



United States Department of Agriculture



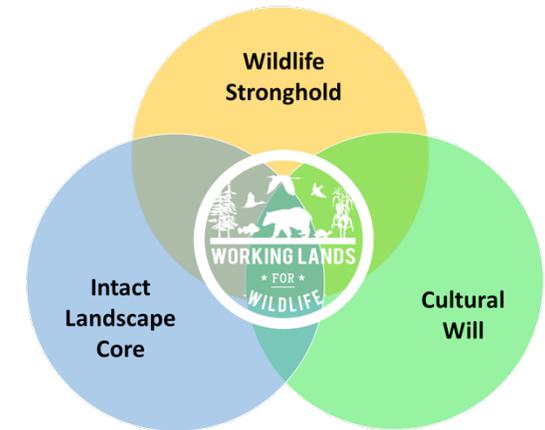
Threat Reduction: Exotic Annual Grass Invasion

Jeremy Maestas (NRCS WNTSC, Portland, OR)



Topics we will cover:

- Nature and extent of threat and why it's a problem
- Strategies for tackling the threat
- Examples of successful strategies and outcomes
- Primary practices and programs
- How to build a strategy and availability of spatial data



The New York Times

Invasive Grasses May Worsen Wildfires, Study Suggests

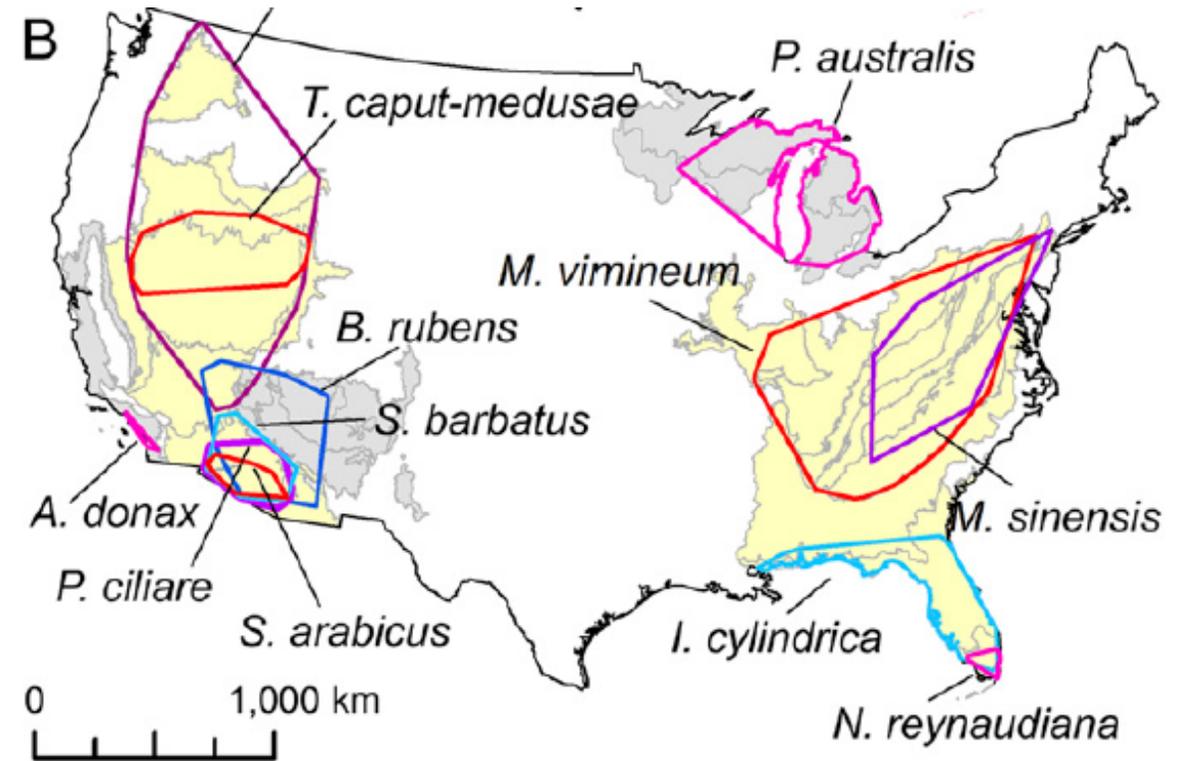


Inmate firefighters battling the Maria fire as it approached Santa Paula on Friday. Noah Berger/Associated Press



