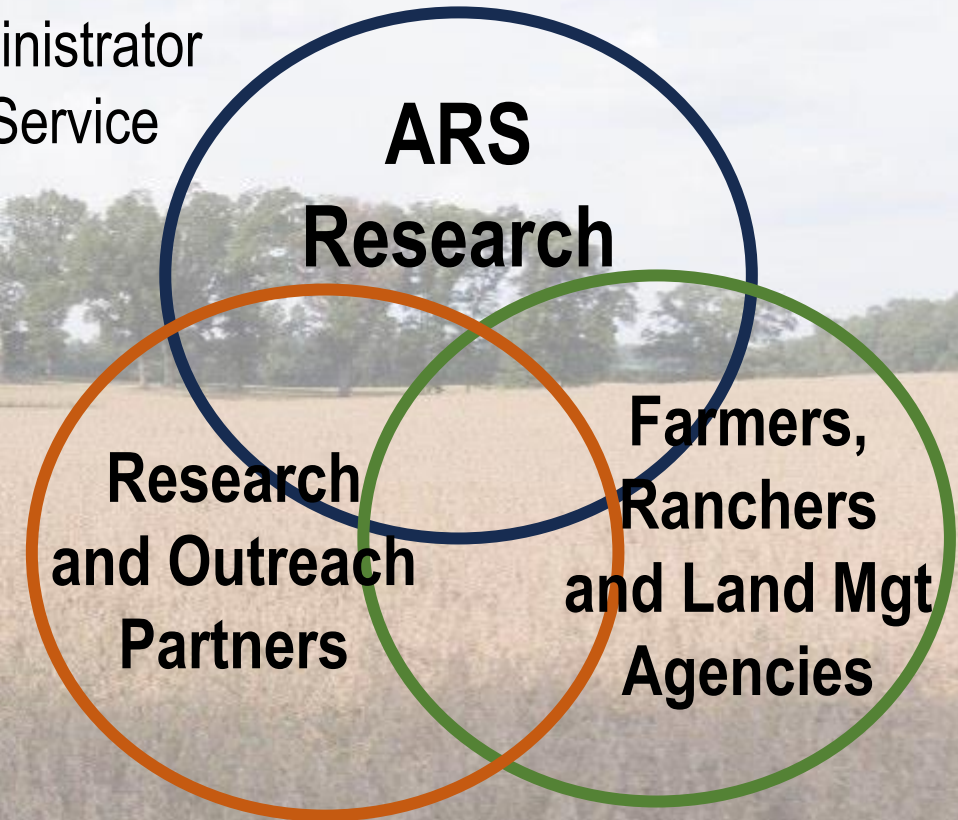


# Agriculture Living Labs across LTAR and other USDA ARS Research Networks

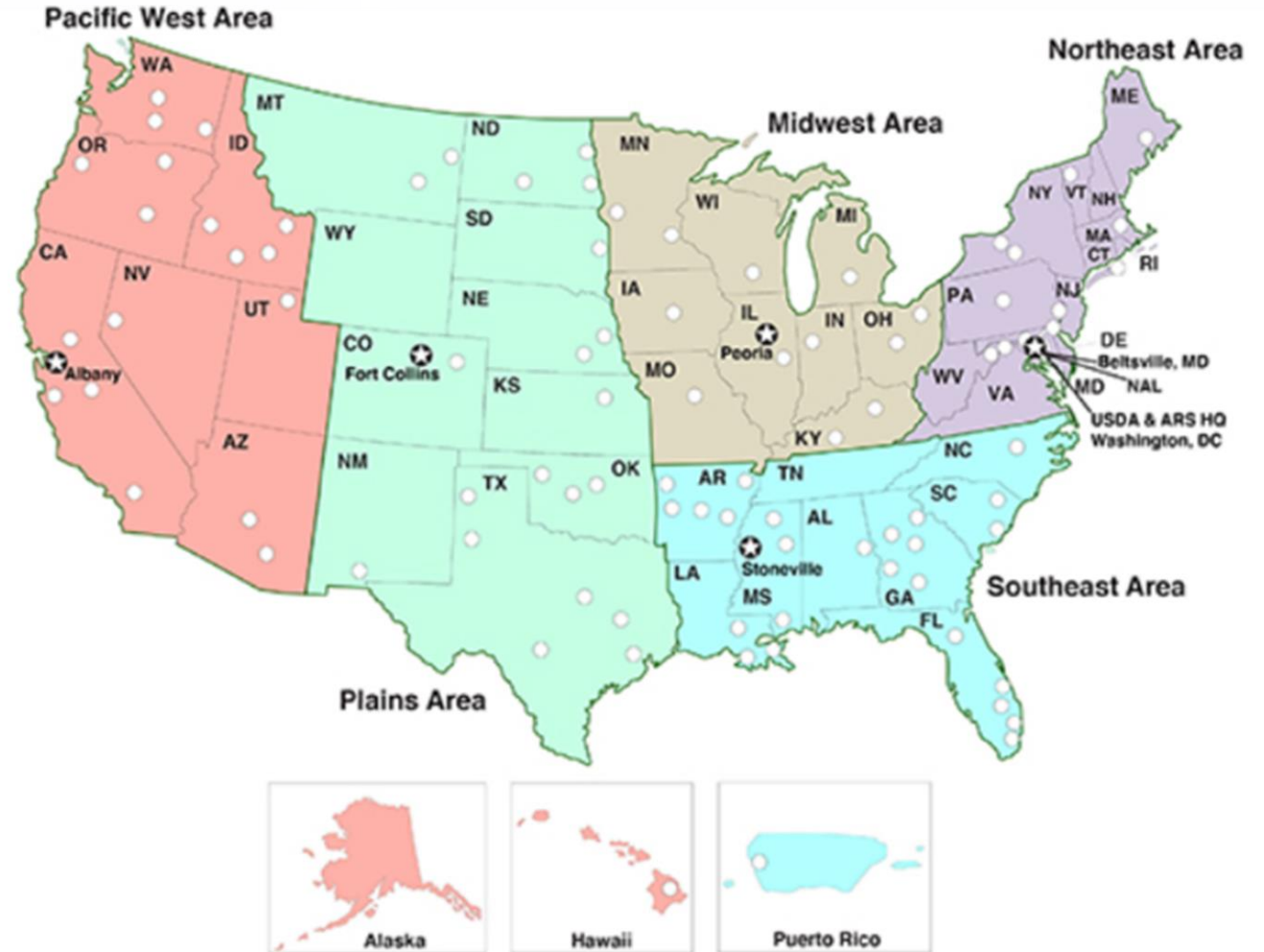
October 4, 2023

Dr. Marlen D. Eve, Deputy Administrator  
USDA Agricultural Research Service



# ARS is USDA's chief in-house research agency

- 🍏 90+ U.S. locations
- 🍏 4 overseas laboratories
- 🍏 8,000 employees, including 2,000 research scientists and postdocs
- 🍏 690 5-year research projects
- 🍏 \$1.7B/yr appropriated budget





**AIR**

Agility

Innovation

Relevance



# ARS Research Programs

## Natural Resources & Sustain. Agric. Sys.

- Water Availability and Watershed Management
- Soil and Air
- Grass, Forage and Rangeland Agroecosystems
- Sustainable Agriculture Systems Research

## Crop Production & Protection

- Plant Genetic Resources, Genomics and Genetic Improvement
- Plant Diseases
- Crop Protection & Quarantine
- Crop Production

## Animal Production & Protection

- Food Animal Production
- Animal Health
- Veterinary, Medical, and Urban Entomology
- Aquaculture

