Using Grassland Carbon to Finance Real Estate Conservation

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- University of Denver - BSBA Marketing
- Supply chain logistics within the outdoor industry
- CU Boulder - Masters of Environmental Studies
- TNC- Colorado Chapter – Carbon financing for conservation easements
- Colorado Cattlemen's Agricultural Land Trust (CCALT) – Conservation easement transactions
- TNC- Southern High Plains Initiative (SHPI) – Real estate transactions (conservation easement and Purchase, Protect, Resell)

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Carbon Credits: What Are They?

- A credit is a promise that 1 ton of CO2 equivalent emissions have been removed/ avoided.

- All credits should mean the same thing- <u>regardless of how they are generated.</u>

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Carbon Markets Overview

- Compliance
  - “Cap and Trade”
  - Many compliance markets will set “floor” price
    - California market: 2022 “floor” price of $19.70/ton
    - California market: Trading price in 2022 was $28.26/ton, up from $16.68/ ton in 2020

- Voluntary
  - Not as large as compliance markets, but much more flexible
  - Buyers must trust the organization issuing credits- that the reduction they are purchasing actually occurred.
  - Many registries with their own protocols.

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Voluntary Carbon Market

- Massive growth in recent years
  - Voluntary market cap broke $2B for the first time in 2022
- Includes all project types
- “Forestry and Land Use”.
  - Includes REDD+ and other large-scale, global land-use projects that command lower prices per credit.
- People like to support credits generated in developing countries, but these credits are notoriously unreliable.

Figure 1. Voluntary Carbon Market Size by Value of Traded Carbon Credits, pre-2005 to 31 Dec. 2021

Figure 2. Voluntary Carbon Market Transaction Volumes, Prices, and Values by Category 2020 - 2021

	2020			2021		
	VOLUME (MtCO2e)	PRICE (USD)	VALUE (USD)	VOLUME (MtCO2e)	PRICE (USD)	VALUE (USD)
FORESTRY AND LAND USE	57.8M	$5.40	$315.4M	227.7M	$5.80	$1,327.5M
RENEWABLE ENERGY	93.8M	$1.08	$101.5M	211.4M	$2.26	$479.1M
CHEMICAL PROCESSES / INDUSTRIAL MANUFACTURING	1.8M	$2.15	$3.9M	17.3M	$3.12	$53.9M
WASTE DISPOSAL	8.5M	$2.69	$22.8M	11.4M	$3.62	$41.2M
ENERGY EFFICIENCY / FUEL SWTICHING	30.9M	$0.98	$30.4M	10.9M	$1.99	$21.9M
HOUSEHOLD / COMMUNITY DEVICES	8.3M	$4.34	$36.2M	8.0M	$5.36	$43.3M
TRANSPORTATION	1.1M	$0.64	$0.7M	5.4M	$1.16	$6.3M
AGRICULTURE	0.5M	$10.38	$4.7M	1.0M	$8.81	$8.7M

Citation: *Forest Trends’ Ecosystem Marketplace. 2022. The Art of Integrity: State of Voluntary Carbon Markets, Q3 Insights Briefing. Washington DC: Forest Trends Association.*

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Grassland Carbon Projects

- Two types of grassland carbon project
  - Avoided conversion
  - Improved management
- Focuses on below-ground biomass instead of above.
  - Grasslands are very resilient carbon sinks.

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Conservation Easements 101

- A conservation easement is a real property right that is severed from the full bundle of property rights.
- Landowners still own the surface and can continue to use the land in ways not prohibited by the easement.
- Easement is held by a third-party organization, typically a “land trust”.
- This is the primary tool used in private land conservation (real estate).
- Easements often allow agricultural uses and can be heavily customized based on the conservation values being protected.
- Conservation easements, when acquired, can be expensive, often representing between 25-35% of the overall property value.

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How Can Carbon Help?

- Easements allow landowners to extract value out of their asset by selling development rights. What happens when the development rights aren't valuable enough to make the transaction worth it?
- Carbon can help either fund easement acquisition costs or layer on top of other funding, helping make the transaction more financially appealing for landowners.

