

The Value of Conserving Grasslands and Rangelands

THE HEALTHY LANDS AND HEALTHY ECONOMIES INITIATIVE

CASE STUDY



**AG +
OPEN
SPACE**
SONOMA COUNTY

CONTEXT

Sonoma County rangelands support local productive agriculture, including dairying, hay, silage, wool, milk and cheese production and myriad other agricultural products. These rural open space lands support our local economy and community by providing local food, jobs, and revenue. Grasslands are critical to agricultural production in the state, providing **75% of California's livestock forage**. In addition to their contributions to agricultural productivity and the Sonoma County economy, these rangelands provide other important ecosystem services that provide benefits and values to the larger community. For example, research shows that in many cases ranches provide the best remaining habitats for threatened and endangered species, including wintering birds and waterfowl, invertebrates, and mammals. Protecting rangeland is one of the many benefits that the voters of Sonoma County sought to protect when they created Ag + Open Space in 1990. Since then, Ag + Open Space has worked with willing landowners across **more than 200 properties** in Sonoma County to conserve **almost 33,000 acres** of grassland throughout Sonoma County.

Eighty-eight percent of grasslands in California are privately owned, and they are being converted to other land uses at a high rate. Each year, **20,000 acres** of private ranch land in California are lost to development, with 10% of private lands fragmented into parcels of less than 20 acres. When grasslands are converted or developed, we lose important agricultural lands and the ecosystem services they provide, including protection of our water supply, soil retention and formation, carbon sequestration, pollination, and habitat for rare and endangered species. In addition, fragmentation and conversion to non-ag uses can make it more difficult for neighboring ranchers to stay in business, creating a snowball effect where development and conversion leads to increased development and conversion, and the loss of supporting services that make working agriculture viable.

Statewide, grasslands are a critical component of the state's biodiversity, providing habitat for **90%** of state-listed rare and endangered species, while also regulating water flow and water quality, and storing carbon. By providing habitat for native pollinators and honeybees, the rangelands surrounding California's croplands provide an estimated **\$2 billion** worth of pollination services alone. Grasslands are also habitat for the animals that provide biological control of pest organisms, and contain habitat and migratory corridors for large mammals, birds, reptiles, and amphibians, including rare and endangered vernal pool species.

Grazed rangelands can provide enhanced ecosystem service benefits, including a reduction in invasive species and reduced fuel loading.

A recent study completed in Sonoma County estimated that the ecosystem services provided by grasslands, including carbon sequestration, water quality and supply, pollination, biological control, and habitat, total up to **\$2.4 billion** per year.

Research has demonstrated that rangeland owners who have conservation easements are more motivated to manage their land in a manner that protects and enhances the ecosystem services that rangelands provide. Ag + Open Space works with Sonoma County's agricultural community: farmers, ranchers, and organizations such as the Farm Bureau and the Farmer's Guild/Community Alliance with Family Farmers, to support the economic vitality of working farms and to conserve productive agricultural land throughout the county. Statewide, other organizations such as the California Rangeland Trust and the California Rangeland Conservation Coalition are working in partnership with ranchers to conserve both the agricultural heritage of the state and to conserve these important grassland ecosystems and the services they provide for future generations.

The University of California Cooperative Extension (UCCE) examined the conservation value of Ag + Open Space protected land through an analysis using InVEST, an open-access software package developed by the Natural Capital Project. Using this tool, they quantified biophysical values for carbon storage, sediment retention, nutrient retention, and water yield on land protected by Ag + Open Space conservation easements, compared to adjacent private and public lands. They found that for all four services measured, Ag + Open Space protected land had a **higher conservation value** than similar unprotected land in the county.

These results suggest that land protected by the taxpayers of Sonoma County via Ag + Open Space conservation easements provides ecosystem services that benefit all county residents. As we develop more sophisticated tools to analyze the conservation value of available land, we will continue to improve our ability to identify those conservation opportunities that will provide the highest possible ecosystem services for all the residents of Sonoma County. Our understanding of the values provided by rangelands and their risk of conversion allows us to continually evaluate and improve our land conservation efforts, ensuring that taxpayer dollars are used to protect properties that retain land in productive agriculture while providing returns on the community's investment.



Ag + Open Space has protected over 33,000 acres of rangeland in Sonoma County

RANGELAND CONSERVATION IN CALIFORNIA

California is fortunate to have many organizations working to protect our grasslands and rangelands. The California Rangeland Conservation Coalition brings together over 100 organizations who are interested in preserving ranching as a way of life and the landscapes required to do so. The California Rangeland Trust conserves rangeland throughout the state – over **318,000** acres since 1998. Organizations like these ensure that the ecosystem services provided by rangelands throughout California will continue to benefit future generations.





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Sonoma County Ag + Open Space permanently protects the diverse agricultural, natural resource and scenic open space lands of Sonoma County for future generations. We are responsible for the perpetual protection of over 116,000 acres of land throughout our region. These agricultural and open space lands are protected through a quarter-cent sales tax approved by voters in 1990 and reauthorized in 2006. For more information, please visit www.sonomaopenspace.org.



THE HEALTHY LANDS AND HEALTHY ECONOMIES INITIATIVE

The Healthy Lands and Healthy Economies Initiative documents the economic value and community benefits of natural and working landscapes. This research helps to show that Sonoma County's investments in land conservation pay real dividends, now and into the future. This Initiative would not have been possible without contributions from the Gordon and Betty Moore Foundation, the S. D. Bechtel, Jr. Foundation, and the California State Coastal Conservancy.

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FULL REPORT: Butsic, V, Shapero, M, Moanga, D, Larson, S. 2017. Using InVEST to assess ecosystem services on conserved properties in Sonoma County, CA. UC Cooperative Extension.

AVAILABLE AT: www.bit.ly/2Q4u7oo