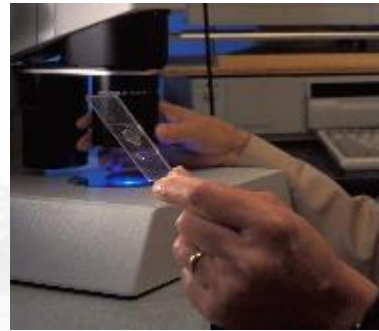
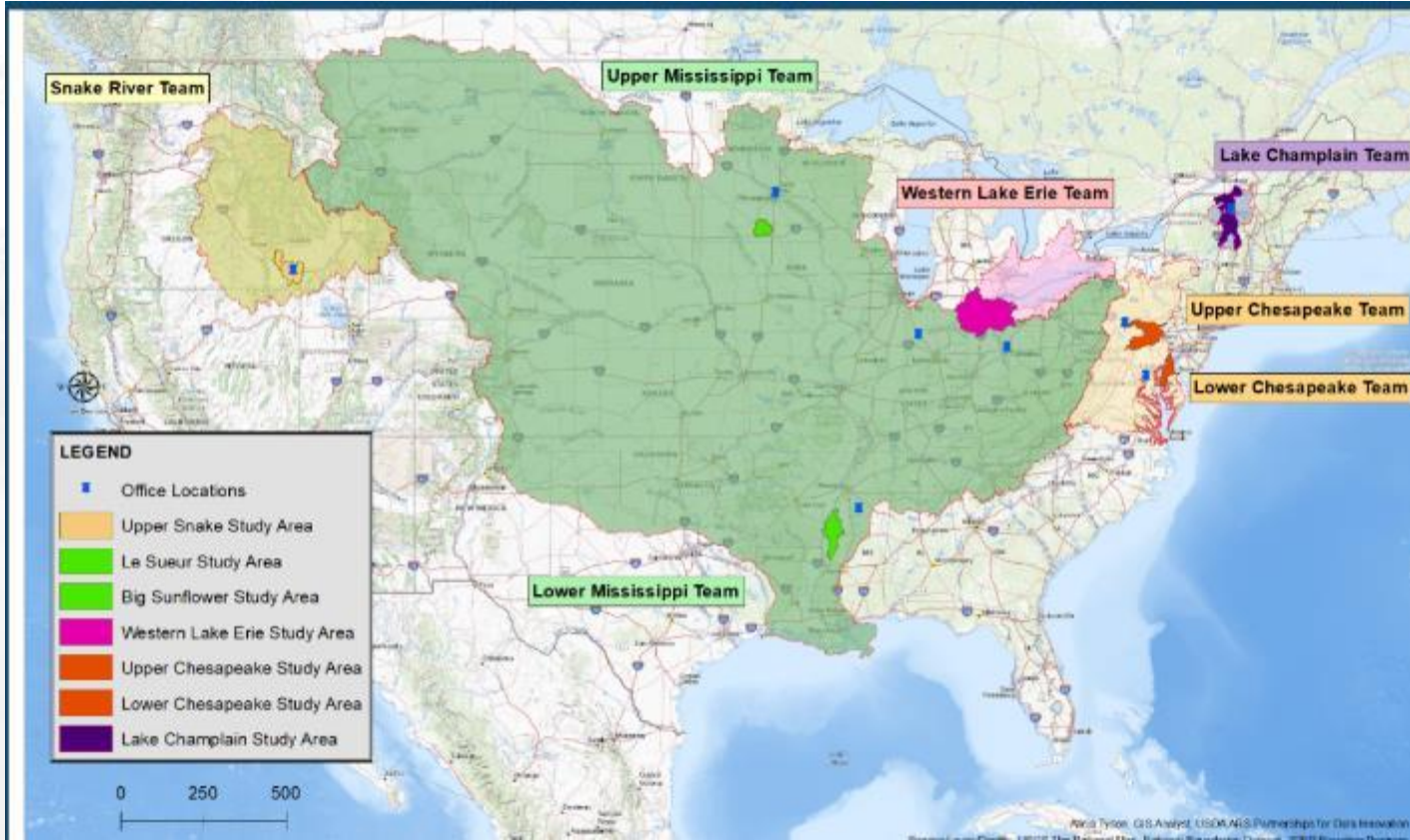
## Nutrition, Food Safety & Quality

- Human Nutrition
- Food Safety
- Quality and Utilization of Agricultural Products