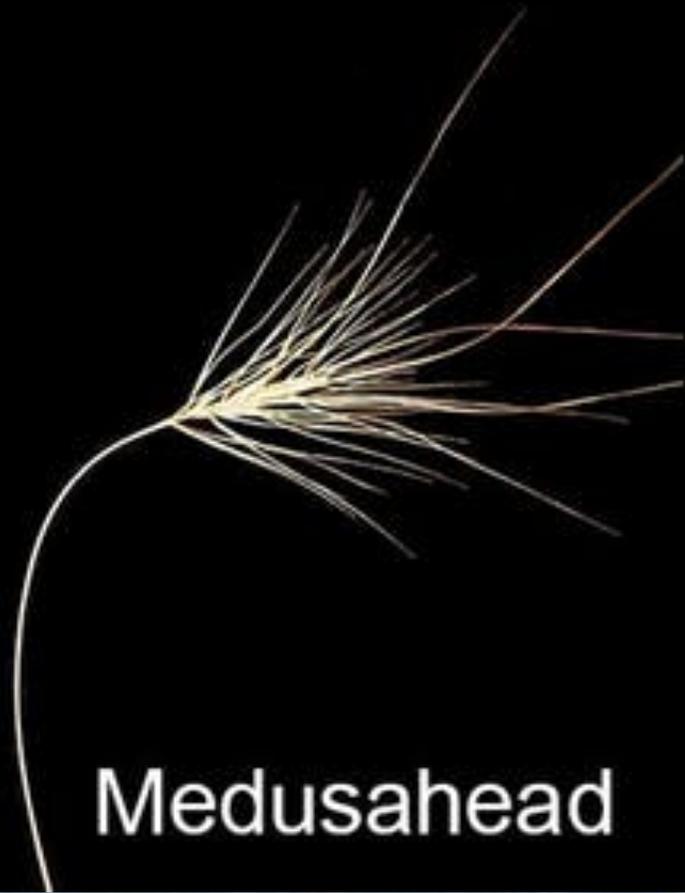
By Kendra Pierre-Louis

Nov. 4, 2019





Cheatgrass



Medusahead

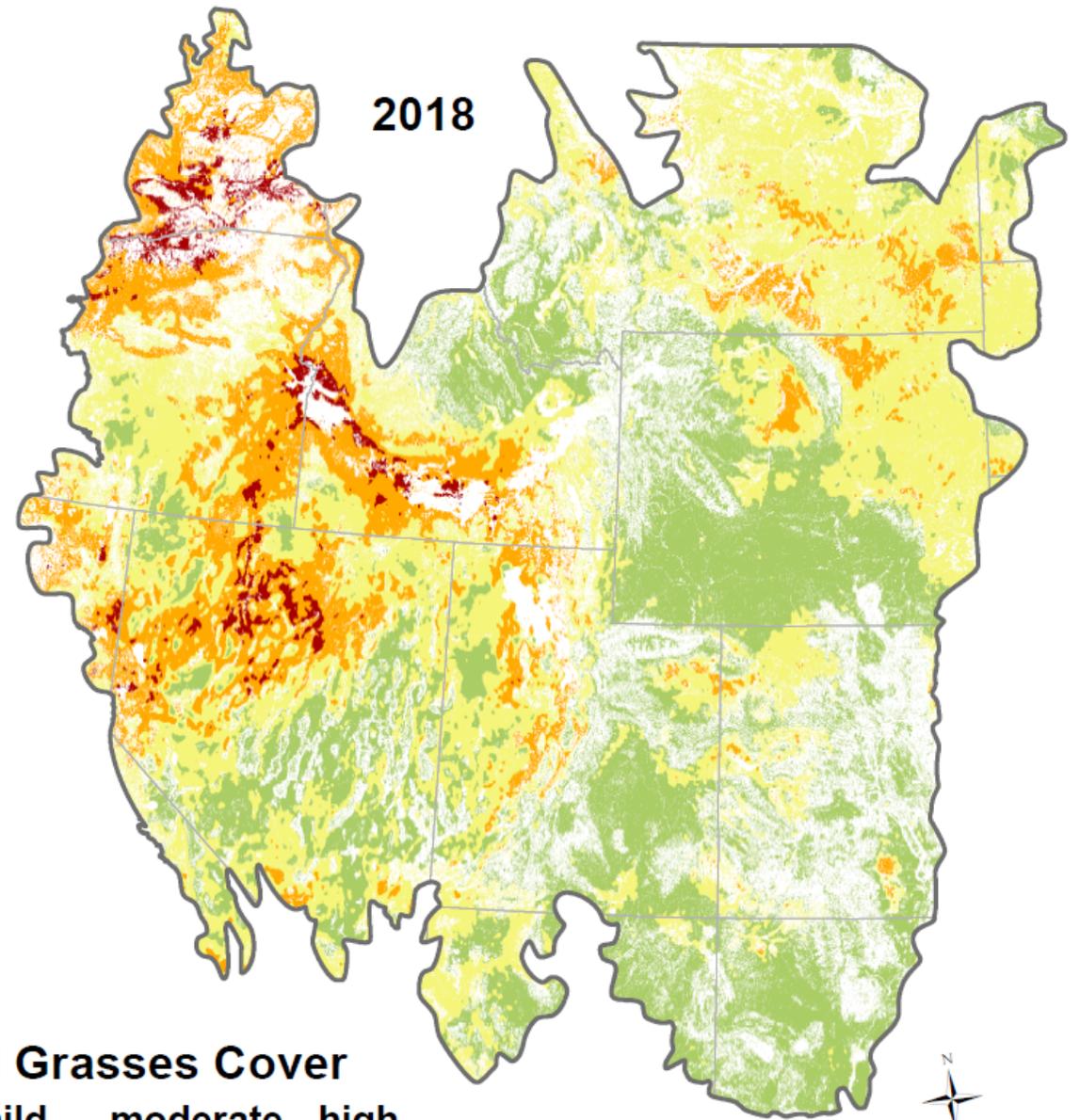
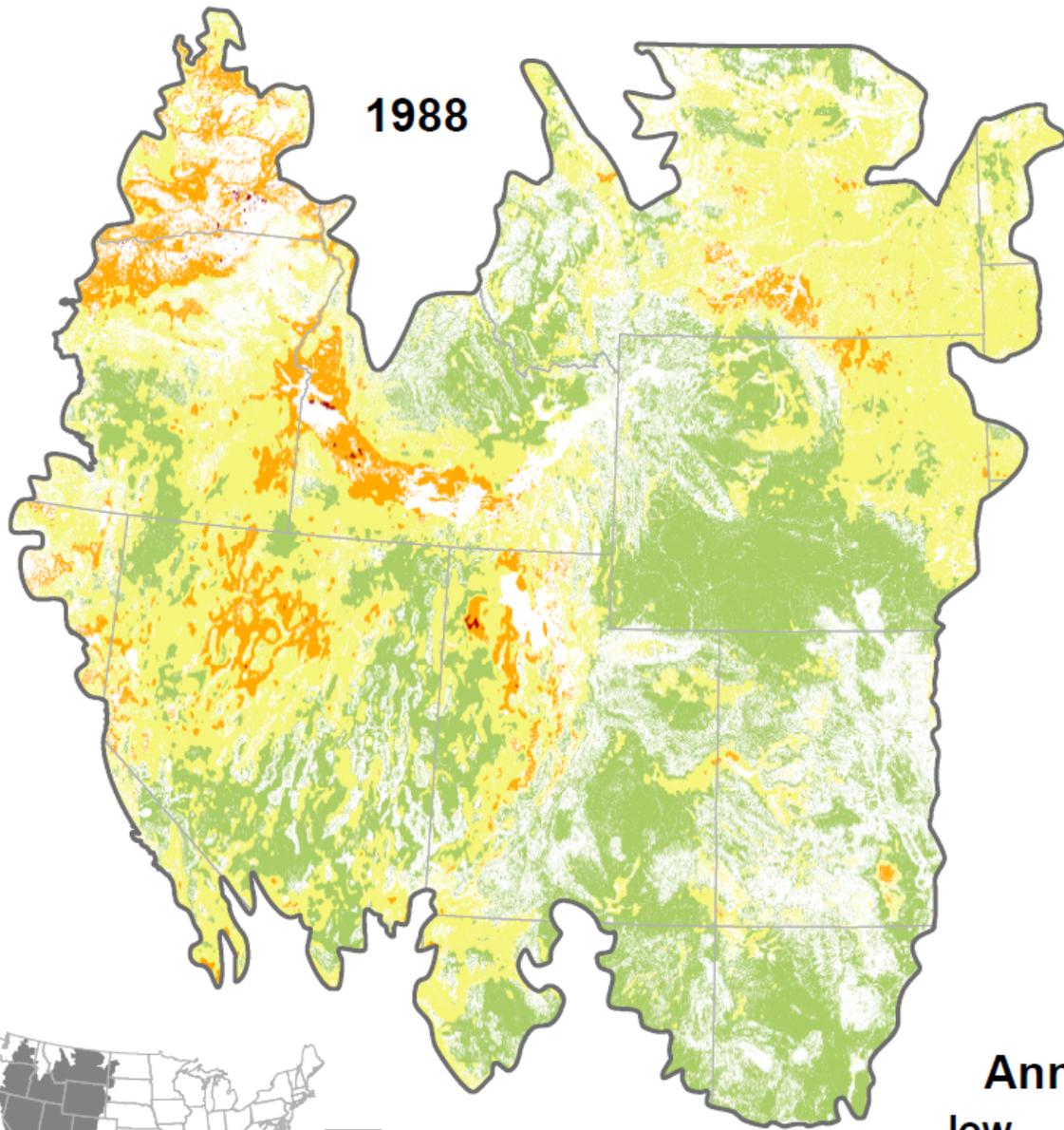