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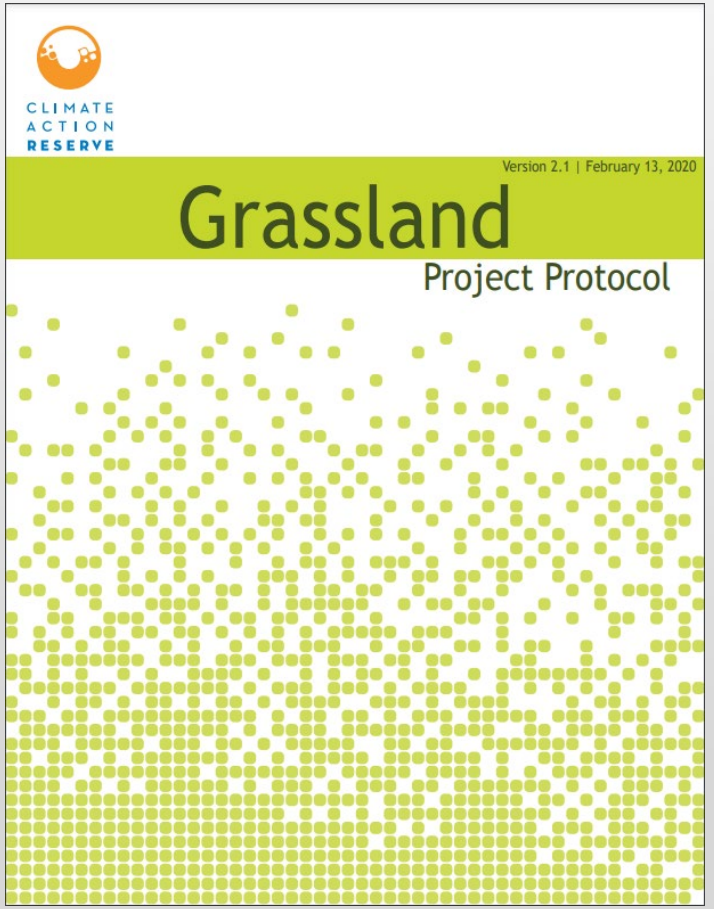
Climate Action Reserve (CAR) - Grassland Protocol

- Uses GIS analysis instead of on-the-ground sampling to estimate emission reductions (keeps costs low).
- Based on a hypothetical scenario- the ground will be tilled/ disturbed without the revenue from carbon driving conservation action.
- Very complimentary for easement projects, as they require a conservation easement and reporting can be completed by the land trust that holds the easement.
- Getting paid - verifying credits to be issued
- Project development fee structures



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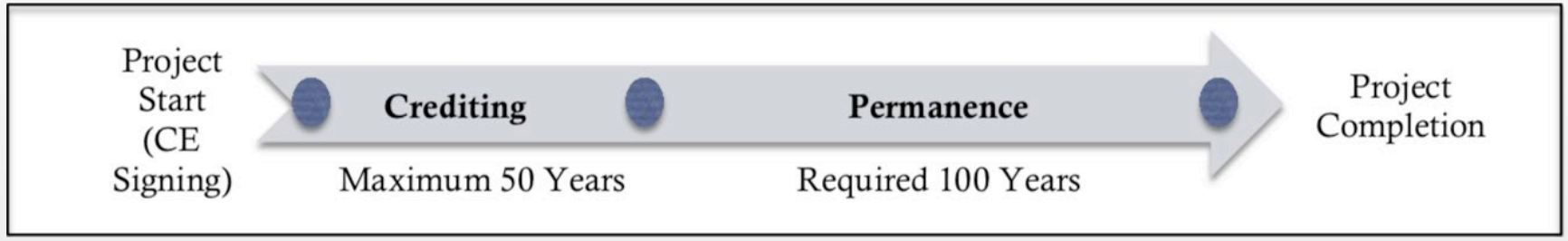

Crediting Period

Maximum 50 Years

- **Data Collection & Reporting**- Every Year
  - Acres burned
  - Fuel and electricity
  - Compost or fertilizer
  - Animal grazing days by animal type
  - Average ambient temperature during grazing season