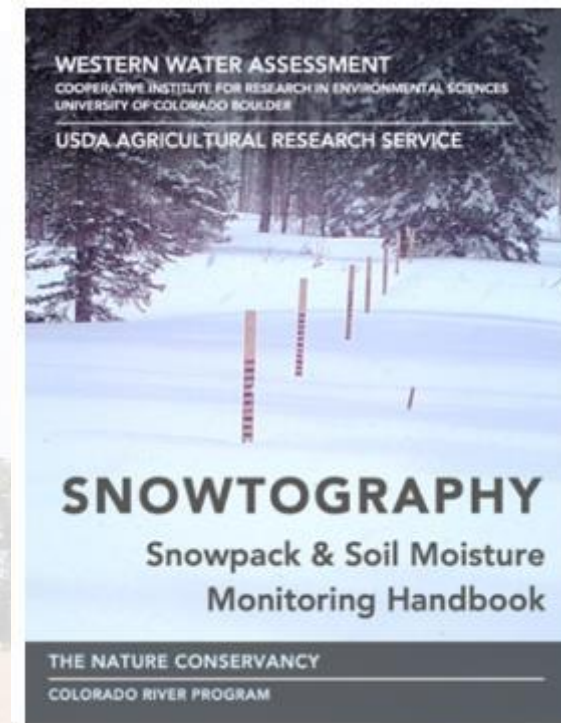
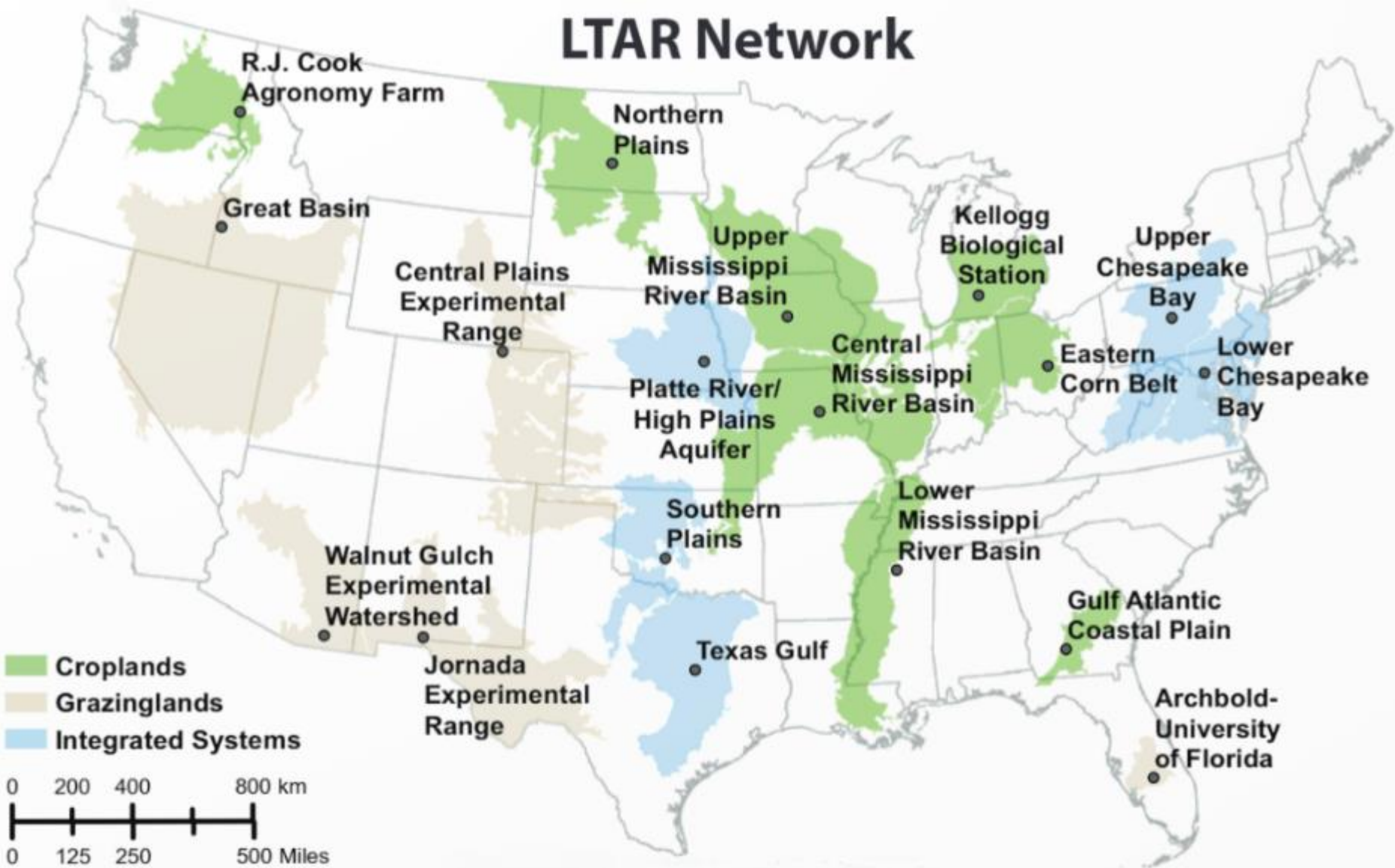


# Natural Resources & Sustainable Ag Systems

## PDI: USDA Legacy Phosphorus Project



# LTAR Network



# Targeted Grazing (TG) for Fuel Breaks

## Problem

- More large wildfires
- Costing \$2.4 Billion/Yr

## Multi-Regional TG Experiment

- Three replicate projects
- Idaho, Nevada, and Oregon

## Findings

- Reduced fuel heights
- Reduced Fuel loads
- Fuel continuity?

