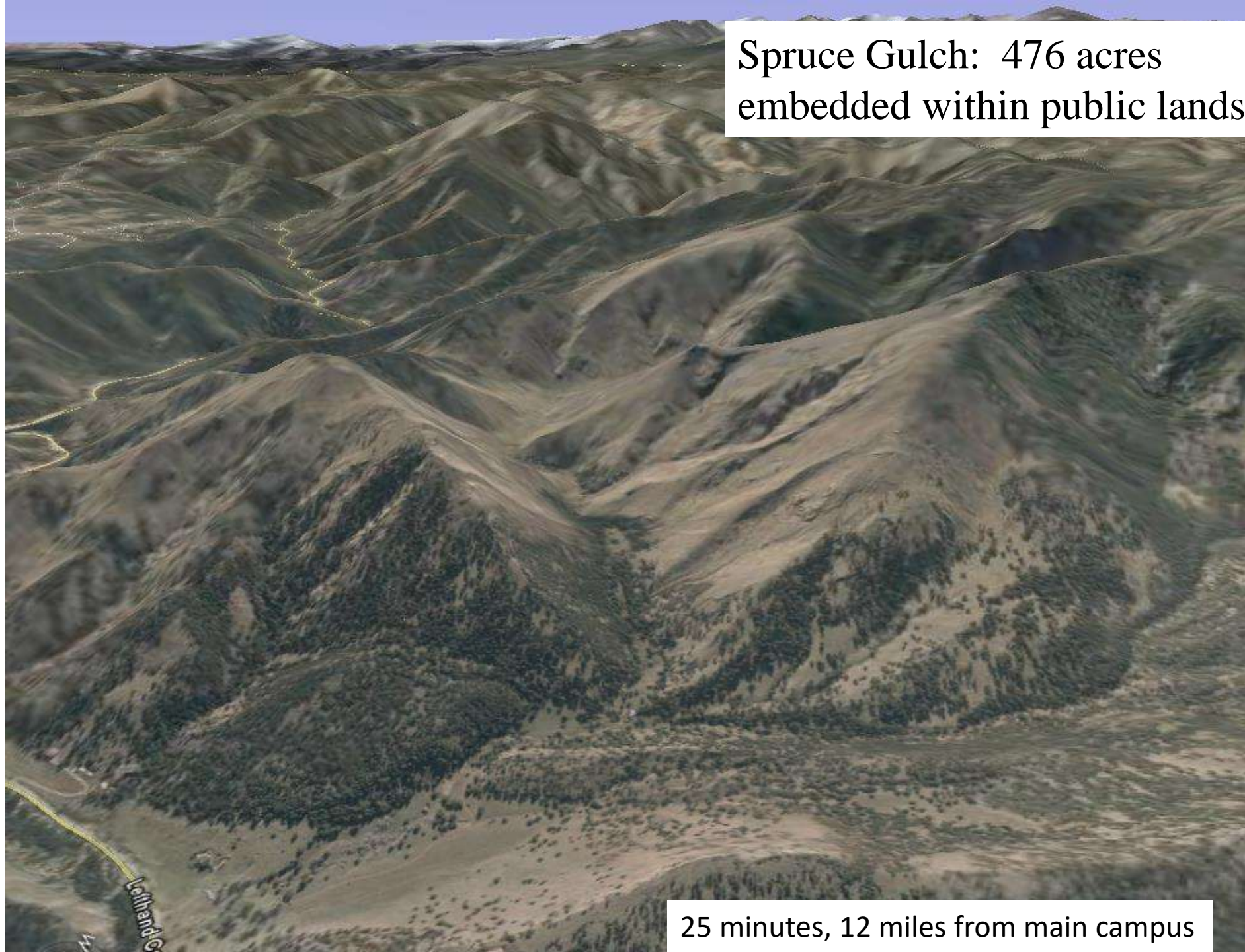


The Spruce Gulch Wildlife and Research Reserve: CU's new research, education, and outreach site



Photo by David Knochel

Spruce Gulch: 476 acres
embedded within public lands.