- **Verification**- Within 2 Years of Start, Every 6 Years
  - A 3rd party organization will verify that the data reported is correct. Once complete, CAR will issue credits

- **Rangeland Health Assessment**- Prior to 2nd Verification, Every 6 Years
  - Rangeland health must be assessed according to BLM TR 1734-6

- **Grazing Plan**- Prior to 1st Verification, Every 6 Years
  - A prescribed grazing plan must be in place if no legally enforceable limits on grazing exist

Permanence Period

Required 100 Years

- Report containing the following must be submitted every 6 years
  - No reversals
  - Information related to ongoing activities
  - Changes in ownership

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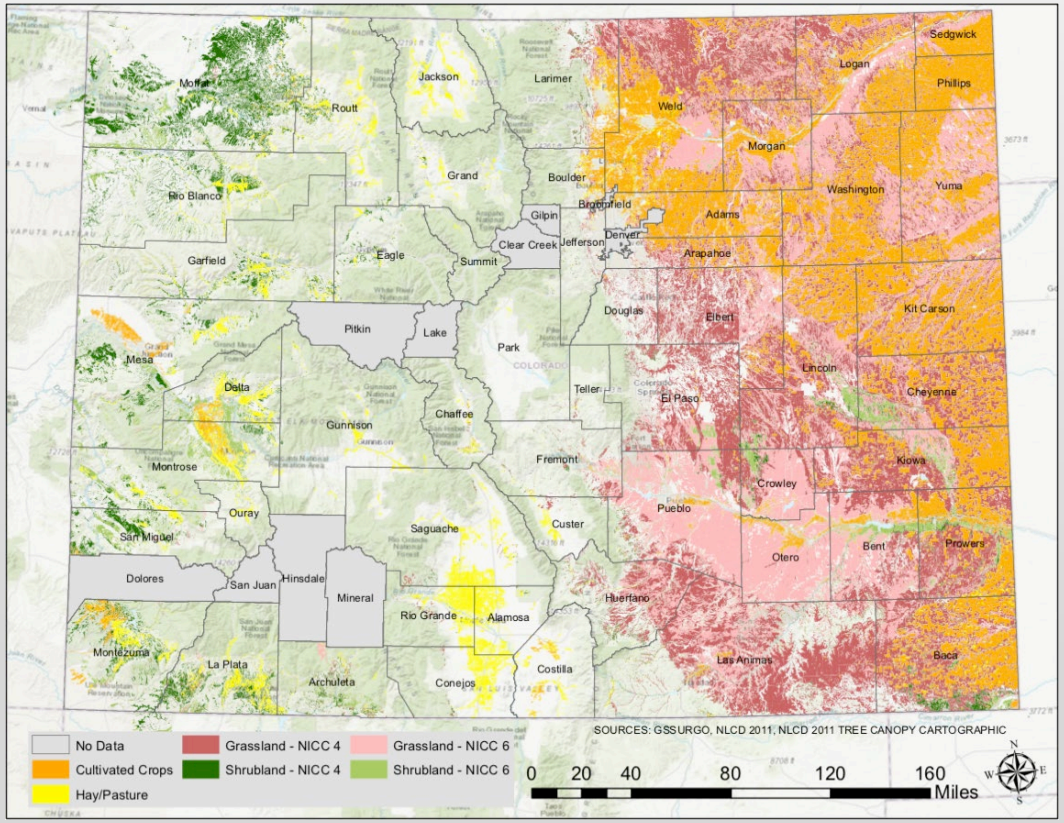
Grassland Carbon: Paying for Conservation Easements in Colorado



- A lot of opportunity for grassland carbon projects exists in eastern Colorado.
- Carbon funding can supplement other public easement funding mechanisms to make conservation more economically appealing to landowners.

