



EVALUATING ECOSYSTEM SERVICES

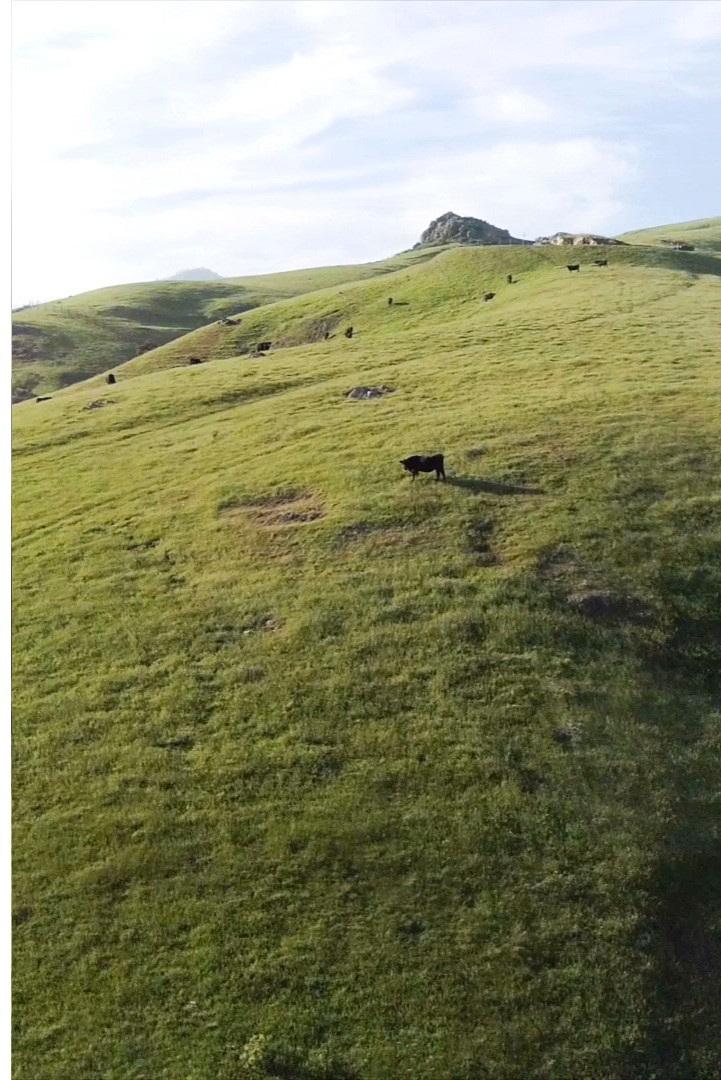
*Values and Return on Investment of Conservation
Easements held by the California Rangeland Trust*

ACWA Spring 2024 Conference and Expo

Thursday, May 9, 2024

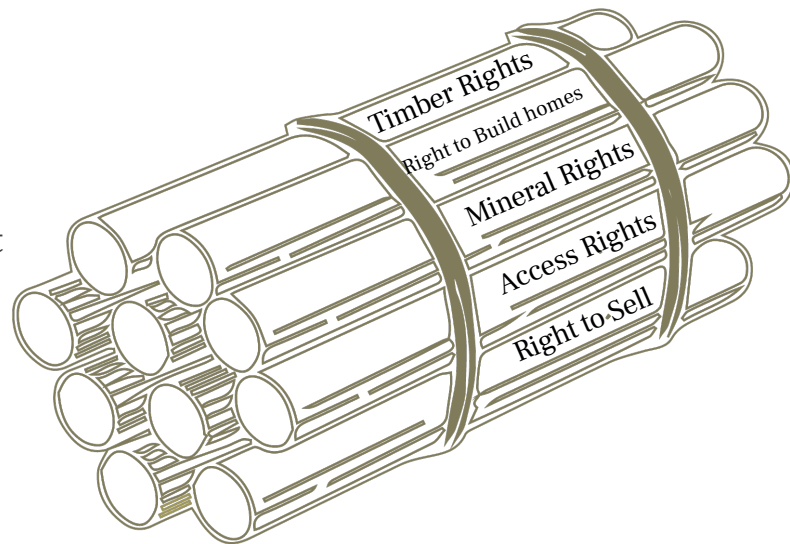
ABOUT CALIFORNIA RANGELAND TRUST

- California Rangeland Trust
 - To serve the land, people, and wildlife by conserving California's working rangelands
 - Conserved 395,000+ acres on 91 ranches since CRT's founding in 1998
 - We partner with ranchers to help them permanently conserve their working rangelands using conservation easements



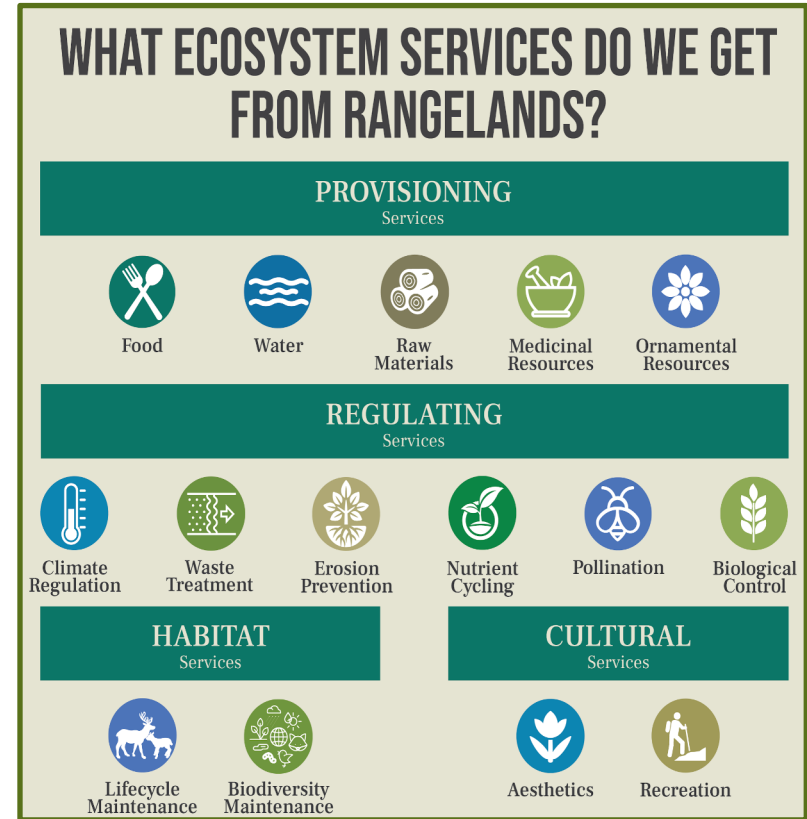
WHAT IS A CONSERVATION EASEMENT?