25 minutes, 12 miles from main campus

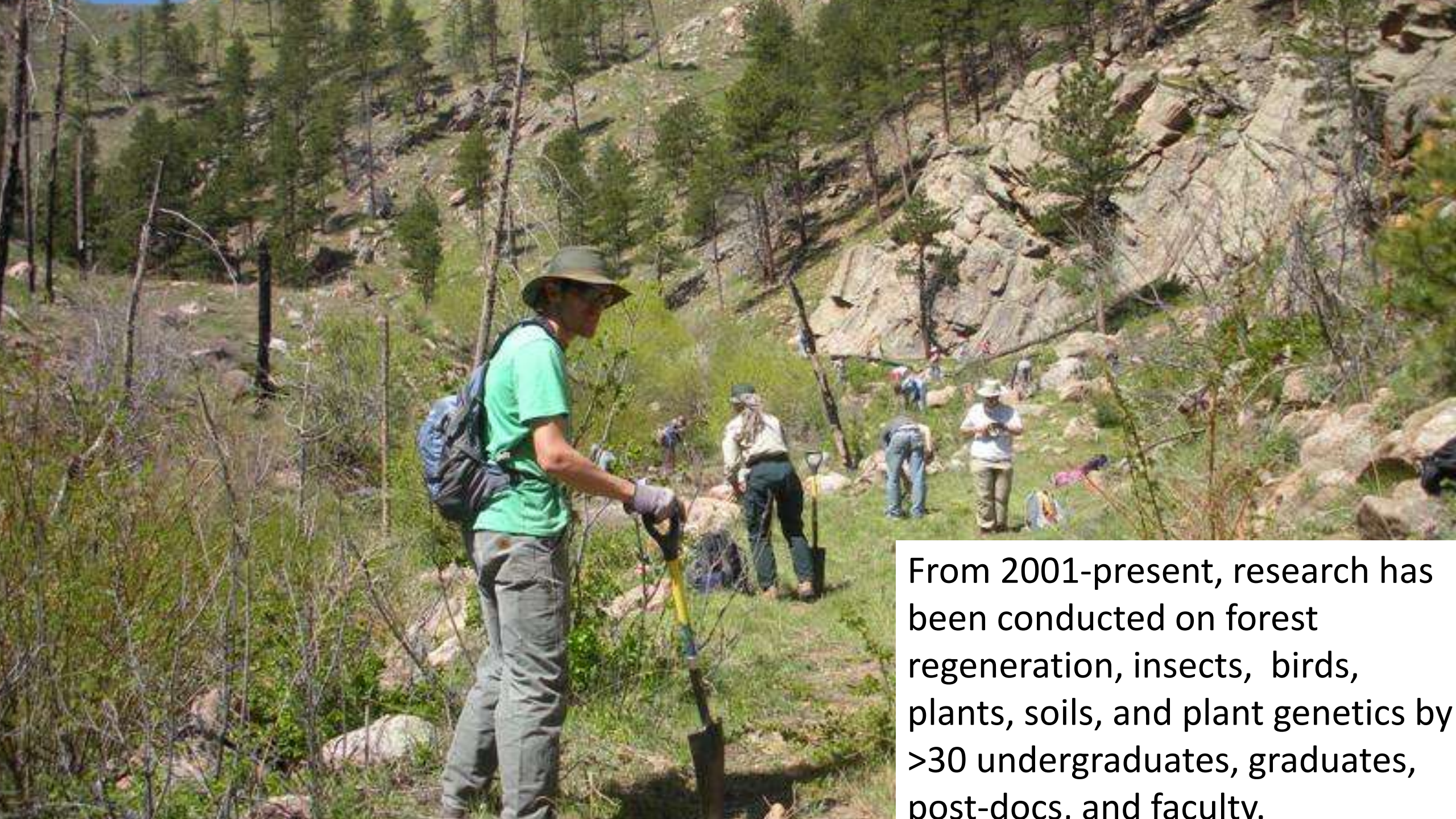
Portions of Spruce Gulch has been Linda Holubar Sanabria's family's mountain ranch for ~100 years