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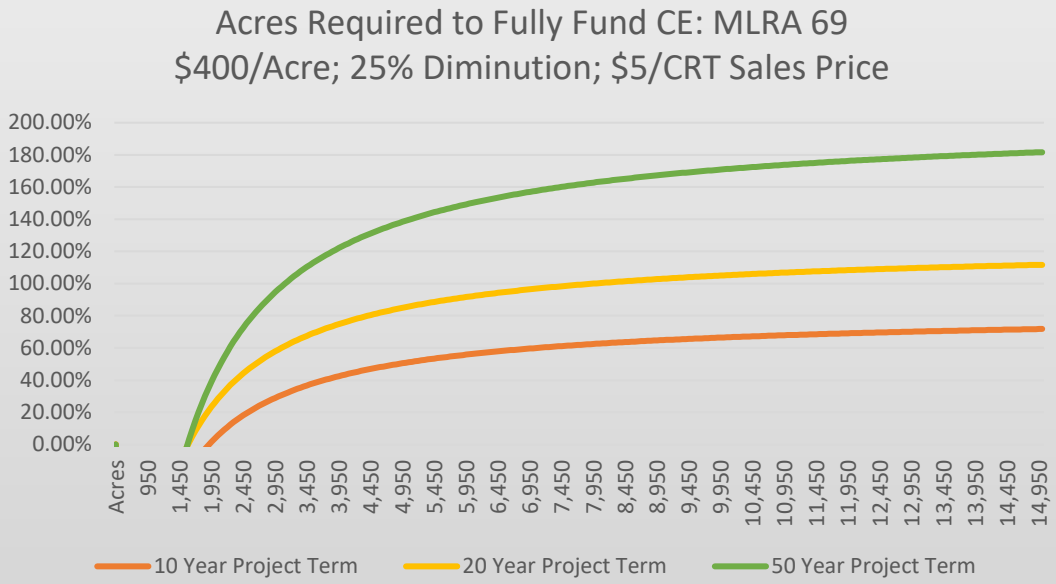
Grassland Carbon: Paying for Conservation Easements in Colorado



- Model developed with CO state tax credit in mind for approximately 50% of funding.
  - Works for bargain sale easement purchases with funding from NAWCA, ACEP-ALE, etc.
- Most revenue generated in first 20 years. SE CO example (approximate):
  - 29% in years 1-10
  - 31% in years 11-20
  - 17% in years 21-30
  - 13% in years 31-40
  - 10% in years 41-50

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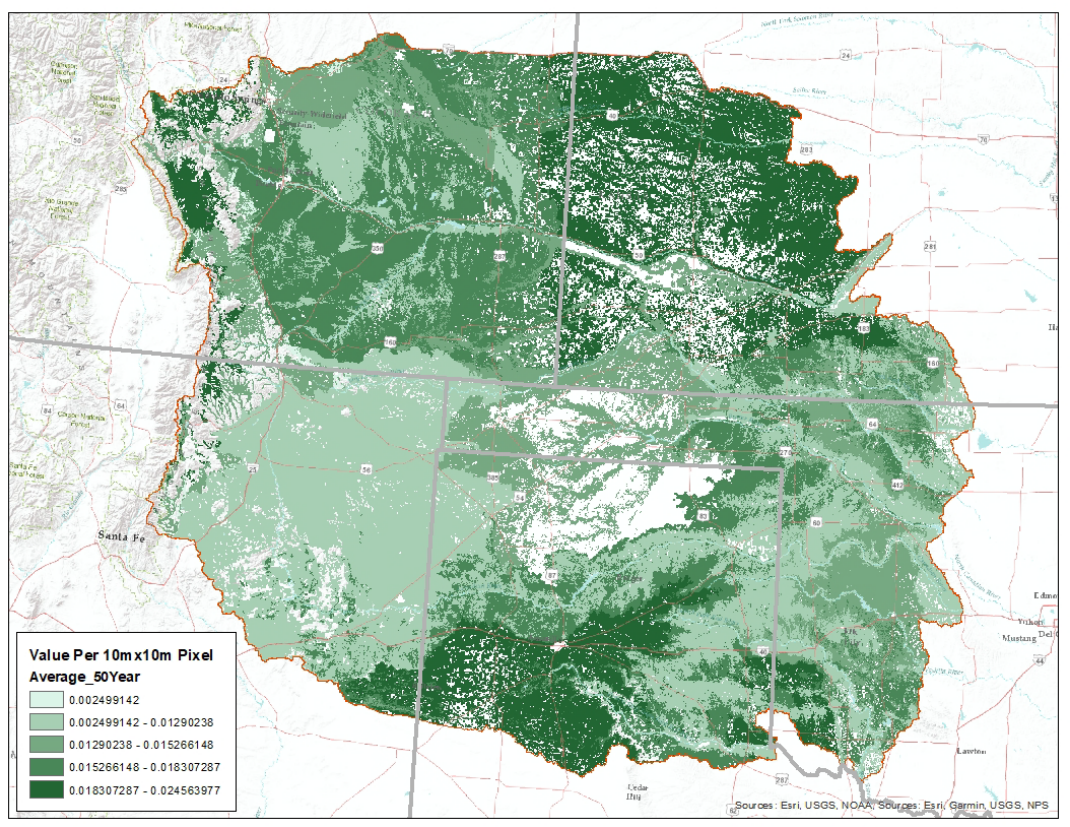
TNC Southern High Plains Initiative