Ventenata



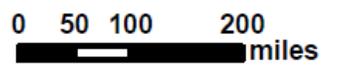
Sagebrush Biome





 Sagebrush Biome

Annual Grasses Cover

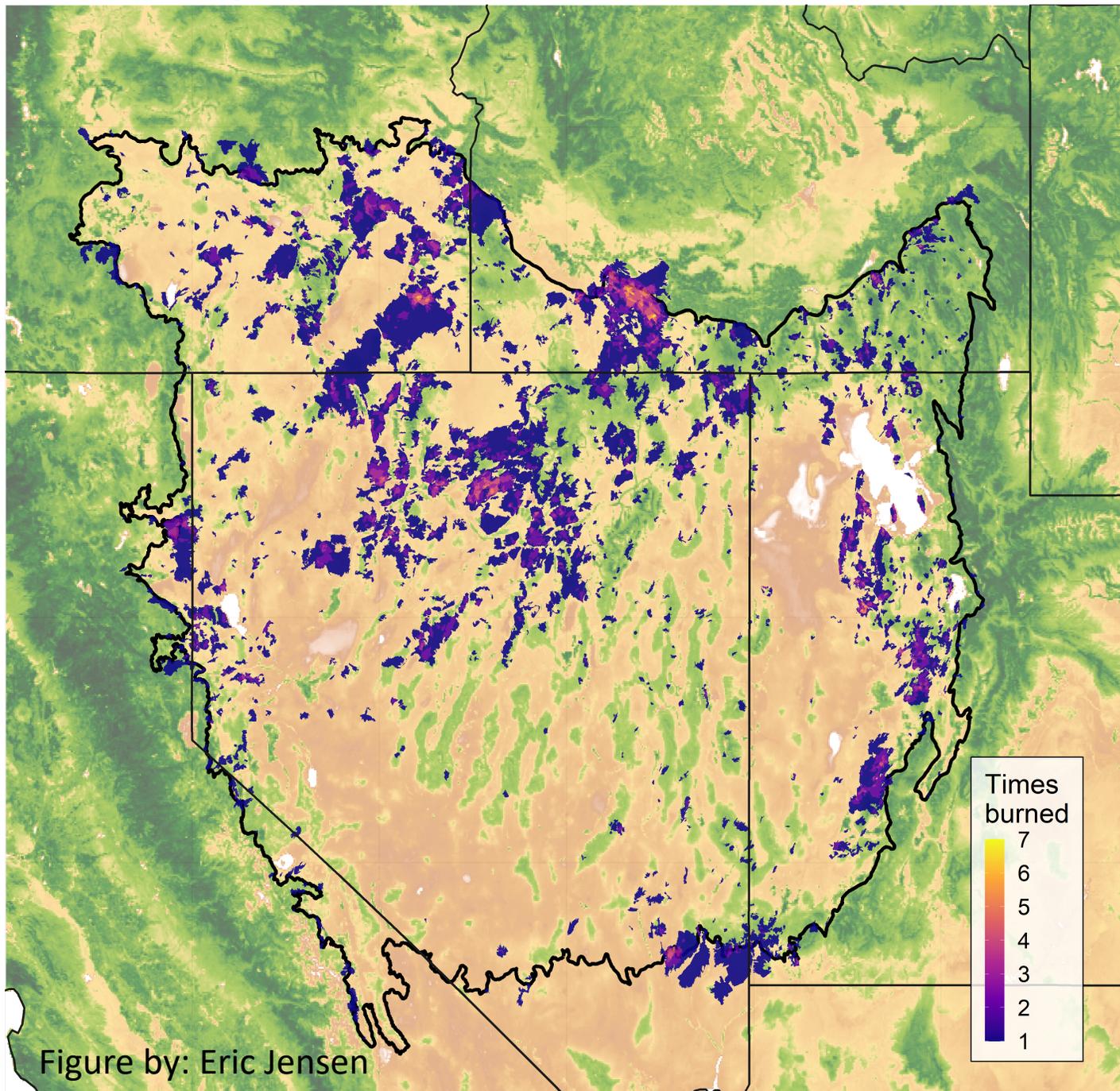


ranglands.app

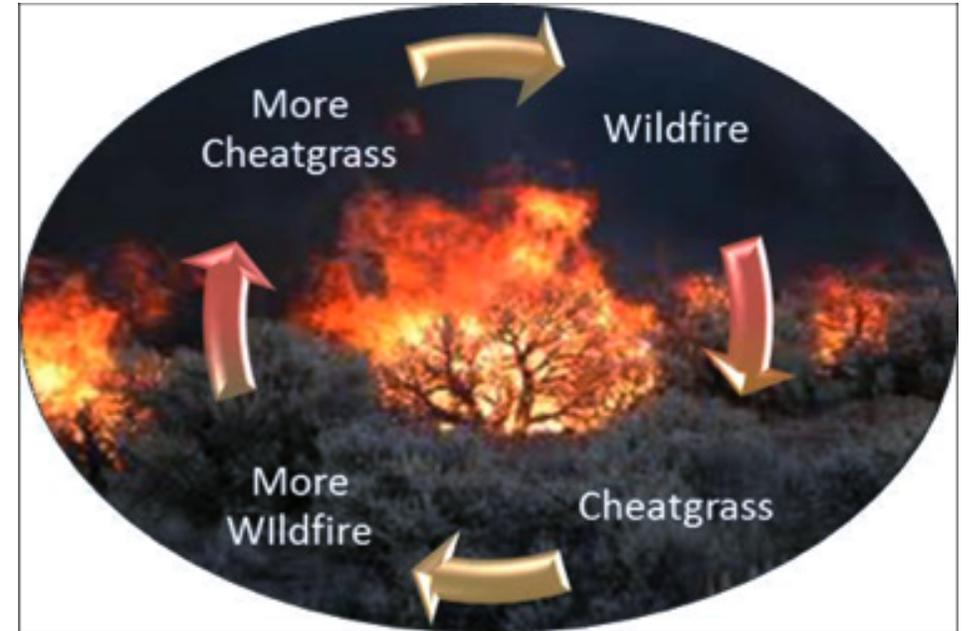


Cheatgrass doubles the risk of wildfire

Fire frequency in the Great Basin (1984-2017)



The Cheatgrass-Fire Cycle



Invasive annuals impact forage production

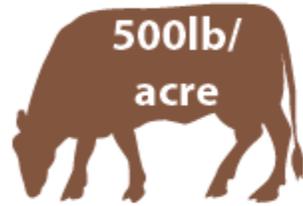
“That’s why they call it cheatgrass. Just when you think you can count on it, it loses that green and dies. Your forage is gone.”

Jon Griggs, Maggie Creek Ranch, Nevada

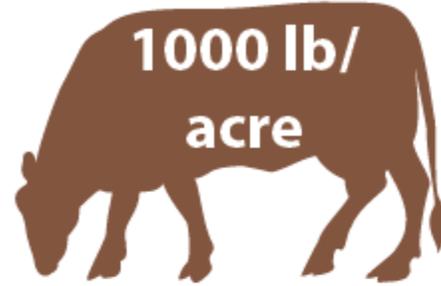


WHAT LEVEL OF
INFESTATION DO
YOU HAVE?

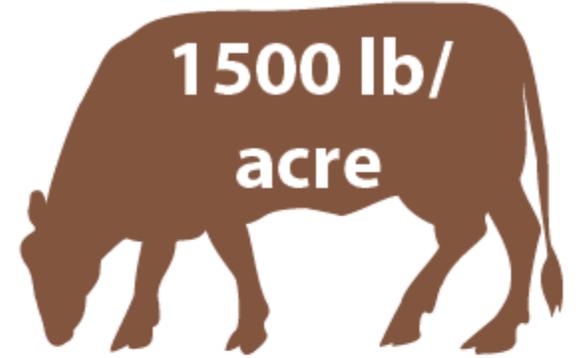
HOW MUCH FORAGE ARE YOU PRODUCING?



500lb/
acre



1000 lb/
acre



1500 lb/
acre



LOW

FINANCIAL GAIN
with treatment

✓ 21 ¢ per acre/
YR

FINANCIAL GAIN
with treatment

✓ \$2.58 per acre/
YR

FINANCIAL GAIN
with treatment

✓ \$4.94 per acre/
YR



MODERATE

FINANCIAL LOSS
with treatment

✗ 49 ¢ per acre/
YR

FINANCIAL GAIN
with treatment

✓ \$1.42 per acre/
YR

FINANCIAL GAIN
with treatment

✓ \$4.23 per acre/
YR



HIGH

FINANCIAL LOSS
with treatment

✗ \$5.43 per
acre/
YR

FINANCIAL LOSS
with treatment

✗ \$4.39 per
acre/
YR

FINANCIAL LOSS
with treatment

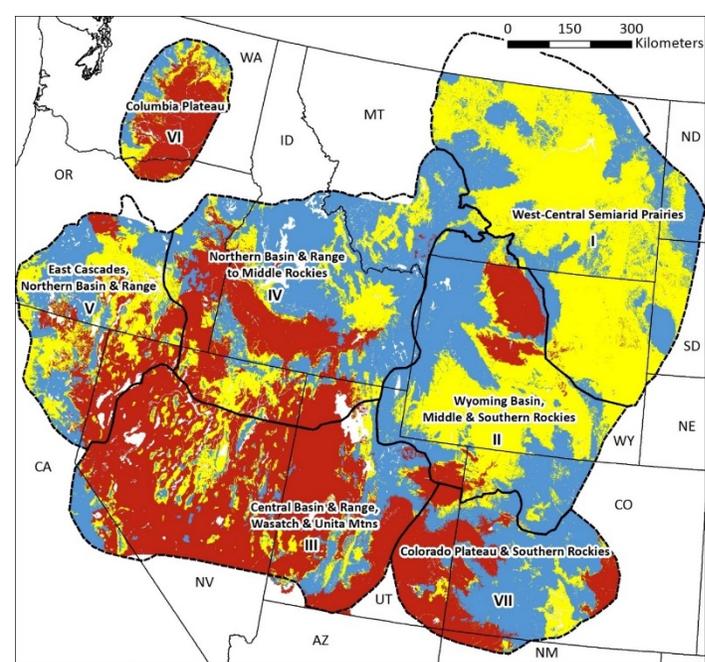
✗ \$3.76 per
acre/
YR

Invasive annuals reduce wildlife habitat quantity and quality

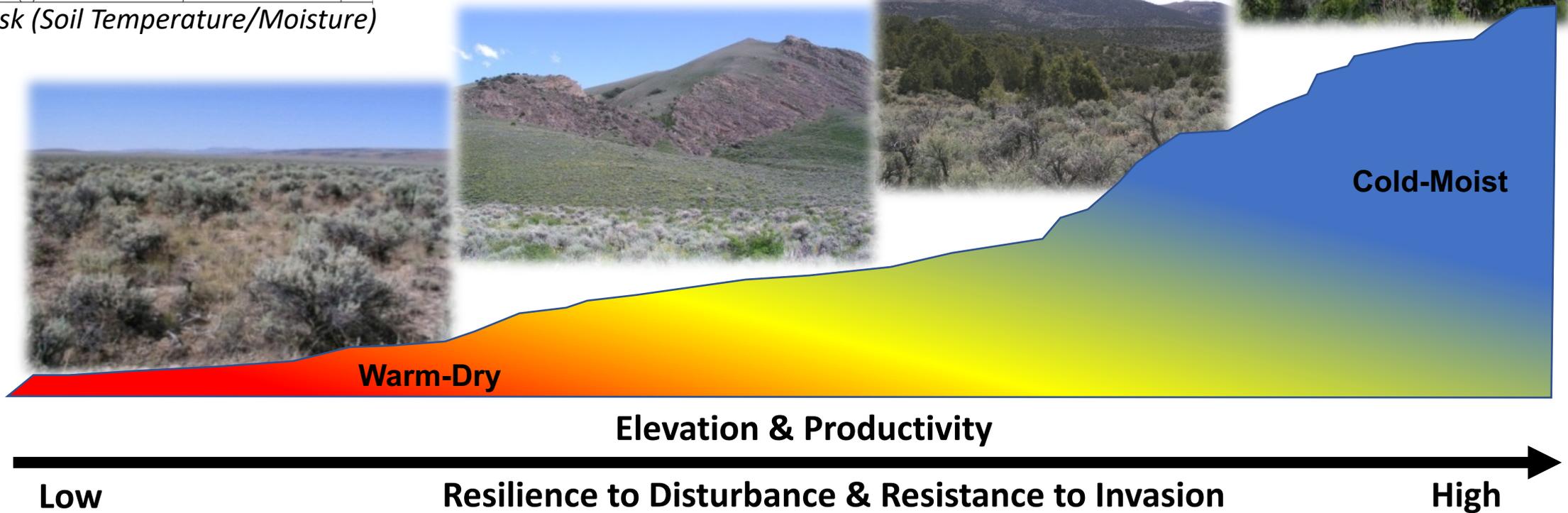


“Invasive annuals put rangelands in a persistent state of drought”