## Success Story (see right)

- Intercepted 3 Fires in 4 years
- Protected sage-grouse PAC habitat

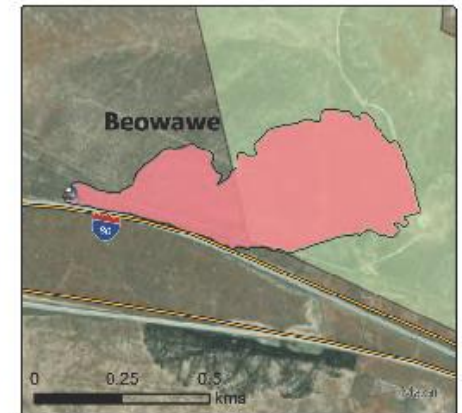
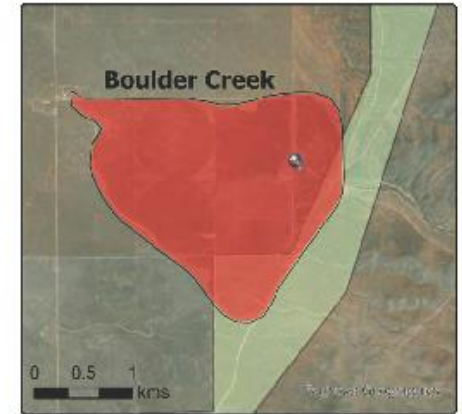
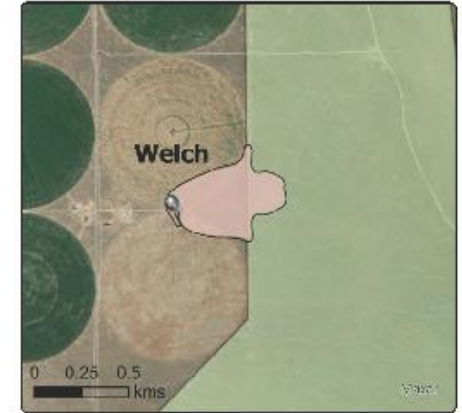
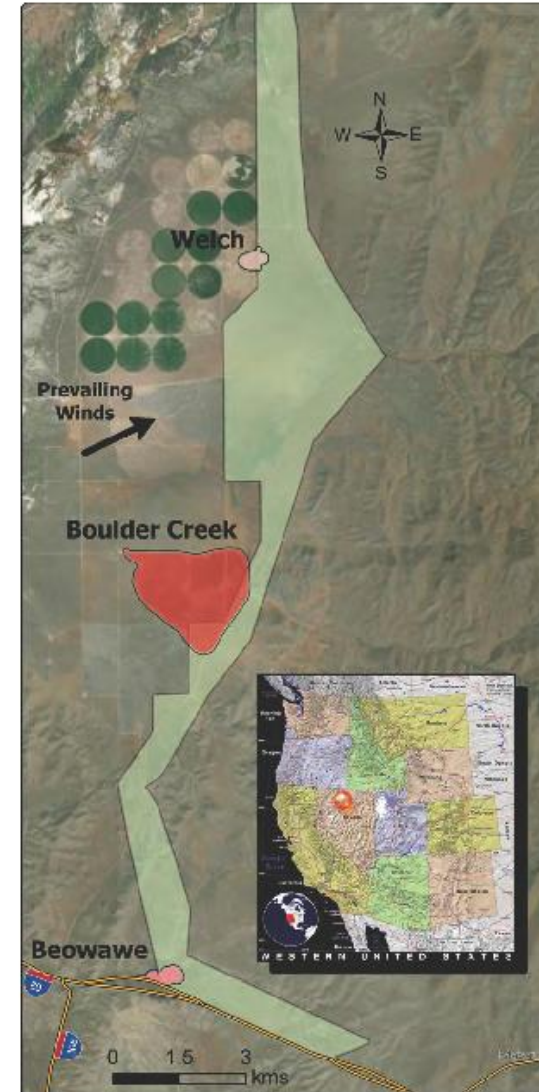
## Impact

- Scientific foundation
- Improved protection



## TS Ranch Fuel Break, Elko, NV

- Targeted Grazing Fuel Break
- 2021 Welch Fire (17 hectares)
- 2020 Beowawe Fire (22 hectares)
- 2018 Boulder Creek Fire (416 hectares)
- Points of Fire Origin