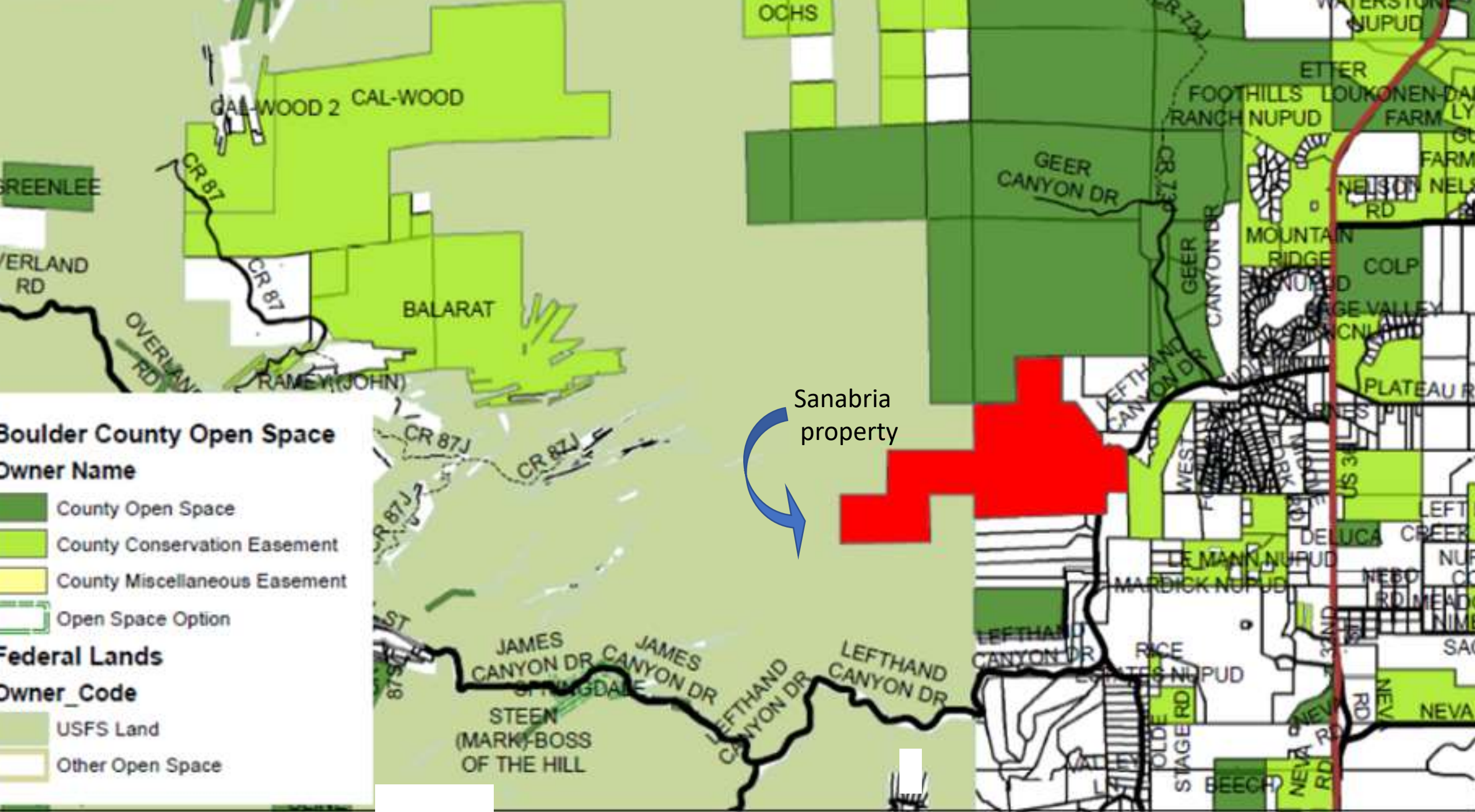


Holubar Mountaineering was started by husband and wife Roy & Alice Holubar in 1947 in Boulder, Colorado. The company has a legendary past, as well as the honor of being the first American Outdoor/Mountaineering brand.

Together they created many of the innovations that are now industry standards; being the first utilize lightweight nylon to fabricate backpacks, tents, and ultimately outerwear. Originally born from a love of the outdoors, almost 75 years later the brand continues to create products with the same passion.



From 2001-present, research has been conducted on forest regeneration, insects, birds, plants, soils, and plant genetics by >30 undergraduates, graduates, post-docs, and faculty.





Portion of Lefthand Creek now
part of Reserve (photo from the
Watershed Center)

USFS

Heil Ranch

Private

Entire watershed includes
Heil + USFS + Private holdings.

Spruce Creek

LEFTHAND
CANYON DR

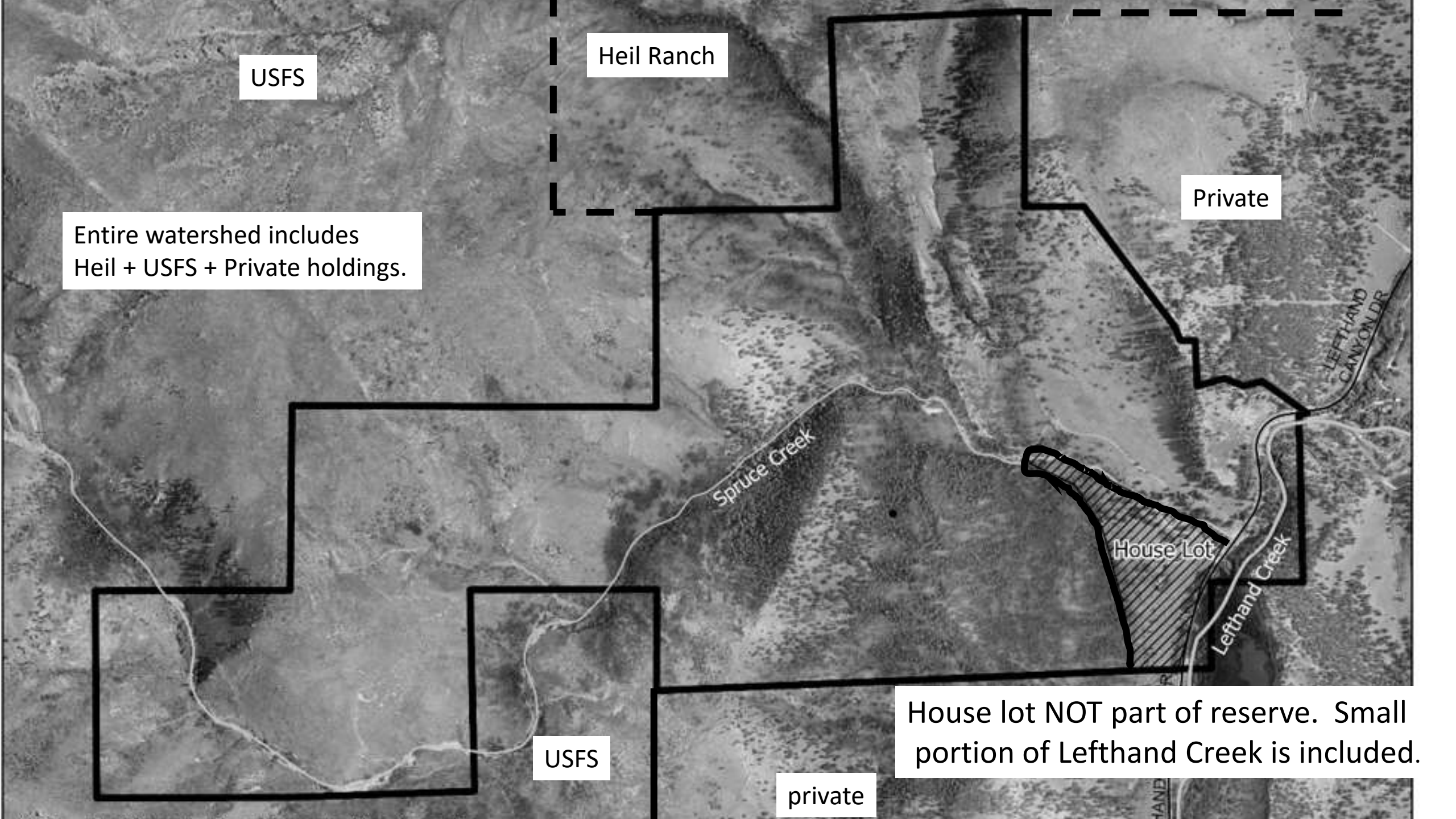
House Lot

Lefthand Creek

House lot NOT part of reserve. Small
portion of Lefthand Creek is included.