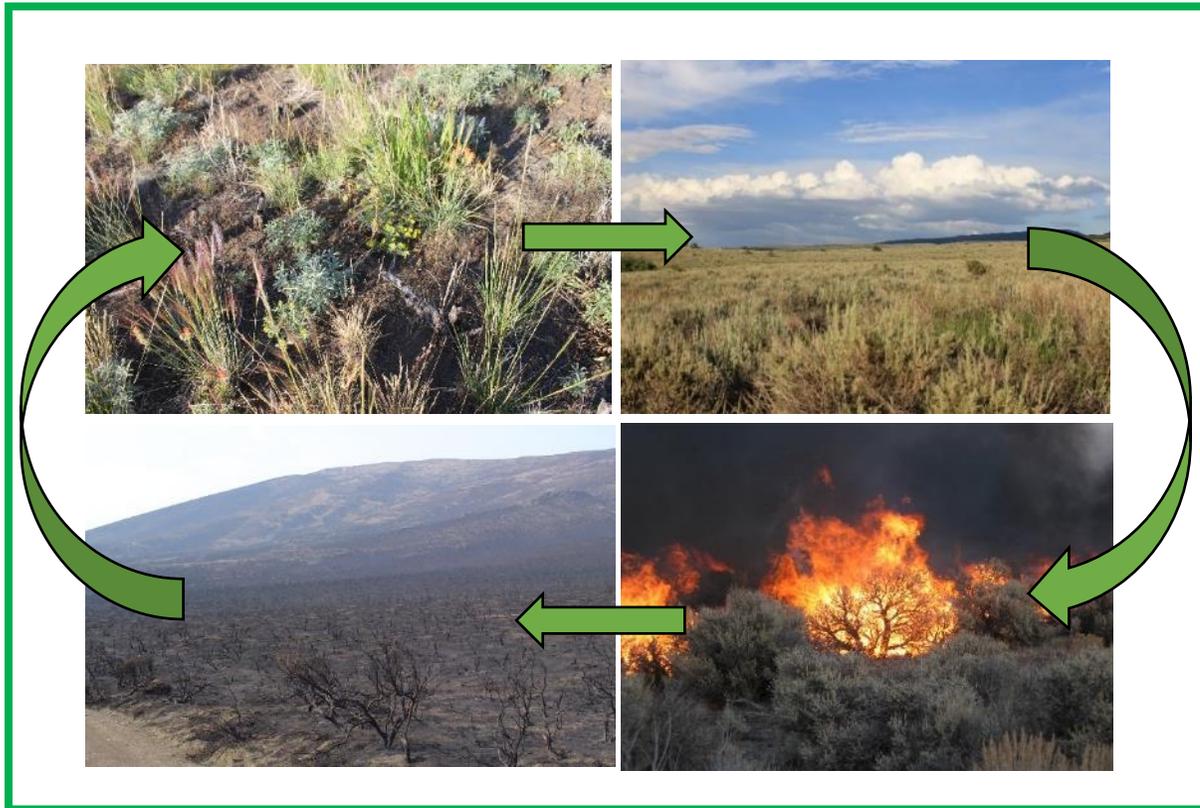
Where are invasive annuals most problematic?



Abiotic Risk (Soil Temperature/Moisture)



Perennial-dominated Sagebrush Shrubland



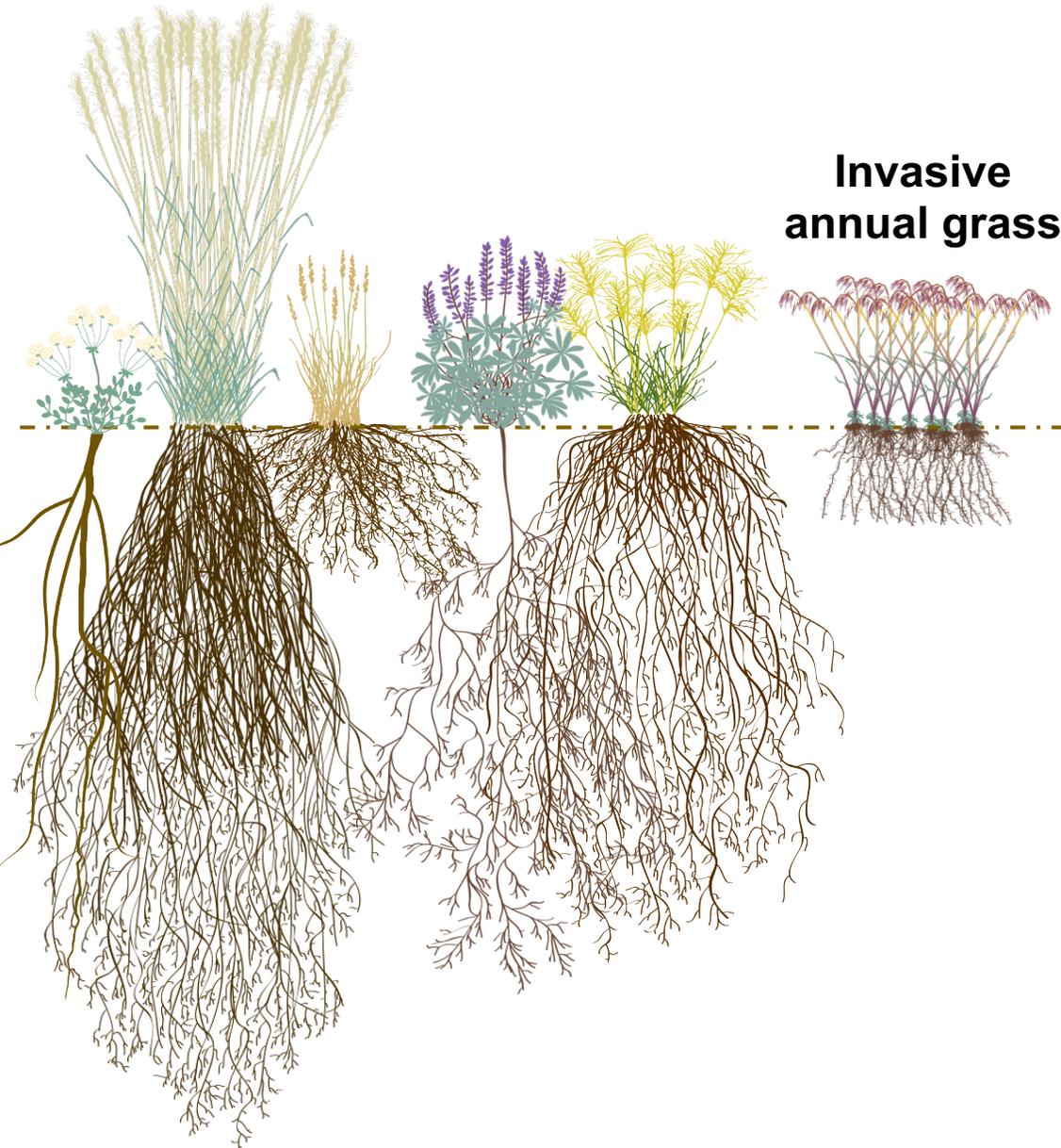
Big Picture:
We want to stop this
'undesired' state change
at large scales

Transition

Annual Grassland



Native perennials



Invasive annual grass

Healthy perennials provide our best defense

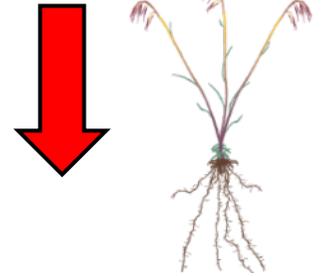


Depletion of invasive seedbank critical too



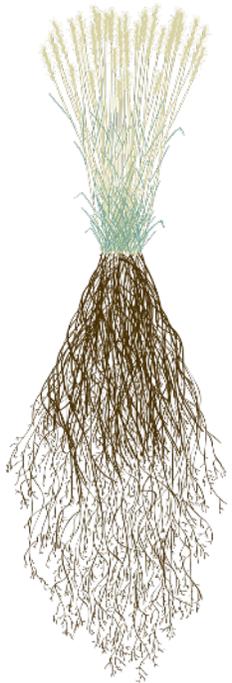
Shared Vision: *Productive, working rangelands that are resilient to fire and resistant to invasive annual grass conversion*