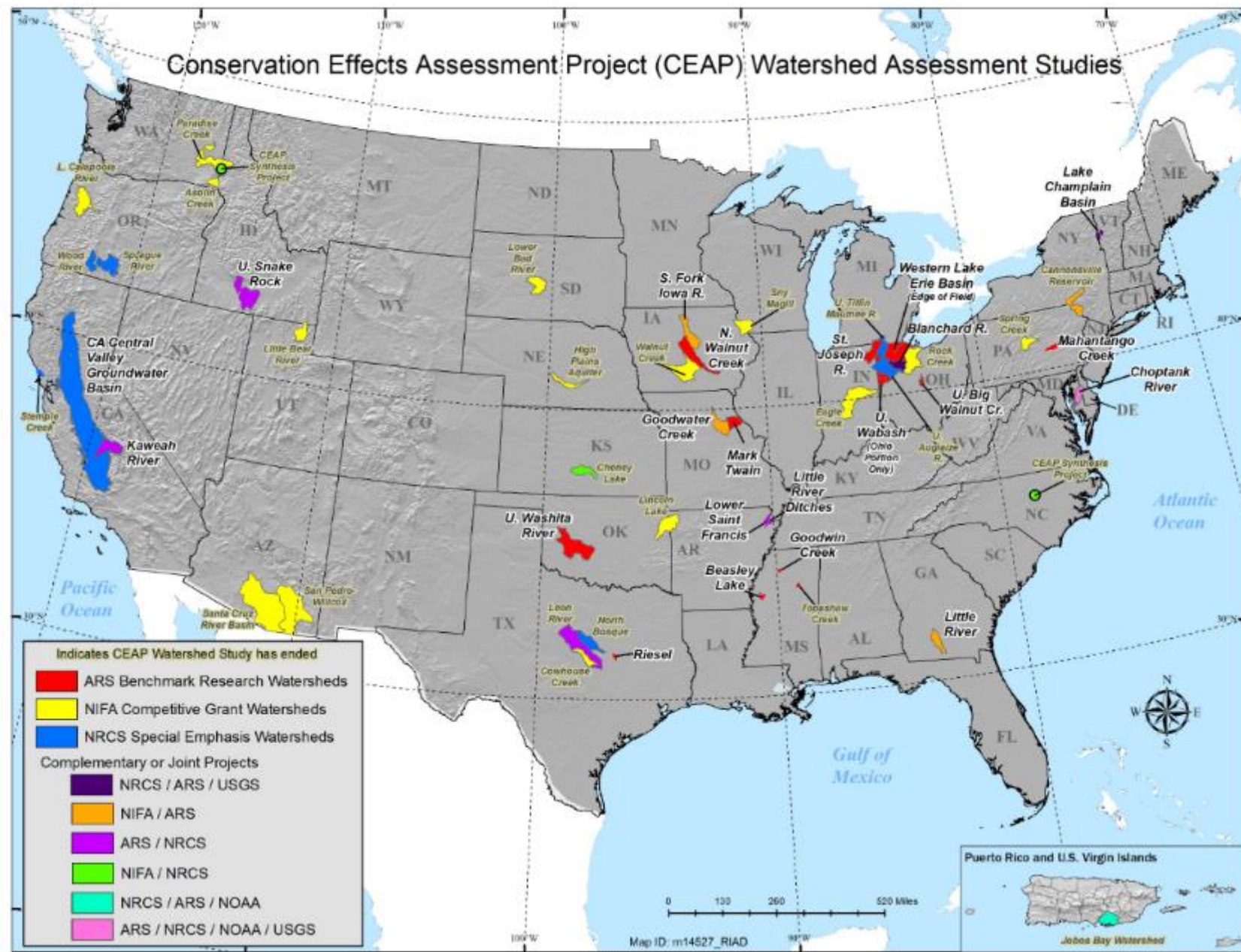
# Conservation Effects Assessment Project (CEAP)

Watershed assessment studies are co-led by ARS, NRCS, and others

- Focus is on cropland areas
- 21 cropland watershed sites across the country.

Goals:

- Quantify measurable effects of conservation practices at various watershed scales
- Enhance understanding of conservation effects in the biophysical setting of a watershed
- Inform local watershed conservation strategies