- Darker represents more opportunity for avoided conversion carbon projects across the Southern High Plains.
- Carbon is one more tool to help finance conservation.

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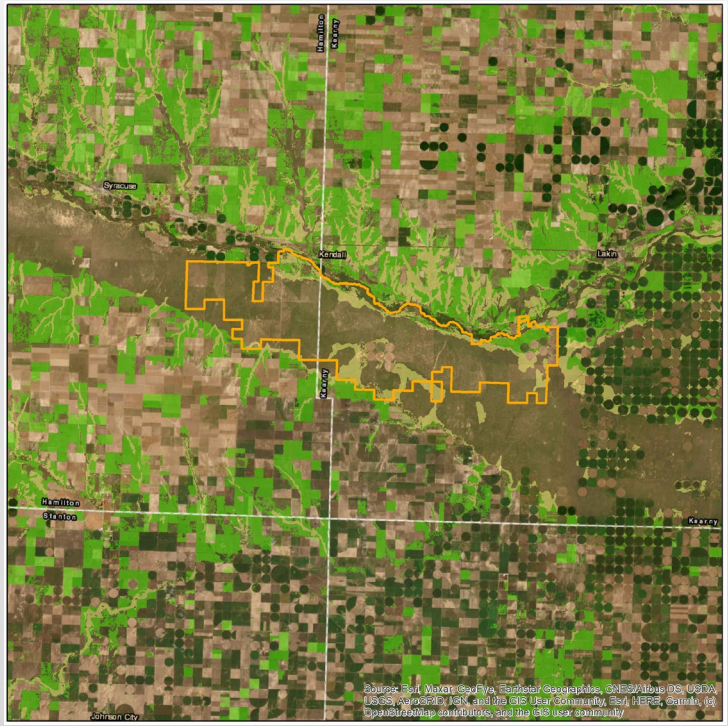
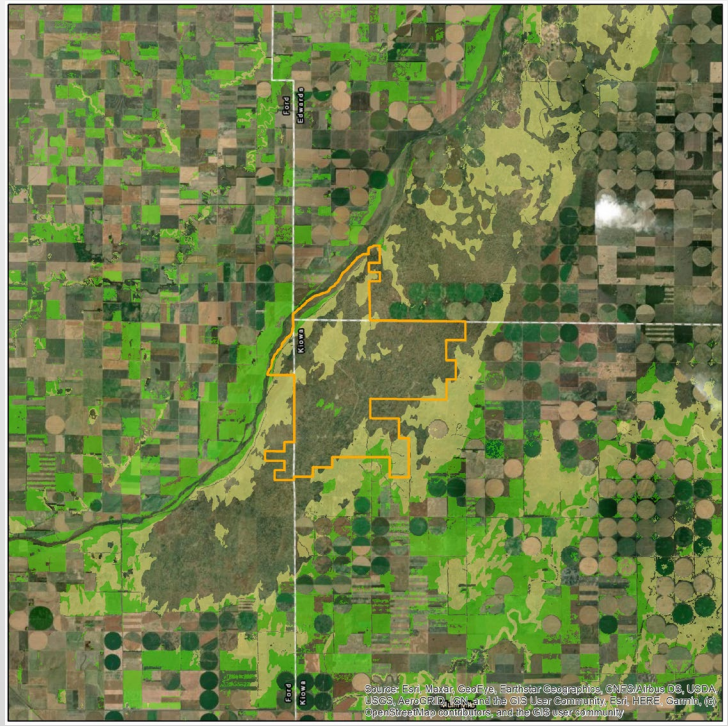
Example: Kansas Sandy Soils





Sandy soils along the Arkansas River provide limited opportunity for carbon finance under existing avoided conversion protocols.