Manage against invasive annuals



+

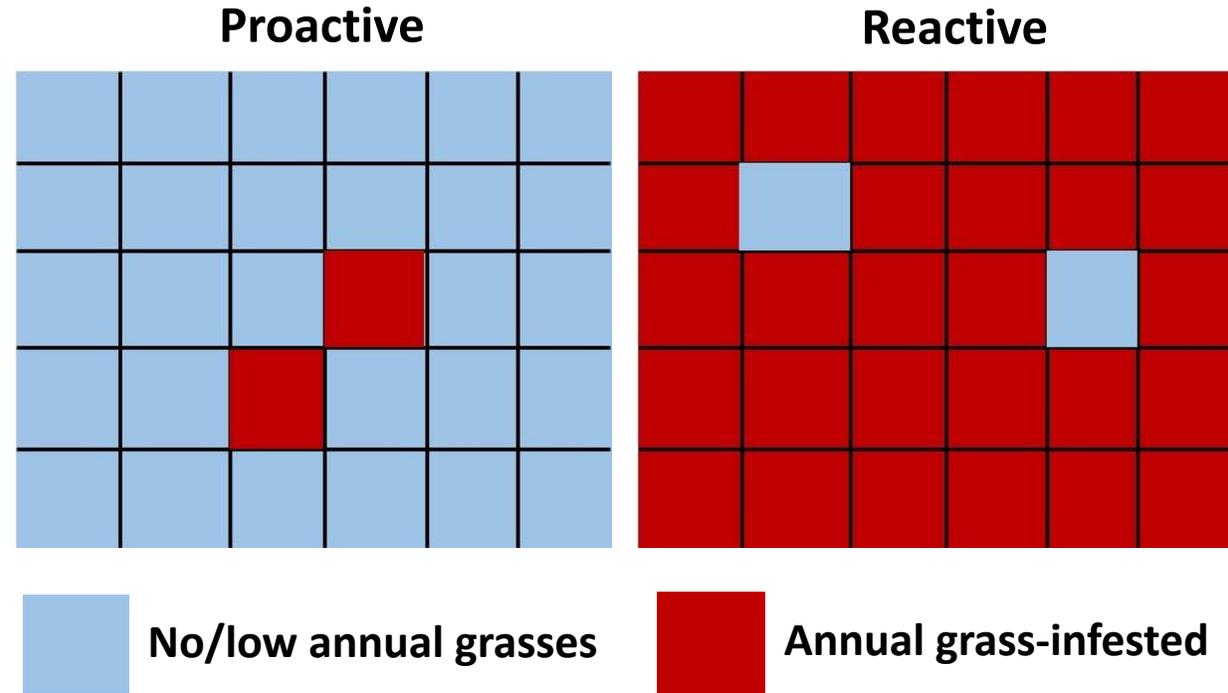
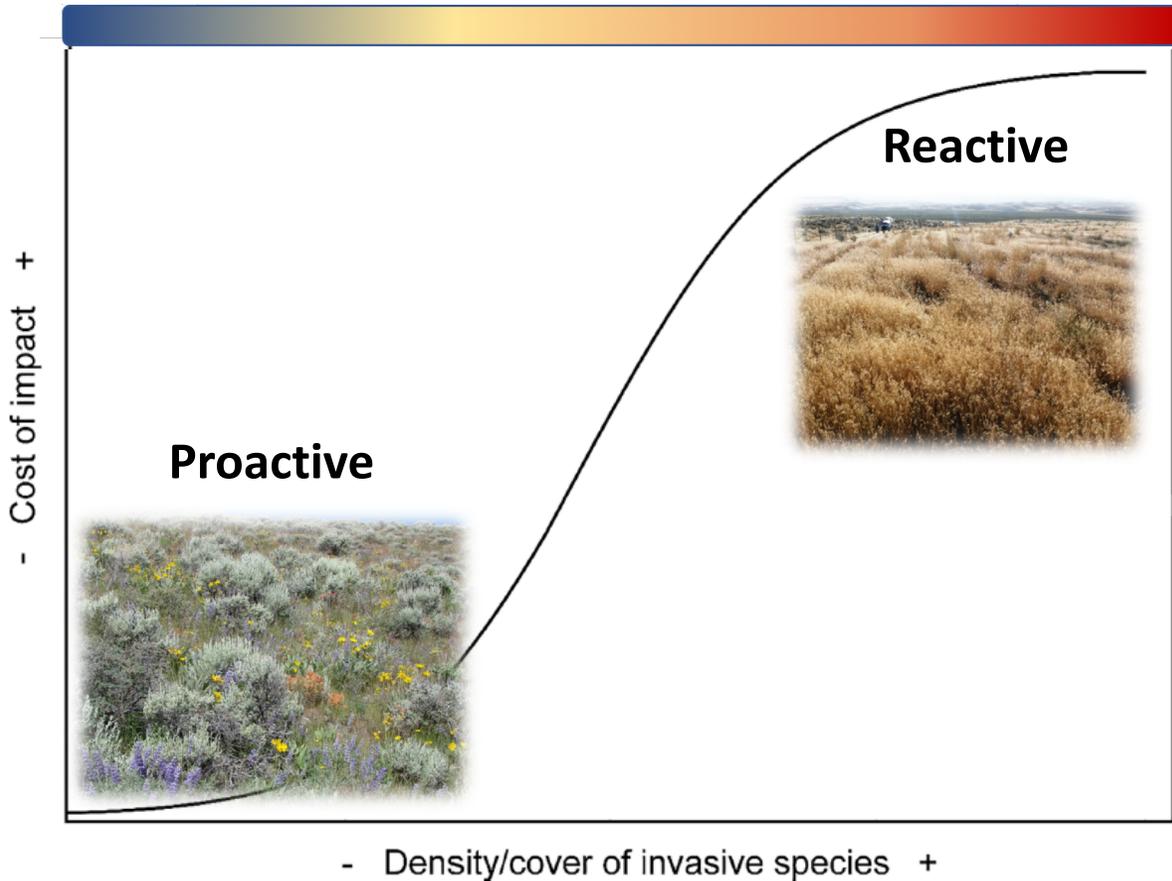
Manage for perennials



A group of people are pushing a white truck stuck in a mud pit. The truck is partially submerged in a muddy, rutted area. Several men are leaning against the side of the truck, pushing it forward. One man in a blue plaid shirt is in the foreground, leaning against the front grille. Another man in a light blue shirt is pushing against the side. A man in a light blue shirt and sunglasses is standing to the right, gesturing. A woman in a red and black plaid shirt is standing further back. The background shows a grassy hillside under a clear blue sky.

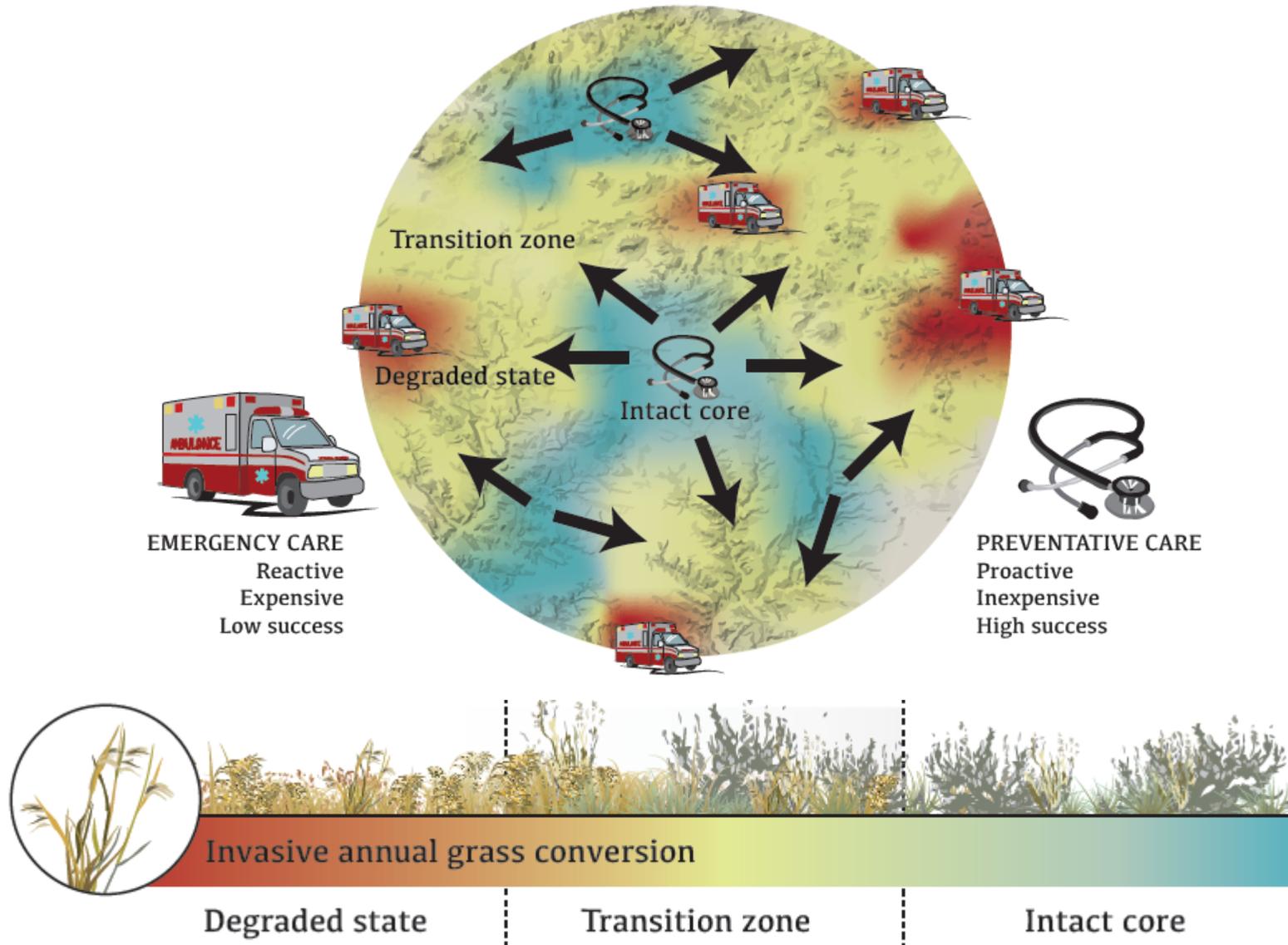
Why haven't past efforts been working?

Where do we usually work? Where should we work?



Which landscape is annual grass control more likely to be more effective in?

Proactive spatial strategy has been missing



Where do we see greatest outcomes?



The Cheatgrass Challenge

A proactive strategy for halting conversion of sagebrush rangelands to annual grasslands



Talk about cultural will!