USFS

private





Spruce Gulch: A landscape sculpted by extreme events...with legacy effects:

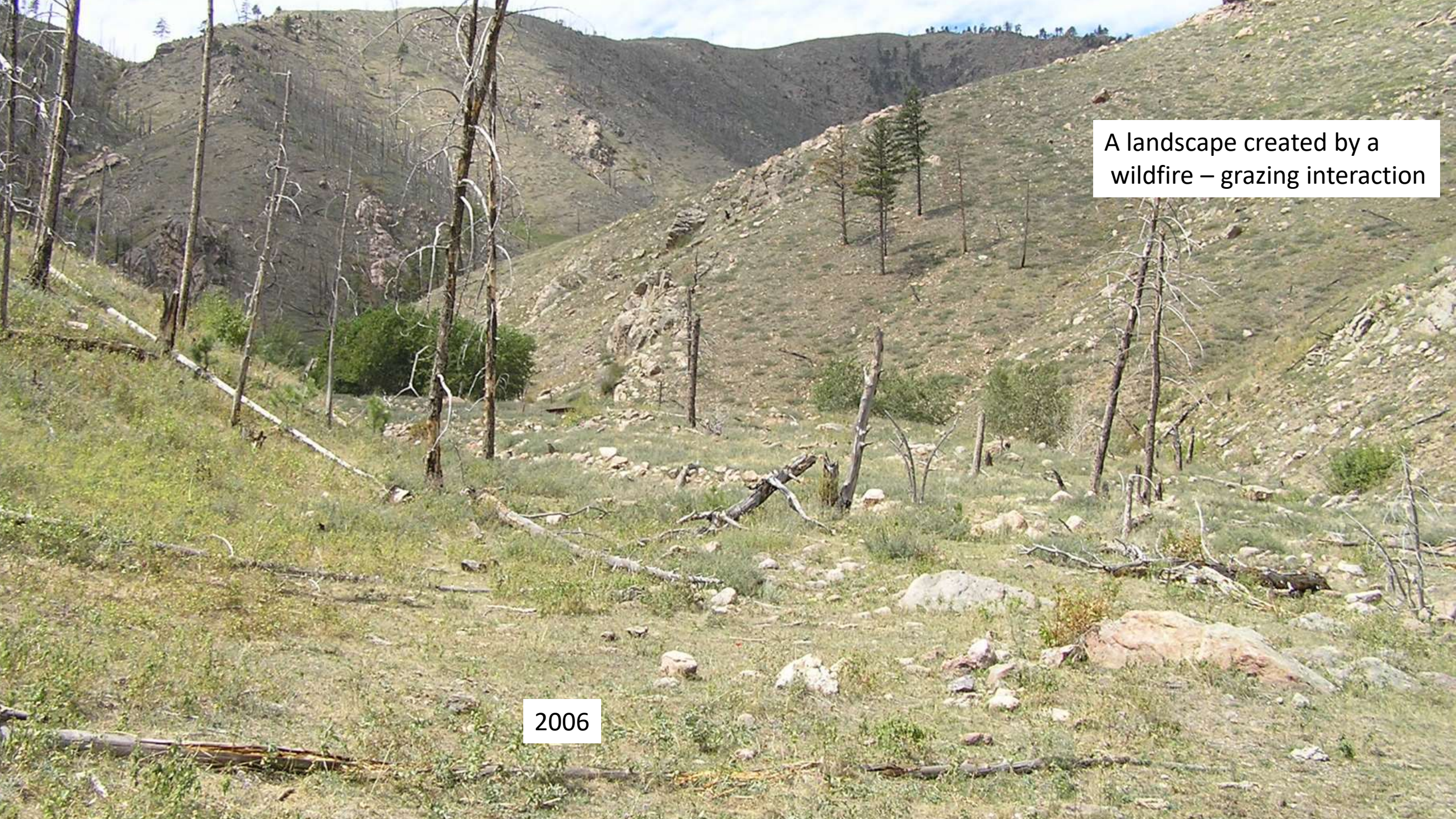


Overland Fire 2003: Runoff the following spring.





Extreme events may be rare...but they reoccur.
Outcomes are influenced by management.



A landscape created by a wildfire – grazing interaction

2006



2024
Meadow
and
hillslope on
your right
is CU land;
Left side is
USFS

2006



2024



Share the trail! (400 ft from Lefthand Canyon Dr.)



This reserve, in conjunction with USFS and Heil Ranch Open Space property, creates a major wildlife corridor.
The Spruce Gulch drainage lacks any roads or functional human infrastructures.

Yield to trail occupants





Spotted knapweed (purple flower) and myrtle spurge (yellow-green mats) are two 'to be eradicated' plant species in Spruce Gulch.

“Wicked Weed of the West”

“Spotted knapweed is driving out native plants and destroying rangeland, costing ranchers millions. Can anybody stop this outlaw?” Joe Alper - Smithsonian Mag., 2004