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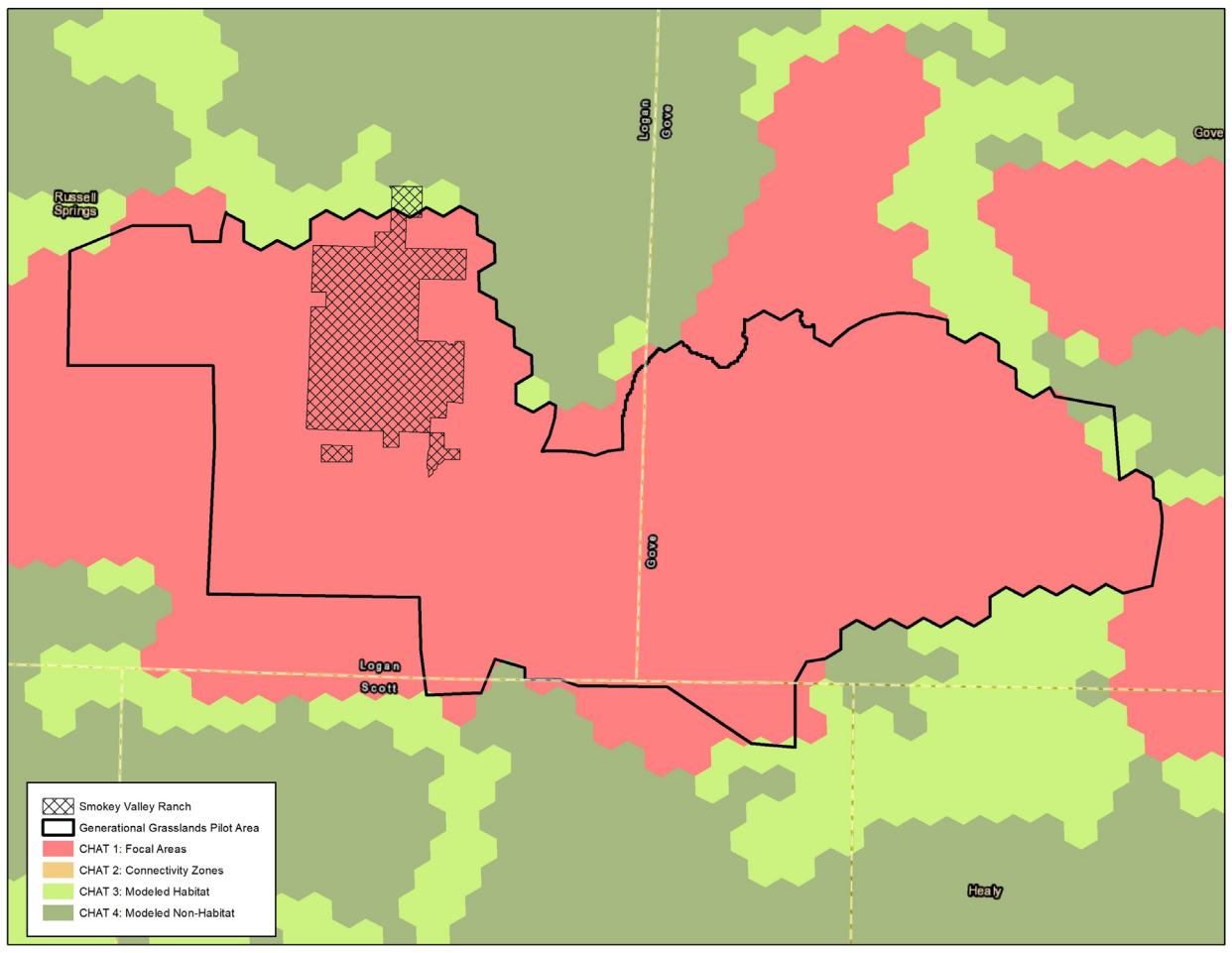
Example: Smokey Hill River Valley, Kansas



- Generational Grasslands Pilot area
- Focus on Lesser Prairie Chicken
- Easement values are generally low, ranging from 15-25% of the overall property value
- How do we provide better financial incentives for conservation?