NRCS

BLM

USFWS

Fish & Game

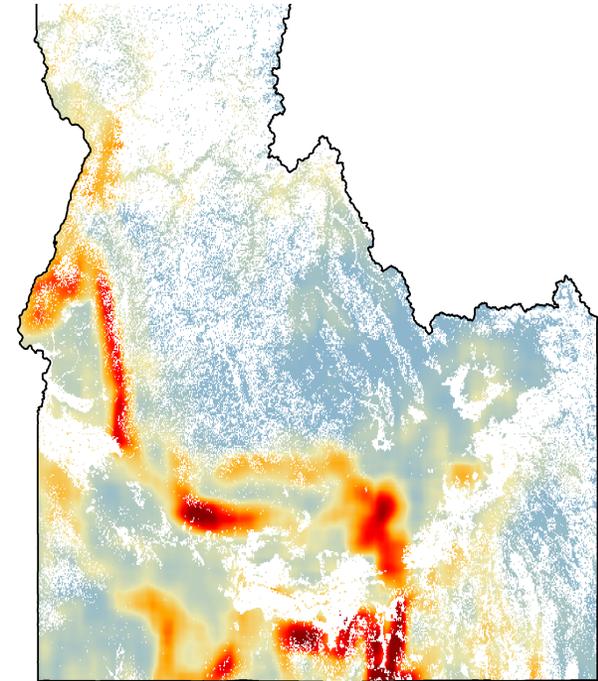
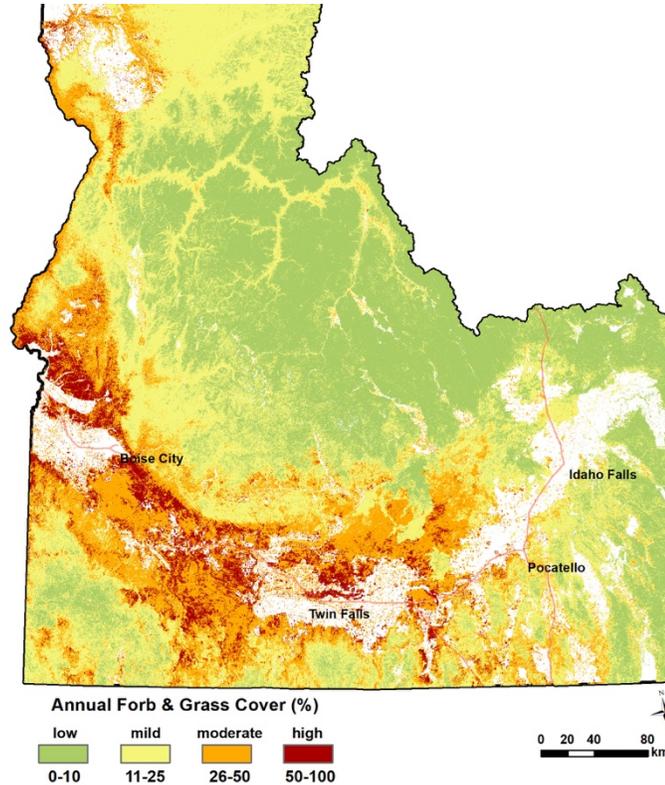
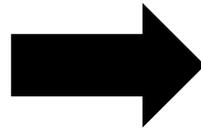
State Lands

Leader

Landowner



We finally have the spatial data to do this

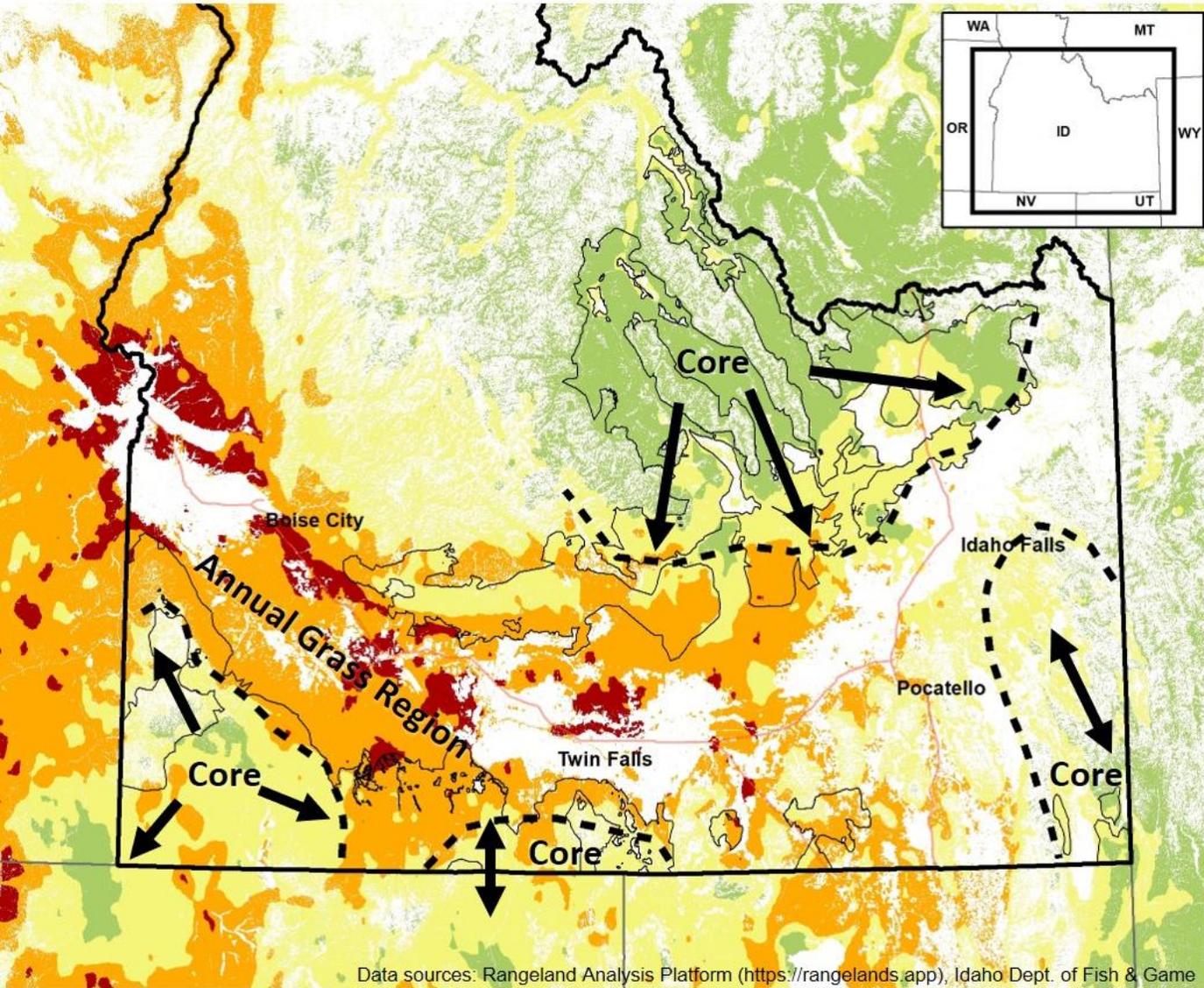


rangelands.app

The Cheatgrass Challenge Strategy

Defend the core → Grow the core → Mitigate impacts

1. Defend relatively intact core from annual grass conversion
2. Grow the core over time
3. Mitigate severe impacts of the cheatgrass-fire cycle on life and property



Data sources: Rangeland Analysis Platform (<https://rangelands.app>), Idaho Dept. of Fish & Game

Landscape Cover of Annuals on Rangelands



Sage Grouse Priority Areas



Conservation Tools
Help Producers
Make Positive
Impacts on
Changing Climate

NRCS conservation practices and innovative technologies help farmers and ranchers build resiliency in a changing climate and put America on track to a healthier environment.



Popular Topics

- > Contact Us
- > Programs
- > Snow Survey
- > Soil Health
- > Technical Resources

Sign up for email updates:

In the News Events & Deadlines

Highlights

- Find Your Local NRCS Office
- Idaho Employee's Directory
- Idaho Employee's Intranet
- NRCS Field Office Tech Guide (FOTG)
- Idaho Civil Rights



Step-by-Step
How to Get Assistance

Get Started!



The Cheatgrass Challenge



Conservation Compliance



Soil Health



Sage-grouse Initiative



Tackling Idaho's Cheatgrass Challenge



Primary practices & programs (*How, What?*)

Herbicides (315)



Seeding (550, etc.)



Prescribed Grazing (528)



Monitoring (528/645)



EQIP

Environmental
Quality Incentives
Program

CSP

Conservation
Stewardship
Program

RCPP

Regional Conservation
Partnership Program

“Defend the core, grow the core, mitigate impacts”



Core



Transition Zone



Annual Grass Region

Early Detection Rapid Response (EDRR)

Keep weed seeds out

Eradicate early infestations

Seedbank depletion

Aggressive restoration

Manage vectors of spread

Post-fire rehabilitation

Promote perennial plant health and vigor

Fine fuels reduction

(e.g., targeted grazing, fuel breaks)

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- Newsroom**
- News Releases
 - Events & Deadlines
 - Features
 - Photos and Videos
 - Public Notices
 - Publications & Fact Sheets
 - Success Stories

News Release

Working for Idaho: Public-Private Partnership Announces the Cheatgrass Challenge [Email This Page](#)

Contact:
Mindi Rambo, Public Affairs Specialist, 208.378.5720

BOISE, ID, June 29, 2020 –A journey of a thousand miles begins with a single step, and so does a collaborative effort to battle invasive annual grasses in Idaho.