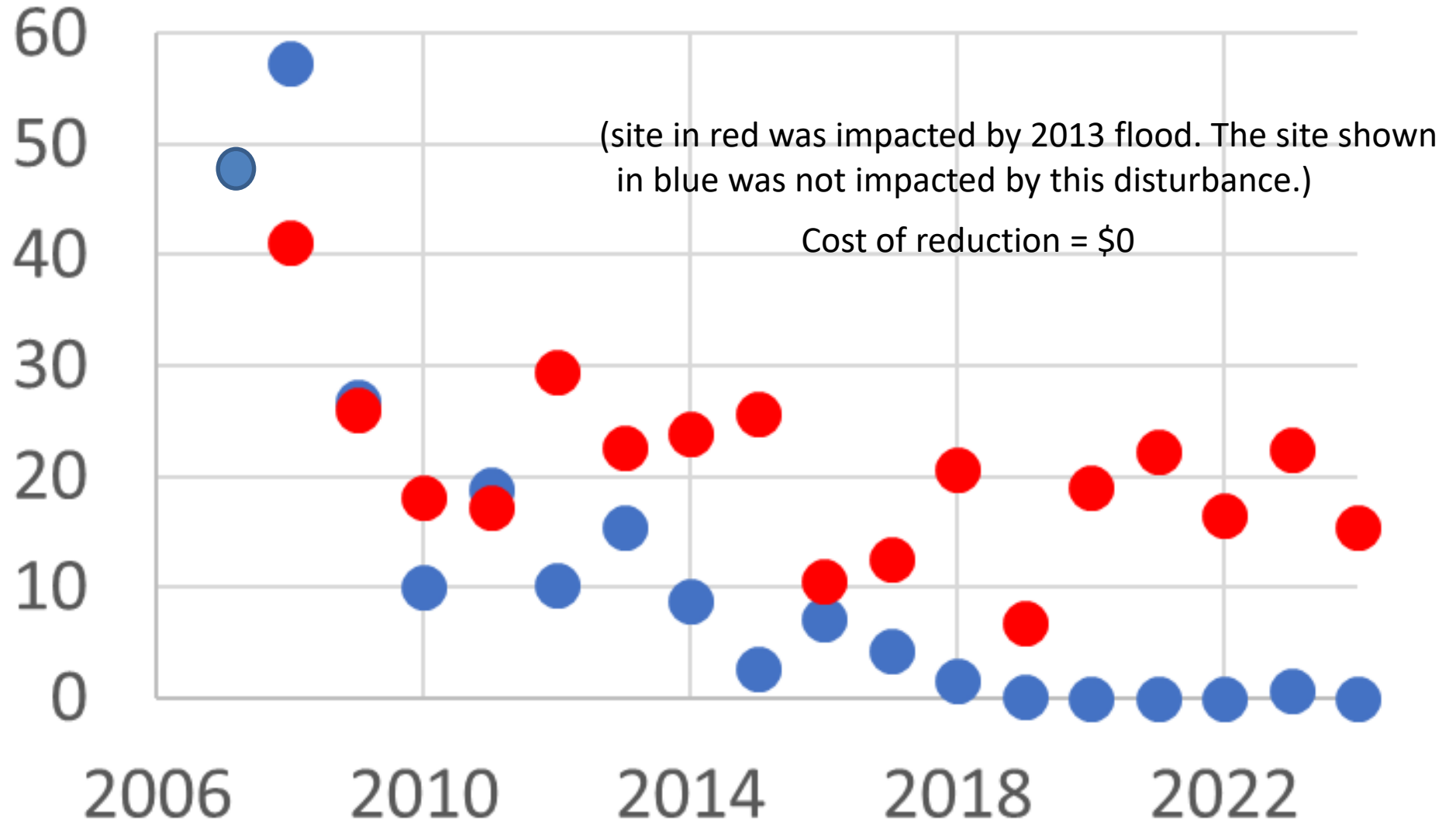


A new sheriff in town?