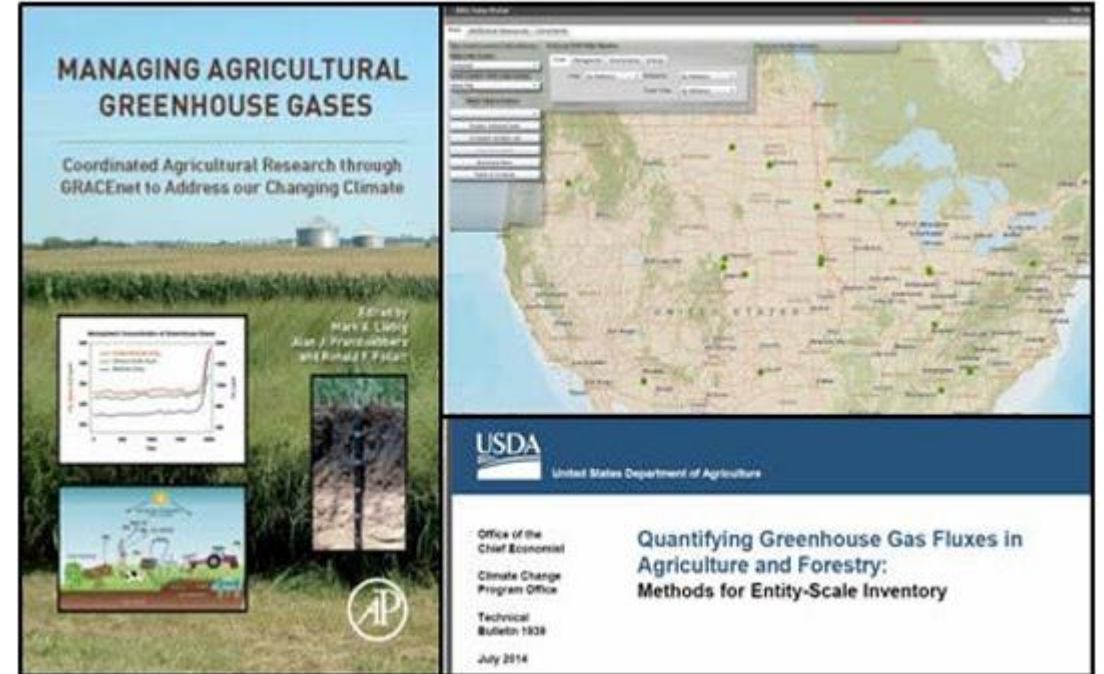
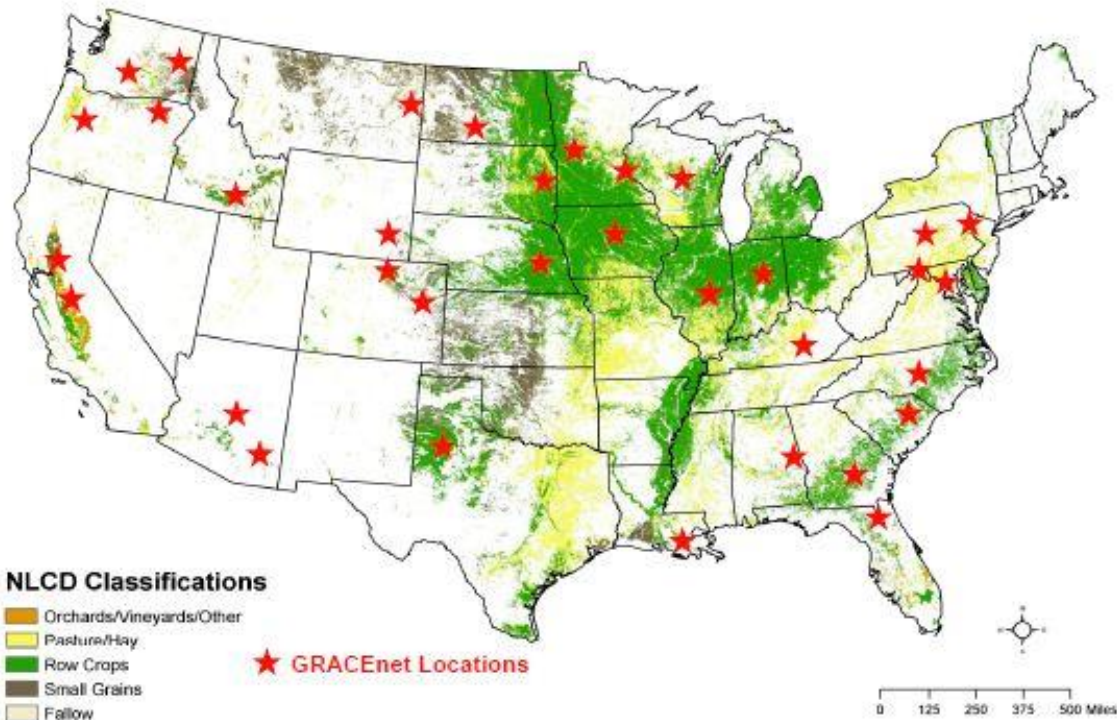


# Research Networks - GRACEnet

## GRACEnet (cropland)

(Greenhouse gas Reduction through Agricultural Carbon Enhancement network)

35 locations



- Characterize existing production practices
- Maximize C sequestration
- Minimize net GHG emissions
- Meet sustainable production and broad environmental benefit goals

# USDA Climate Hubs



Science and data syntheses

*Translating and delivering relevant information*



Technology/tool development and support

*Supporting climate-informed planning and decision-making*



Outreach, convening, and training

*Facilitating engagement, discovery, and exchange*



Agricultural Research Service  
U.S. Department of Agriculture

# Highlight: Grass-Cast

“What if precip thru Aug is...”