In Idaho, a partnership of public and private agencies and organizations has undertaken an effort dubbed "The Cheatgrass Challenge." The Challenge will start this summer with six projects in "core areas" where invasive annuals encroachment is low to moderate. The Challenge's initial focus will be to protect currently healthy rangeland habitat and, secondly, to restore moderately infested habitat to its native perennial state where it is most cost effective and easiest to maintain. The Challenge strategy ultimately plans to build on those projects, pushing into moderately to highly infested areas of invasive grasses to "grow the core areas."

The Projects

Cottonwood Basin

This multi-year juniper and cheatgrass treatment will impact 15,000 acres in

Crooked-Birch Creek

This project envisions improved livestock distribution and annual-grass treatment of 16,000 acres of Bureau of Land Management, State and privately held lands

Grassy Ridge/Sand Creek

This project will cover approximately 92,000 acres in the Sand Creek Area a Rehabilitation zone in eastern Idaho. Practices employed will protect against alternatives for wildlife habitat and grazing management.

Pioneer Arco Mountain

This project envisions herbicide treatment, range seeding and prescribed grazing on 5,000 acres in the Arco area.

Reynolds Creek

A 7,500-acre project, the Reynolds Creek proposal includes Soda Fire rehabilitation, Bruneau-Owyhee Sage-grouse Habitat Project juniper treatments as well as other treatments in the project area.

Upper Birch – Lemhi Basin

The early detection of cheatgrass and rapid response efforts to eradicate it in the Lemhi Basin watersheds is the focus of this proposed project. Four thousand acres will be treated with herbicide treatments applied on 300 to 500 acres of private land and 200 acres of Federal

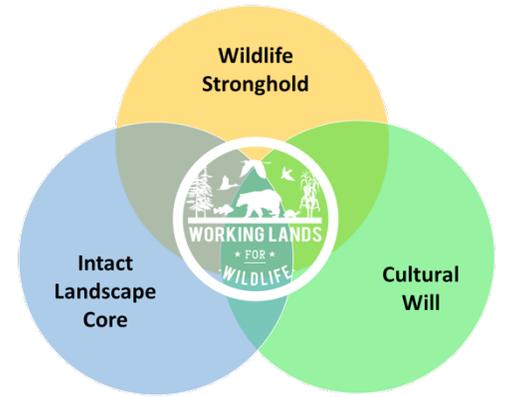


Desired outcomes

- Large-scale, cross-ownership demonstration projects
- Vegetation data trending in the right direction
(More perennials and fewer invasive annuals)
- Remote sensing data showing intact cores are being maintained, improved, and/or are expanding
(State transitions halted)



What made this example successful?



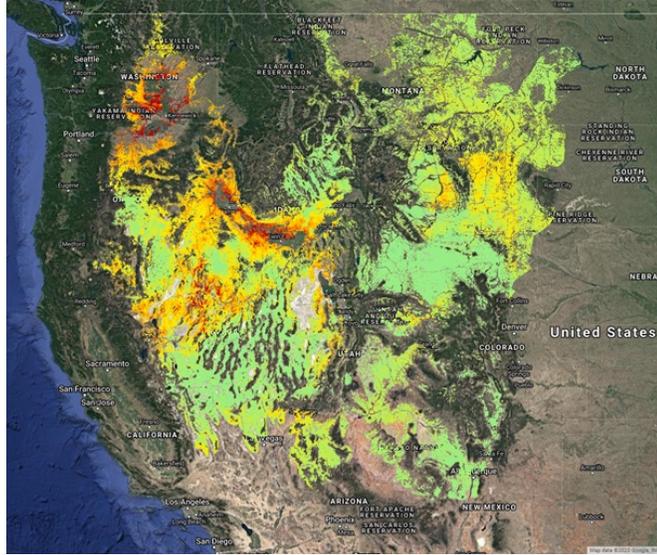
- Leadership and strong cultural will
- New technology enabled better spatial planning
- Statewide strategy, local solutions
- Local management actions placed in landscape context
- Diverse partners working towards shared goal

Step-by-Step Process

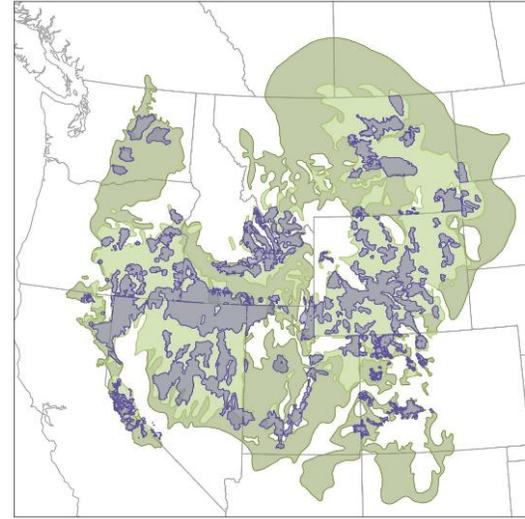
1. Convene key partners



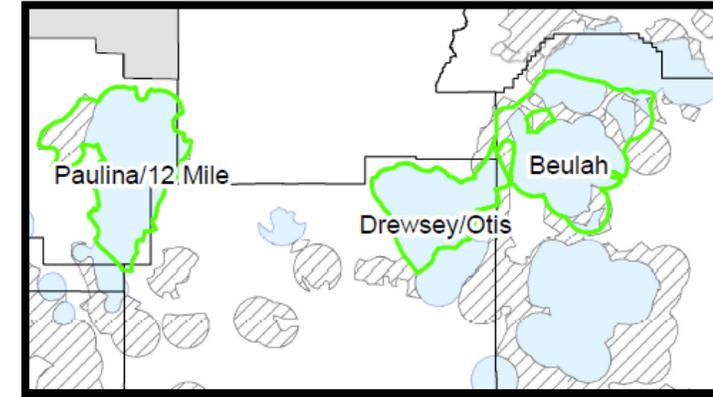
2. Use available veg data to identify cores



3. Overlay sage grouse PACs to incorporate wildlife values



4. Empower locals to identify specific priority project areas



5. Describe specific actions, estimate resource needs

- Early Detection Rapid Response (EDRR)
 - Keep weed seeds out
 - Eradicate early infestations
 - Seedbank depletion
- Aggressive restoration
 - Manage vectors of spread
- Post-fire rehabilitation
 - Promote perennial plant health and vigor
- Fine fuels reduction
 - (e.g., targeted grazing, fuel breaks)