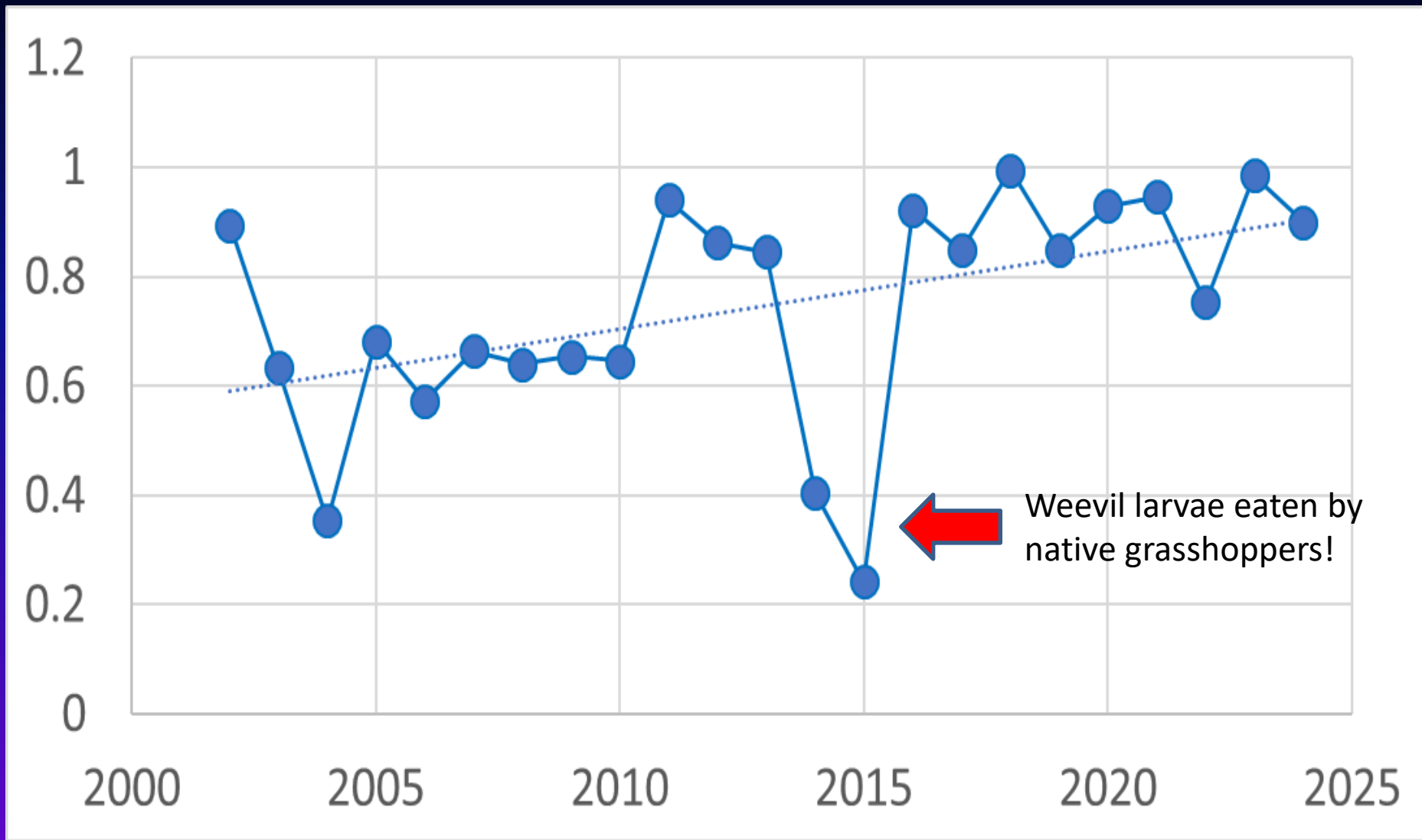


Knapweed densities at two monitoring sites, 2007-2024. (management was limited to biological control insects only)

Stem densities per square meter

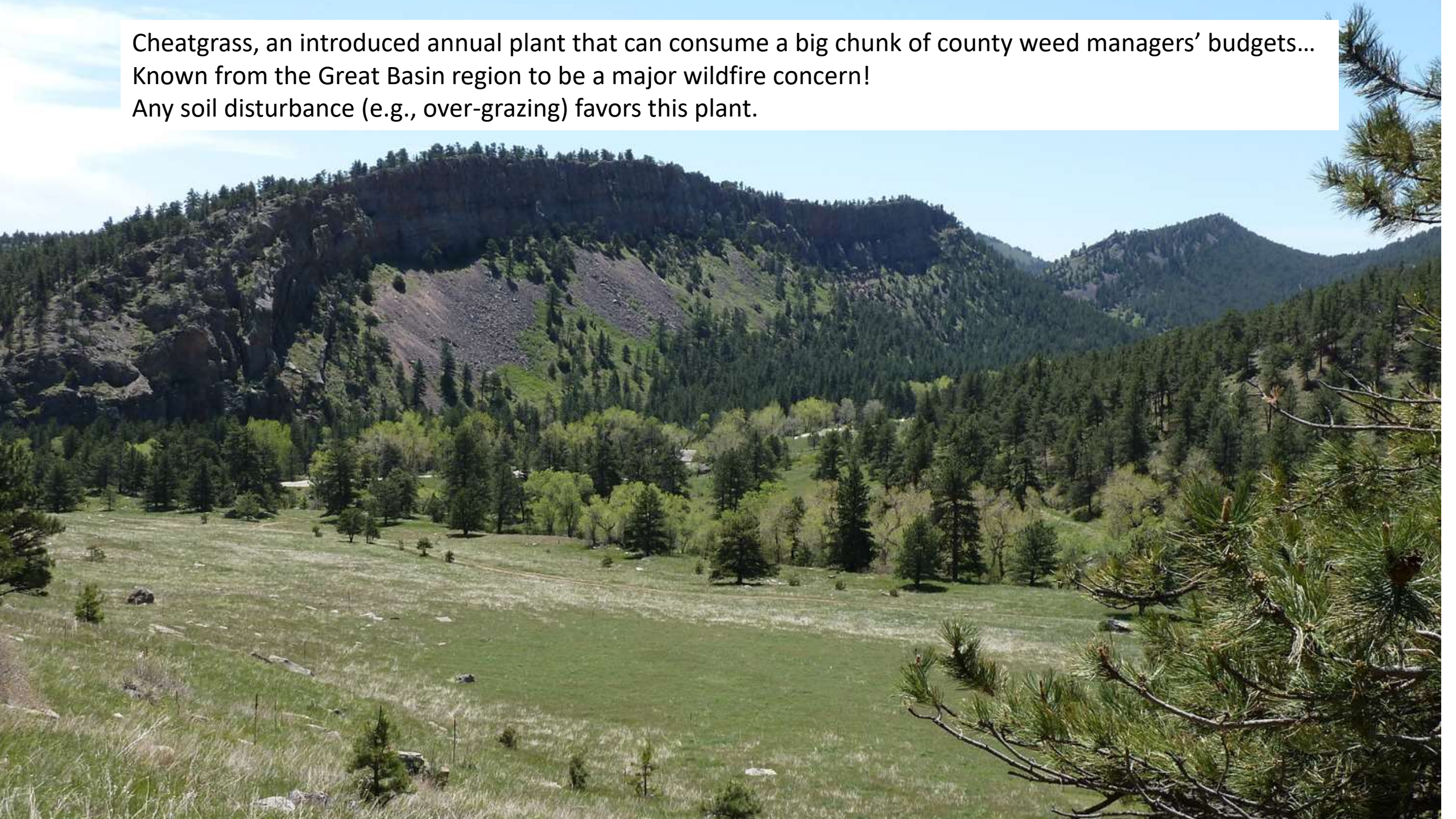


Five insects involved: Weevil larvae per seed head of spotted knapweed, 2002-2024



(counts from ~ 7000 seed heads)

Cheatgrass, an introduced annual plant that can consume a big chunk of county weed managers' budgets...
Known from the Great Basin region to be a major wildfire concern!
Any soil disturbance (e.g., over-grazing) favors this plant.