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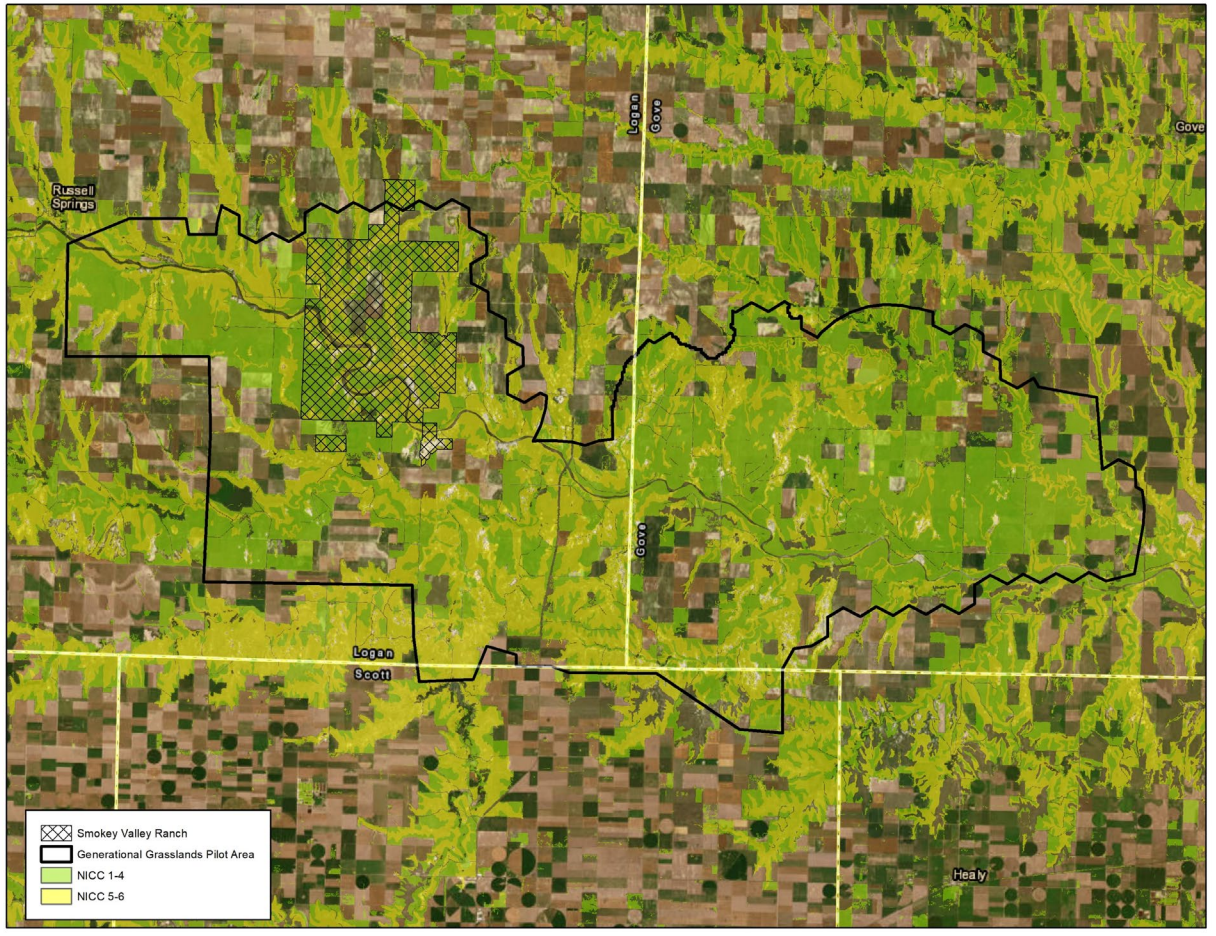
Example: Smokey Hill River Valley, Kansas



Avoided conversion carbon projects may provide necessary financial incentives for people to conserve their land in this heavily farmed landscape.