- A conservation easement is an agreement between a landowner and eligible organization regarding the future uses of private property to protect the land's conservation values
- Think of owning land as a bundle of rights
 - Landowner may sell or give away the whole bundle of rights or just one or two of those rights
 - The rights given away or sold may include the right to construct buildings, subdivide the land, etc.
 - By selling or donating a conservation easement, the landowner retains some rights and gives up others by deeding them to a qualified holder, such as the California Rangeland Trust



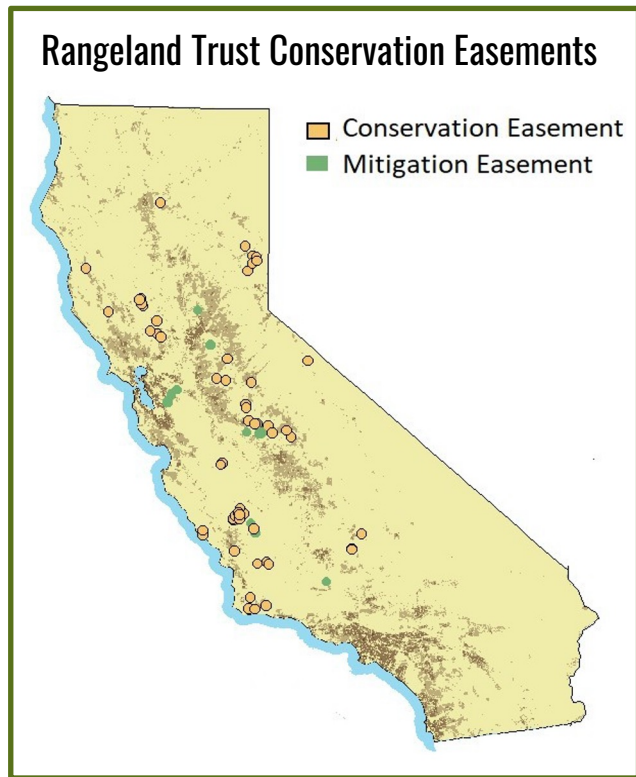
WHAT ARE ECOSYSTEM SERVICES?

- Ecosystem services are the goods and services produced in nature, like food and water
- These services benefit society and our economy
- Valuing ecosystem services can help to incentivize and reward environmental stewardship
- Led CRT 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 preservation to California's future



EVALUATING ECOSYSTEM SERVICES: THE APPROACH

- Focused on 56 of CRT's conservation easements
- Applied 2 approaches to determining ecosystem services values
 - Traditional Benefits Transfer Method
 - 9 of 31 existing studies applicable to CA
 - Average value of \$0.01803 per household per acre per year of rangeland
 - Global Average Method
 - 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: THE RESULTS

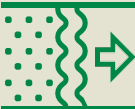
- Total annual value of ecosystem services on easements (but not mitigation easements):
 - Traditional Benefits Transfer
 - **Purchased easements:** \$1.17B per year
 - **Purchased and donated easements:** \$1.44B per year
 - Global Average
 - **Purchased easements:** \$679M per year
 - **Purchased and donated easements:** \$900M per year
- 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	\$679 M	-0.55	\$0.45	1.94	\$2.94	77.65	\$78.65
All purchased & donated easements	TBT	\$1.44 B	0.08	\$1.08	2.47	\$3.47	166.76	\$167.76
	Global Average	\$900 M	-0.34	\$0.66	2.43	\$3.43	103.28	\$104.28

ECOSYSTEM SERVICE VALUES

Provided annually by 56 ranches conserved by the California Rangeland Trust

FOOD  \$95,945,092	WATER  \$5,643,968	LIFECYCLE PRODUCTION  \$39,096,704	CLIMATE REGULATION  \$4,722,601	BIODIVERSITY MAINTENANCE  \$101,449,674
EROSION PREVENTION  \$3,824,858	WASTE TREATMENT  \$5,824,697	AESTHETICS  \$12,822,368	RECREATION  \$11,557,259	RAW MATERIALS  \$11,768,701



OVERVIEW OF KEY FINDINGS

The value of ecosystem services on CRT lands is high: **\$900 million to \$1.44 billion**, depending on estimation methods.

Rangelands **return \$3.43 to \$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 **\$104.21 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.



THANK YOU

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www.rangelandtrust.org/ecosystem-service-study

A photograph of a person standing in a field of tall, green grass. The person is wearing blue jeans and is positioned in the center of the frame. A dark teal banner is overlaid across the middle of the image, containing the word "QUESTIONS?" in white, bold, sans-serif capital letters. The background is a soft-focus field of grass and small white flowers, with a bright, hazy sky visible in the distance.

QUESTIONS?