5. Align funding with strategy and leverage partnerships

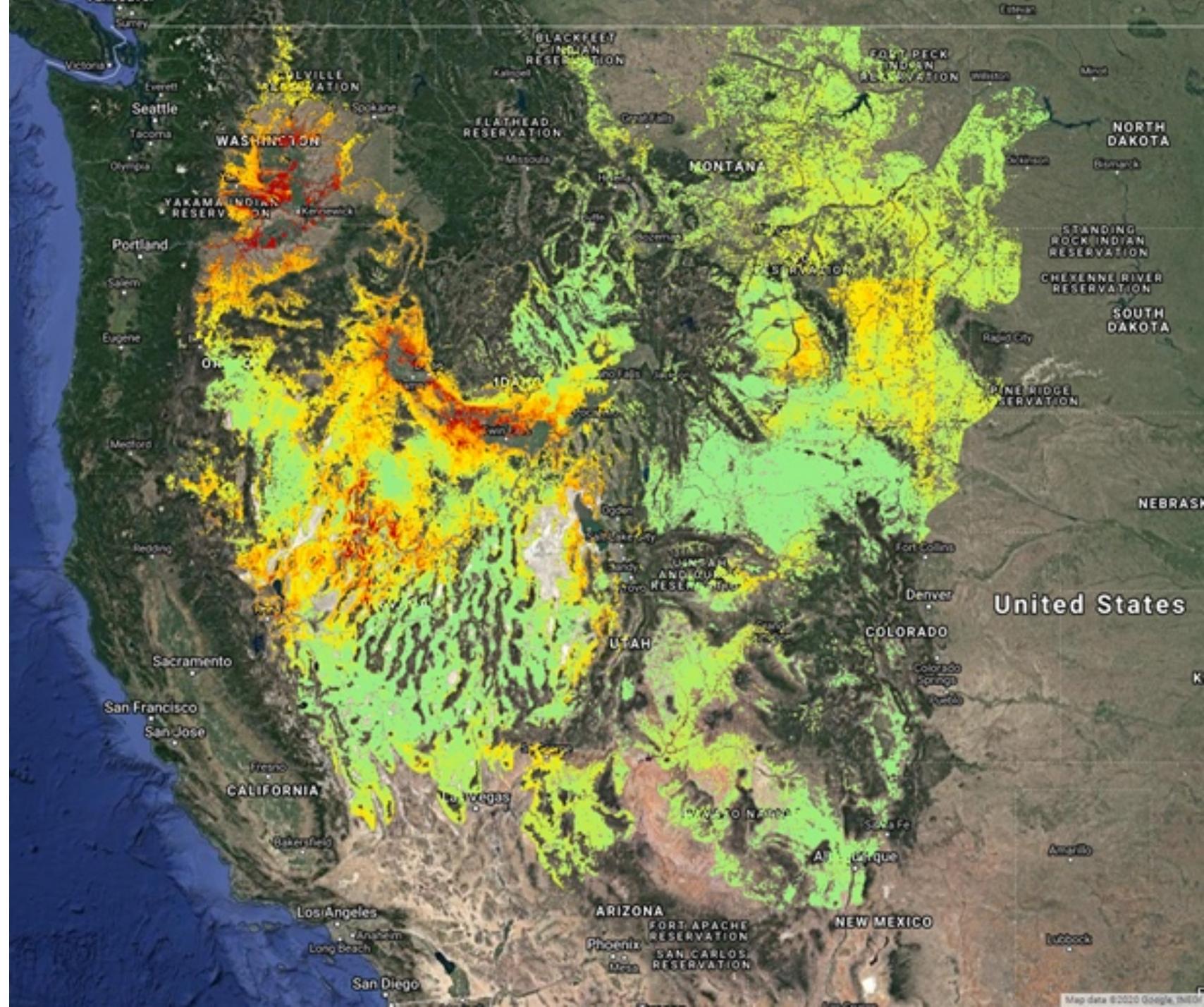


6. Fund projects, track outcomes, adapt over time, and grow momentum with success stories





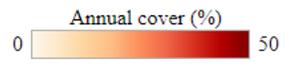
WESTERN
GOVERNORS'
ASSOCIATION



Rangeland Analysis Platform ^{BETA}

Vegetation Cover ⓘ

Landcover type Year
Annual cover ▾ 2016 ▾ ▶



Opacity

Exclude croplands, development, & water

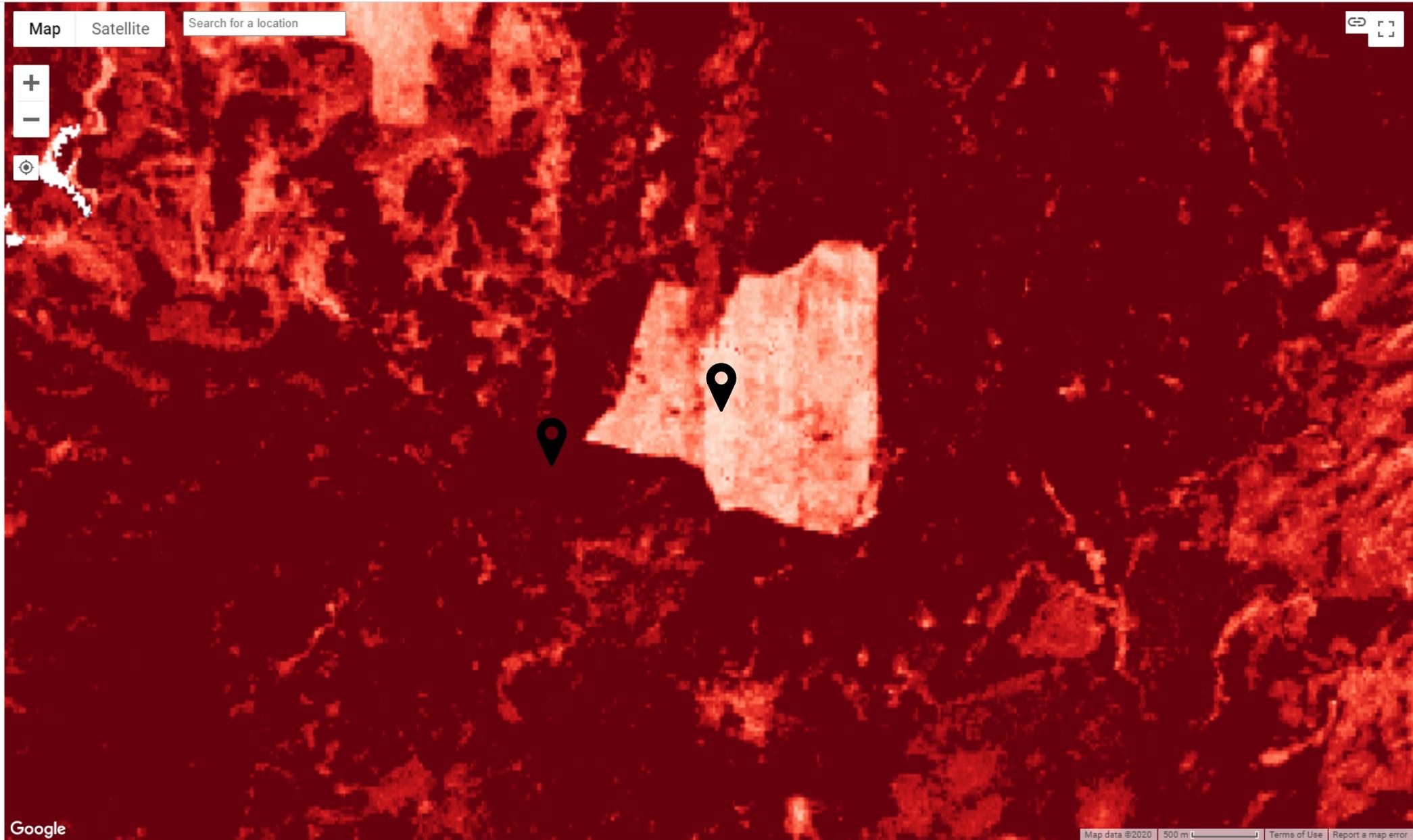
Display fire boundaries for selected year (1984 to 2016) ⓘ

Draw features

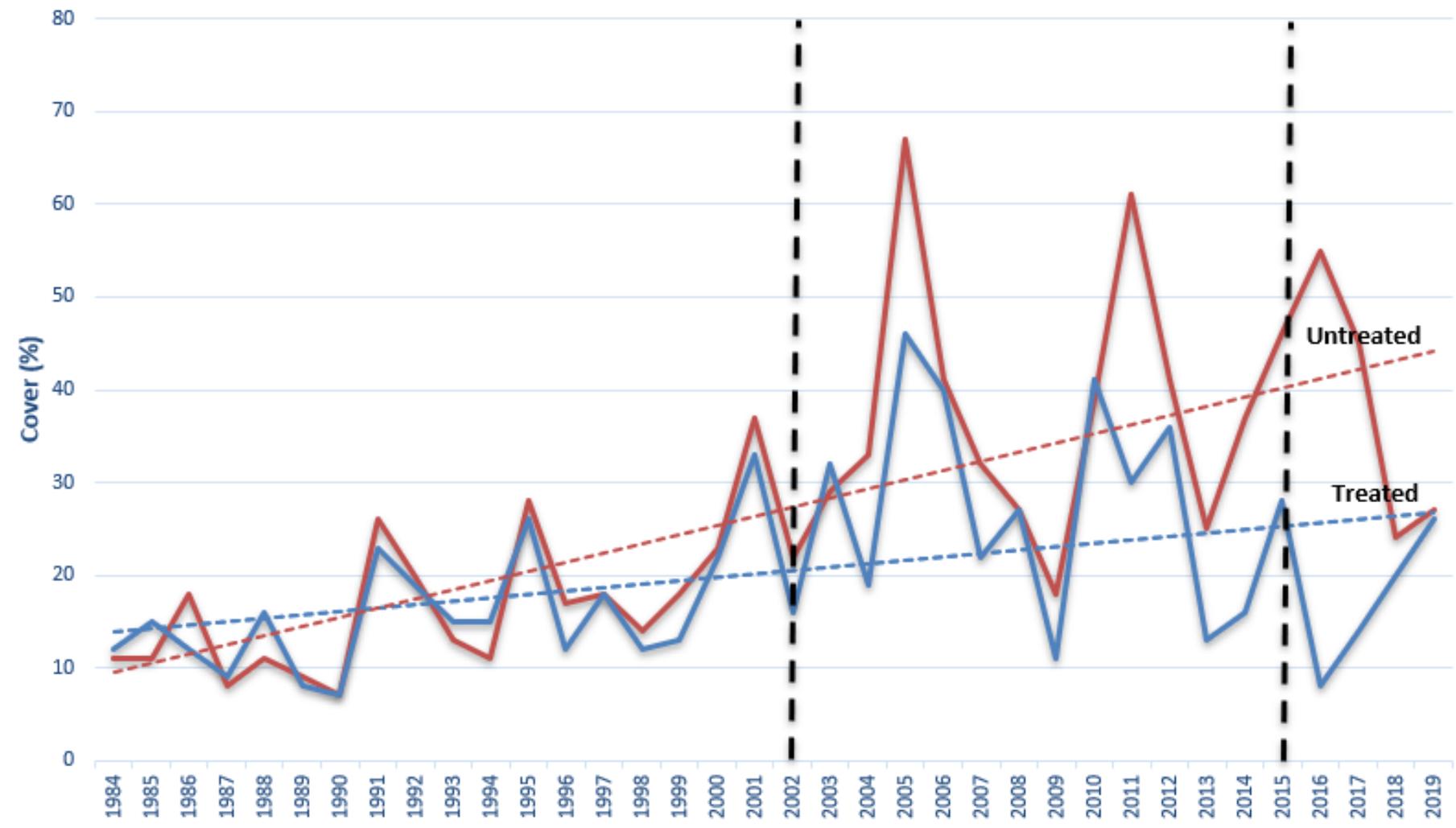
Clear map

Upload shapefile

Calculate time series



Annual Forb & Grass Cover (1984-2019)



Resources

- Spatial data: <https://rangelands.app/>
- Webinar on RAP applications for annual grass management:
<https://youtu.be/PwnlpoD7WyQ>
- Idaho Cheatgrass Challenge materials:
<https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/id/newsroom/?cid=nrcseprd1534028>



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Discussion & Questions