Cheatgrass: 2011-present

- Eight years of data collected over a 14 year interval:
- Over 54,000 observations made by Dr. Janet Prevey in study to date....



June 2011

total vegetation cover & relative cheatgrass cover

(from plots with no proactive management...)

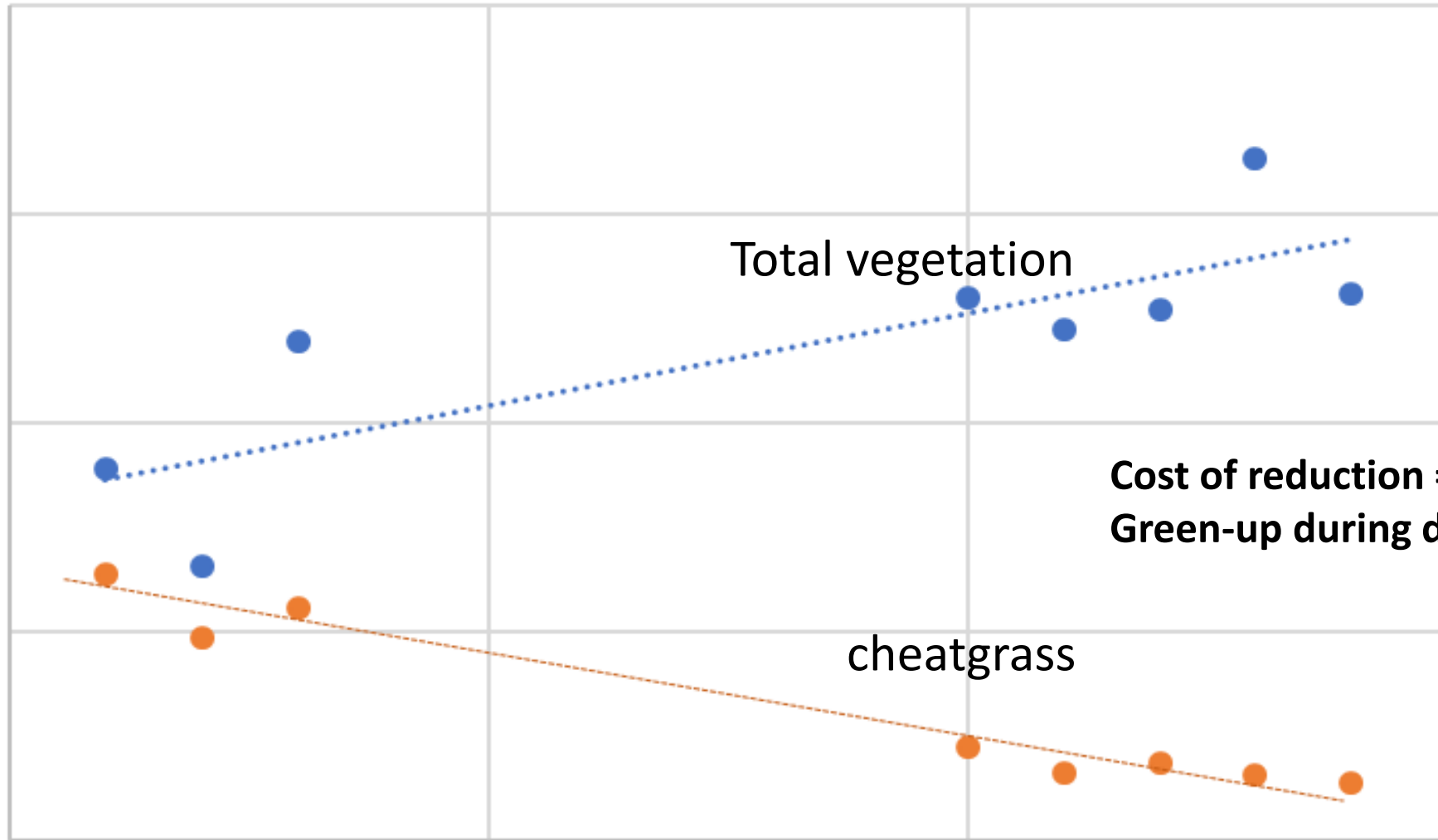
200

150

100

50

0



Total vegetation

cheatgrass

Cost of reduction = \$0

Green-up during directional drying!

2010

2015

2020

2025

> 15 YEARS AGO

VOLUNTEERS NEEDED!

**TIME TO GRAB
A SHOVEL!**

**THE POISON IVY,
CACTUS, AND
RATTLESNAKES
DARE YOU!**

**DEHYDRATION,
HEAT STROKE
SUNBURN...
HOW ELSE WOULD
YOU SPEND A
SATURDAY AM?**

Sponsored by CU, USFS,
County, WRV, VOC



It's good therapy, honest!

1000s of hours help: Why are these people so happy??



"People say think globally, act locally. Well, if you think globally, it is overwhelming and you do not have enough energy left to act locally. Just act locally and see what a difference you can make!"



Jane
Goodall

A restoration
action good for
your health,
good for the
community,
good for the
environment.

The Research Reserve is the potential home for citizen science and land stewards

- 1) Working field trips: A chance to see and learn about what the Front Range might look like when we develop sustainable management programs...in return for a bit of landscape work.
- 2) We also could use some new leaders (Docents, “land stewards”).
- 3) We want to know ‘who’s there’, ‘why are they are there’, how do they impact other species and ecosystem services? (Plant species, butterfly species, breeding bird lists, etc.)
- 4) We welcome environmental advocacy group projects consistent with conservation and research goals. Reintroductions of native species tentatively welcomed...

(Sorry, no prairie dogs or grizzlies!)

