EVALUATING ECOSYSTEM SERVICES

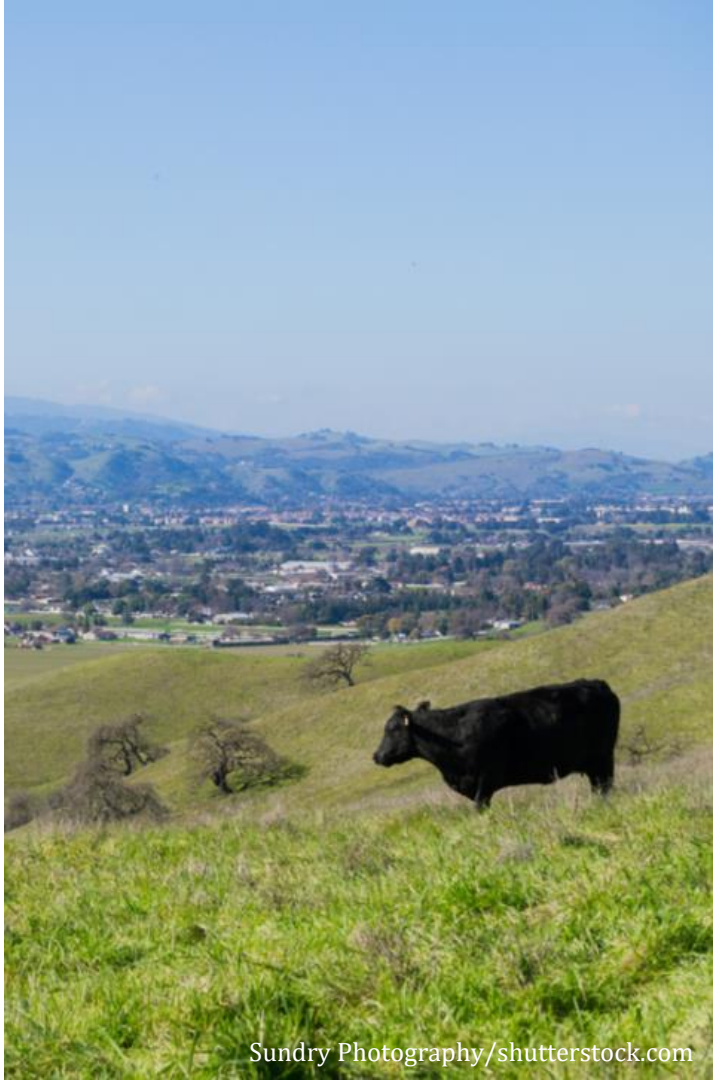
Saving America's Working Lands National Conference