## Problem

- Ranchers want to know in advance how much grassland forage will grow for livestock to graze

## Approach

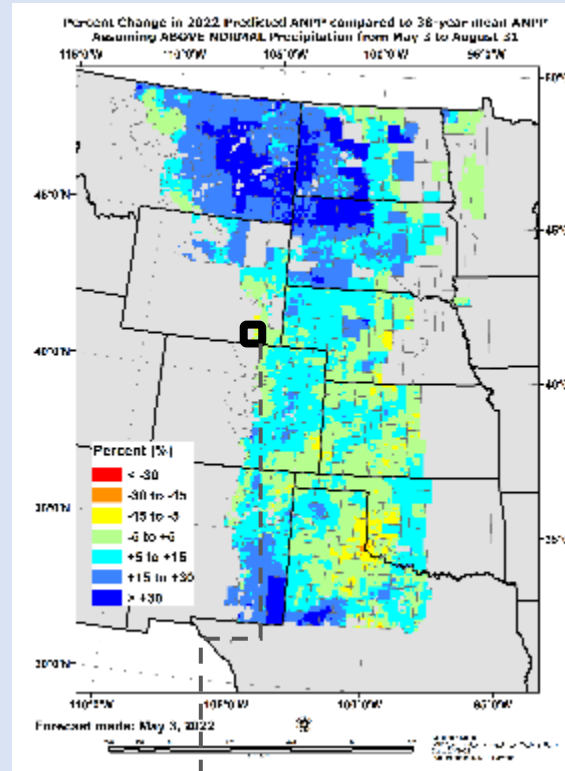
- Grassland forecasting model
- Easy-to-use maps & website
- Updated every 2 weeks

## Impact

- Timely & useable information
- Reduces uncertainty for ranchers
- Informs grazing decisions
- Encourages sustainable range mgmt
- Increases profitability

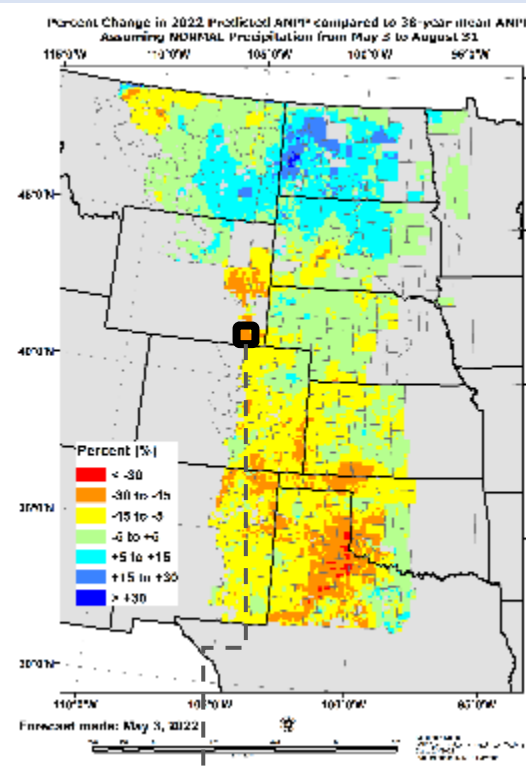


Above-Normal



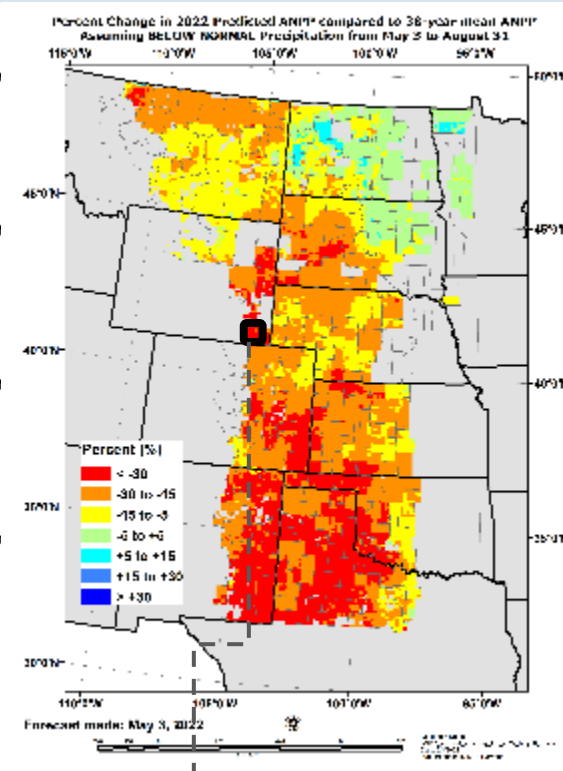
**Green:**  
If precip is **above-normal**, we expect **5% less to 5% more** pounds per acre than the area's 38-year average.

Near-Norm



**Orange:**  
If precip is **near-normal**, we expect **15% to 30% less** pounds per acre.

Below-Norm



**Red:**  
If precip is **below-normal**, we expect **30% less** pounds per acre **or worse**.

<https://grasscast.unl.edu>





**Thank You**

**Marlen D. Eve, Ph.D.**  
**[Marlen.Eve@USDA.gov](mailto:Marlen.Eve@USDA.gov)**

**USDA Agricultural Research Service**