The vision of Linda and Sergio Sanabria: The Vision of CU:

Spruce Gulch is a canvas upon which to sculpt a model system that can maximize the conservation and ecological services for the Front Range.

Front Range Sustainable Landscapes **Working** Groups consisting of academics managers, policy makers and stakeholders:

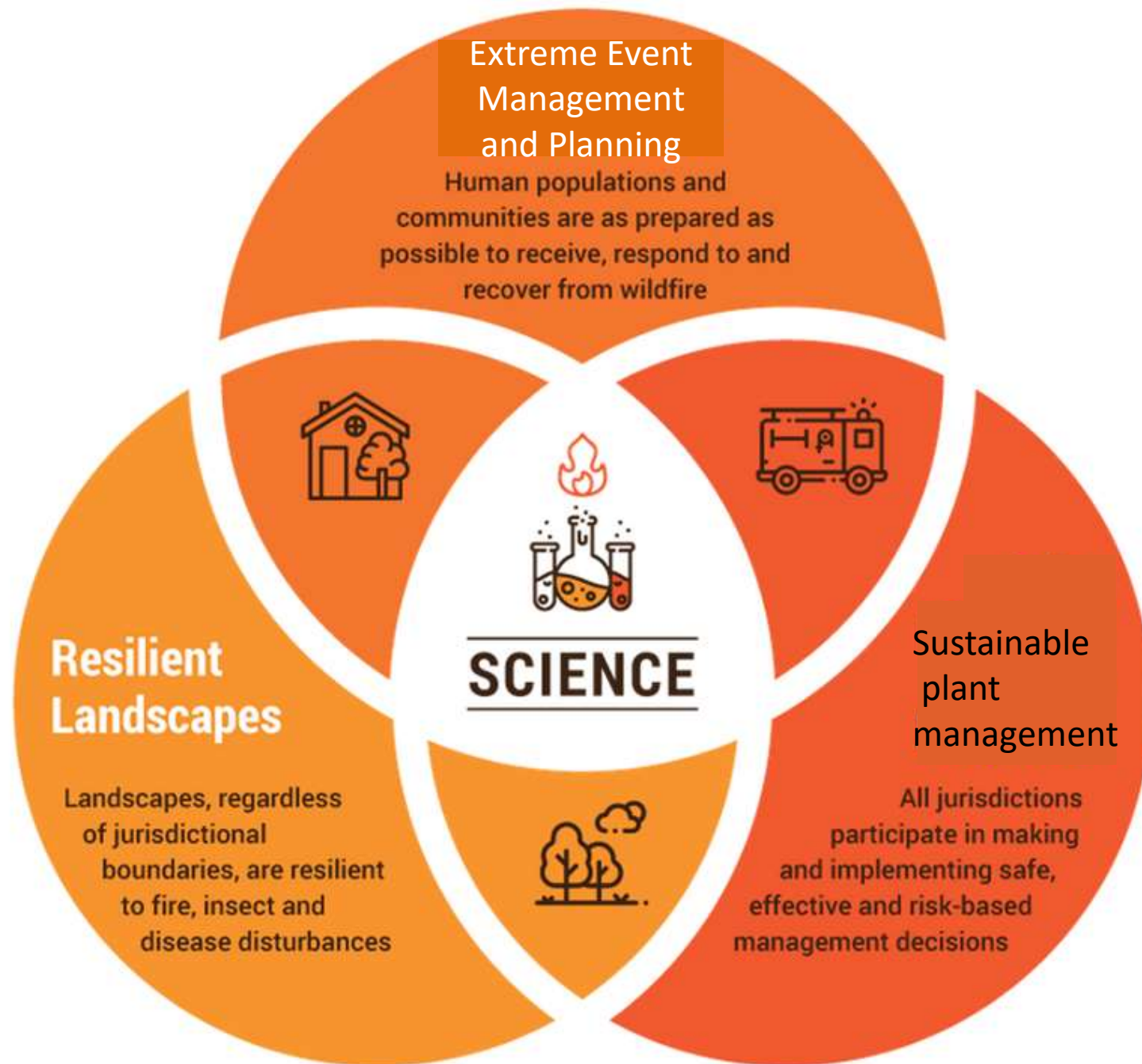
Overlapping topics:

LOCAL Biotic responses to climate change (including nature-based climate solutions).

LOCAL Ecological resilience to extreme events.

LOCAL Invasive species; grassland sustainability.

LOCALLY, Empowering land stewards; enhance cultural values.



The Boulder Fireshed effort has demonstrated an effective approach needed to address a specific sustainability issue.

Management needs to be Science based.

Spruce Gulch will attempt to be a model system for the “unbuilt environment” adjacent to built environments.

CU's Commitment:

"... a blueprint has been drawn up to decarbonize the campus." ...

A PART OF THAT BLUEPRINT CAN BE THE 'RECARBONIZATION' OF CU LANDS CAPABLE OF MAINTAINING OR ENHANCING CARBON STORAGE... (both built and un-built environments can do this...)

"Our goal is not just to become a sustainable campus and help our local communities be sustainable. We'd like to help Colorado become the most sustainable state in the country."

Chancellor Justin Schwartz, CU Boulder Today, March 5, 2025

The land and opportunity provided by Linda Holubar Sanabria is an unprecedented, magnificent donation that has and will benefit CU's teaching, research and outreach mission and... has the potential to be a transformative program to advance environmental sustainability initiatives for our community.

THANKS!

Spruce Gulch Participating
faculty and students at CU to date:

INSTAAR

EBIO

GEOG

GEOL

CU Museum

ANTH

+ Dr. Prevey, USGS



Timothy.seastedt@Colorado.edu