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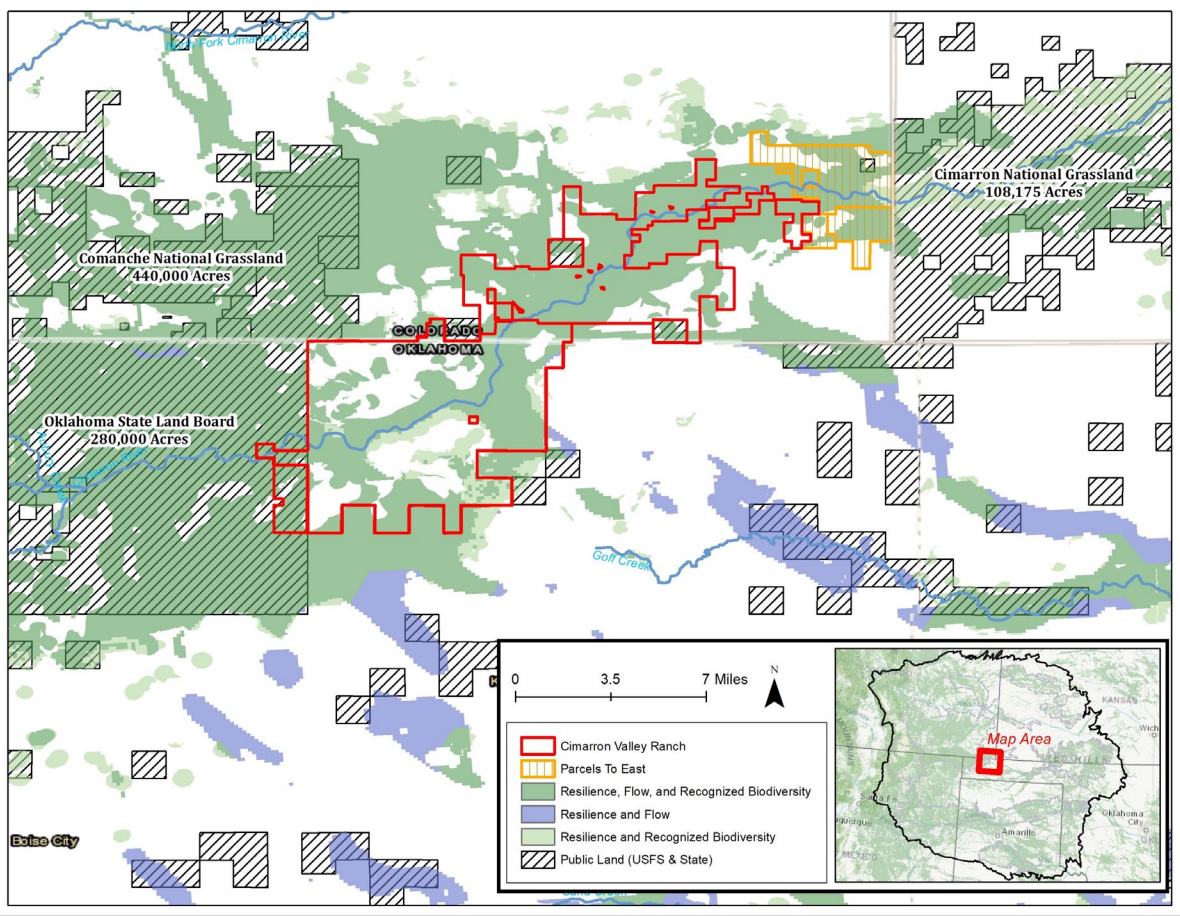
Example: Cimmaron Valley Ranch, CO/OK



Multiple new center pivots have been installed on this 45,000-acre ranch straddling the Oklahoma/ Colorado border.

The first ten years of projected revenue from an avoided conversion carbon project would have yielded more than $1M for the acquisition of a conservation easement on the Oklahoma side of the Property, permanently stopping additional farm ground development.

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Questions?

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