April 25, 2025

CALIFORNIA RANGELAND Trust

PROTECT WHAT MATTERS

- California Rangeland Trust
  - To serve the land, people, and wildlife by conserving California's working landscapes
  - Conserved 400,000+ acres since CRT's founding in 1998
- Agricultural land in California is at severe threat of conversion, per the Farms Under Threat research published by the American Farmland Trust
  - California is on track to lose an additional 500k acres of rangeland and pastureland by 2040 compared to 2016 baseline data.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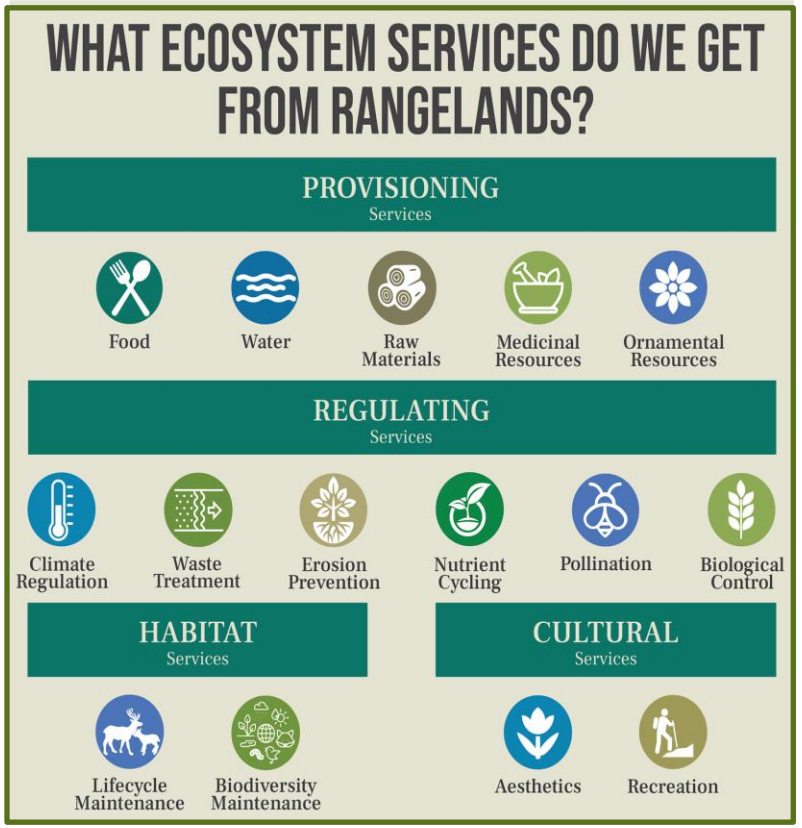
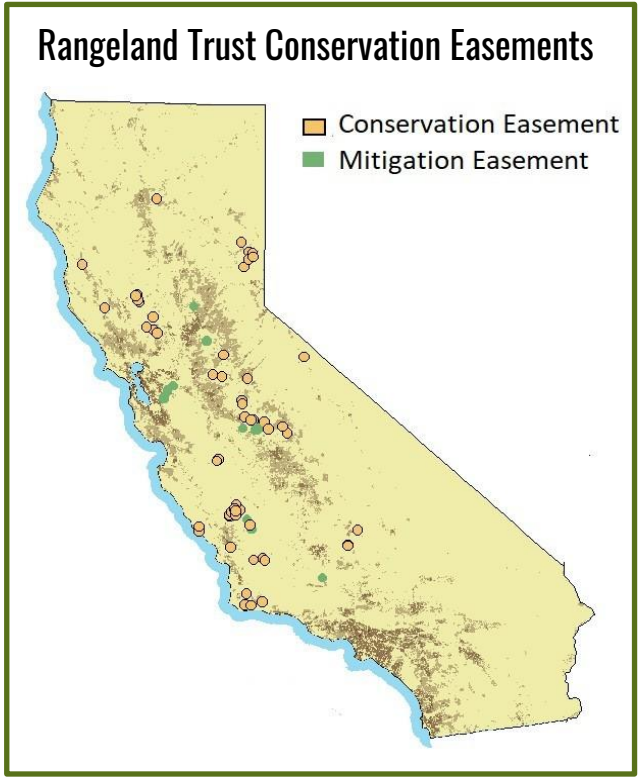
PROTECT WHAT MATTERS

- Critical to protect California's working landscapes that are at risk of development
- Led us to commission a study on ecosystem services with UC Berkeley
    - Identify economic values of ecosystem services that open space provides to the state
    - Identify the ROI of CRT's conservation easements
    - Better understand the vital role of conservation to California's future
- Ecosystem services are the goods and services produced in nature.



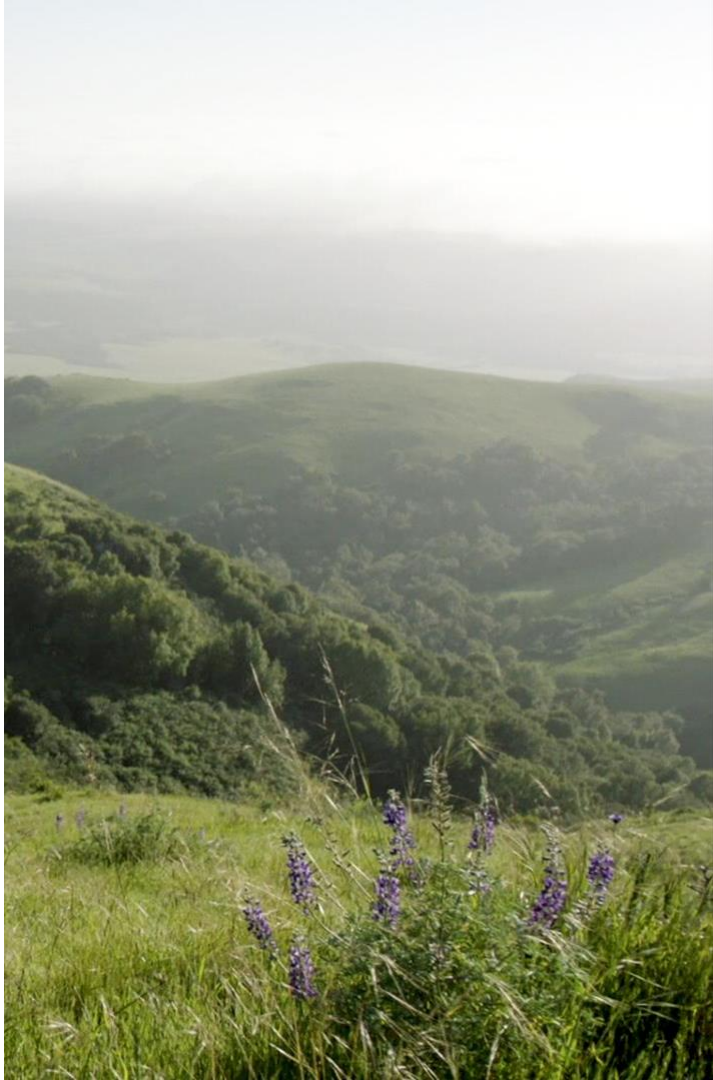
EVALUATING ECOSYSTEM SERVICES: THE APPROACH

- Focused on 56 of CRT's conservation easements
- Applied 2 approaches to determining ecosystem services values
  - Traditional Benefits Transfer
    - 9 of 31 existing studies applicable to CA
    - Average value of $0.01803 per household per acre per year of rangeland
  - Global Average
    - Uses global averages to value individual ecosystem services
    - Produced per acre per year values for 3 biomes: grassland, woodland & forest
- Explored the ROI of ecosystem services when rangeland is conserved in perpetuity



EVALUATING ECOSYSTEM SERVICES: CALCULATING ROI

- Investing in conservation easements protects ecosystems & their services
- Ecosystem service values are based on the biophysical characteristics of the parcel
- If a property would never be developed, there is no need for an easement
- Maximum ROI is from parcels with high threat and low cost



EVALUATING ECOSYSTEM SERVICES: CALCULATING ROI

- Employed 3 development scenarios to measure the ROI
  - **Short term**: Ranches are developed to their current Highest & Best Use (HBU) according to appraisals.
  - **Medium term**: Ranches are developed to the maximum extent allowable by zoning.
  - **Long term**: Ranches are fully developed.

EVALUATING ECOSYSTEM SERVICES: THE RESULTS

	Benefits transfer method	Total easement ecosystem service value produced/year	Current highest and best use as defined by an appraisal.		Max development under current zoning		Full development	
			ROI	Dollars returned per dollar invested	ROI	Dollars returned per dollar invested	ROI	Dollars returned per dollar invested
All purchased easements	TBT	$1.17 B	-0.08	$0.92	1.85	$2.85	134.52	$135.52
	Global Average	$247 M	-0.95	$0.05	0.15	$1.16	30.83	$31.83
All purchased & donated easements	TBT	$1.44 B	0.08	$1.08	2.47	$3.47	166.76	$167.76
	Global Average	$364 M	-0.92	$0.07	0.35	$1.35	41.20	$42.20

KEY FINDINGS

The value of ecosystem services on CRT lands is high: **$1.44 billion**, based on the Traditional Benefits Transfer approach

Rangelands **return $3.47 for every dollar invested**, under the assumption that they would develop to current zoning maximum.

When assuming that all ecosystem services would be lost without a conservation easement in place, returns rise to **$167.76 per dollar invested**.

Conserving California's private rangelands is a good investment, vital to protecting ecosystems and the benefits they provide to society.

HOW WE'VE USED THE STUDY TO FURTHER OUR WORK

- Partnered with AFT in 2021 to examine the value of ecosystem services lost on rangelands due to conversion
  - As part of AFT's Farms Under Threat research, data shows that 280,000 acres of rangeland were converted to other uses between 2001-2016.
    - Recent rangeland conversions **cost Californians $1.5 billion** in ecosystem services **every year.**
- Sharing this research with decision makers to demonstrate the value of rangeland conservation beyond food and fiber production.

QUESTIONS?

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www.rangelandtrust.org/ecosystem-service-study