

Payments for Ecosystem Services: A California Rancher Perspective



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Defenders of Wildlife is a national, nonprofit, membership organization dedicated to the protection of all native wild animals and plants in their natural communities.



Ranchers, Environmentalists, Researchers And Agencies Working Together For The Benefit Of All.



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Executive Summary

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The California Rancher Survey

California's privately owned rangelands are imperiled. Lands rich in biodiversity and wildlife habitats are disappearing as irreplaceable oak woodlands, open grasslands, vernal pools and wetlands are converted to other uses. The loss of rangelands threatens not only ecosystems, but also the rich cultural heritage that has evolved over generations of families working their lands. Families are grappling with the real possibility that their ranches may not be viable in the future.

Ranchers and conservation groups are united by a common interest in halting and ultimately reversing these losses. This alignment of interests dedicated to preserving California's ranches provides a valuable opening to explore new conservation approaches that will help ranchers stay on their land. Payment for Ecosystem Services programs and markets (PES programs)¹ are a promising alternative to traditional conservation initiatives. By compensating landowners for the ecosystem services provided by their ranches — such as wildlife habitats, clean water and other benefits — PES programs provide a conservation incentive that can help secure both the future of ranching and the ecological benefits associated with California's rangelands.

To determine rancher interest in participating in PES programs, Defenders of Wildlife and the California Rangeland Conservation Coalition conducted a survey of California's Central Valley ranchers in the summer of 2010.² Three quarters of the responding ranchers expressed interest in participating in voluntary programs that pay them for the public benefits their lands supply. The survey revealed definite rancher preferences in the structure, level of payment and administration of PES programs. Successful programs will incorporate these preferences while providing a system that can measure and account for conservation benefits and preserve working landscapes in the long term.

The results of the California Rancher Survey should be used to develop programs that attract strong rancher participation and generate environmental benefits valued by conservation groups and government agencies. Rancher preferences should shape the outreach initiatives that will be crucial to garnering support and encouraging enrollment in these innovative programs. The survey provides data for creating programs that will lead to the highest rates of acceptance among ranchers and achieve the maximum environmental payoff consistent with economically viable ranching operations.

1 The term "PES programs" as used here includes programs that involve market-type mechanisms.

2 The full survey and report are available at www.defenders.org/ranchersurvey



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photo: Tracy Schohn, Director of the California Rangeland Conservation Coalition

In 2005, Defenders and other environmental groups partnered with the California Cattlemen's Association to work with ranchers and state agencies to adopt the California Rangeland Resolution. The Resolution is an unprecedented effort to bring together disparate parties to conserve and enhance private working landscapes and wildlife habitat within the Central Valley, surrounding foothills and interior coast range. Signatories to the Resolution formed the California Rangeland Conservation Coalition. Today, the Coalition comprises more than 100 organizations representing the ranching community, conservation groups, academia, and state and local government entities. They work to ensure the protection of California's private rangelands by supporting the viability of the ranching industry, educating the public on the ecological and socioeconomic importance of rangelands and encouraging the adoption of sound land and habitat stewardship practices on rangelands.

California's invaluable rangelands

California has more than 18 million acres of rangelands within and encircling its Central Valley and interior Coast Range. Most of this land is privately owned and managed for livestock production. Although conservation and ranching are often cast as conflicting, there is increasing evidence that grazing can have a positive impact on local ecosystems.

Private rangelands in California provide numerous environmental benefits. Many contain the best remaining habitats for what were previously wider ranging species such as Swainson's hawk, California tiger salamander and San Joaquin kit fox. The majority of water in California flows through private rangelands and by restoring and maintaining healthy grassland and riparian areas, ranchers help ensure that Californians enjoy a reliable source of clean water. In addition to providing wildlife habitat and improving water quality, private rangelands support pollination, promote biodiversity and provide soil and vegetation that capture carbon dioxide and slow the buildup of greenhouse gases in the atmosphere.

The economic and cultural benefits of California's ranches are equally significant. Ranches are vital contributors to rural livelihoods and local economies. They provide jobs and generate economic benefits in surrounding areas by creating a need for products and services. At the same time, ranches are a part of California's rich history. Some have been in existence for more than one hundred years, passing from generation to generation. The disappearance of California's ranches would be an enormous loss to the families and communities that have built their lives around ranching.



photo: www.thinkstockphotos.com

Development pressures, coupled with the reality that ranching is a risky and sometimes money-losing endeavor, are making it ever harder for ranchers to stay on their lands.

Defining the threat

The pressure on California's rangeland owners to convert their ranches to other land uses is steadily growing. Expanding development not only encroaches on natural landscapes, it drives up property values and creates incentives for ranchers to sell their properties. Development pressures, coupled with the reality that ranching is a risky and sometimes money-losing endeavor, are making it ever harder for ranchers to stay on their lands.

Until now, California's Williamson Act has provided a minimal line of defense against escalating development pressures. The Williamson Act reduces the property taxes of landowners who promise to keep their land in agricultural production, including ranching, for a set period of time. Previously, the state compensated counties for their lost tax revenue. Although the Williamson Act is still in place, it is no longer funded by the

state. Counties are left to either identify alternative funding sources or chose not to participate, creating uncertainty among ranchers about whether the assistance that keeps many of them from selling to developers will endure.

Payment for ecosystem services as a tool for conservation

Payments for Ecosystem Services programs are built on the recognition that ecosystems provide valuable and measurable services to people. Put simply, ecosystem services are the range of benefits people obtain from the environment, including vibrant wildlife and fish habitats, fresh water, healthy soil and clean air.

Although the economic value of ecosystem services are significant, they are usually not reflected in the prices landowners receive for the goods they produce. Payments for Ecosystem Services programs address this disconnect by compensating landowners for the ecosystem services provided by their lands. Like other market mechanisms, these programs identify a service to be bought and sold and define the conditions of the transaction. By linking healthy ecosystems with financial benefits, PES programs provide a positive incentive for landowners to improve and protect the environmentally significant resources on their land.



photo: Sheila Barry, University of California Cooperative Extension



Defenders of Wildlife recognizes the vital role of private lands in conserving biodiversity and the potential of PES programs to promote conservation on these lands. Working with landowners, advocacy groups and policymakers, Defenders is committed to designing conservation programs that connect valuation information to incentive levels, and providing assistance in structuring programs that maintain biodiversity and achieve conservation objectives.

Defenders is a member of Oregon's Willamette Partnership, a nonprofit entity working to develop user-friendly calculating tools and accounting systems that measure ecosystem impacts, as well as model agreements with federal, state and local agencies. At the state level, Defenders and its partners lead efforts to pass legislation to support the development of viable ecosystem markets. In 2009 Oregon enacted legislation recognizing the value of ecosystem services and encouraging state agencies to "adopt and incorporate adaptive management mechanisms in their programs in order to support the maintenance, restoration, and enhancement of ecosystem services." Defenders is now working with its partners to develop follow-up recommendations for the creation of successful ecosystem marketplaces.

Developing ecosystem service programs with ranchers in mind

The California Rancher Survey set out to determine ranchers' perspectives, knowledge and preferences for PES programs. The survey assessed both interest in participating in PES programs and how programs should be structured to attract maximum participation and secure the greatest possible environmental and economic benefit.

Four key insights emerge from the survey's results:

-  The threat of rangeland conversion is real and immediate and the time is ripe for a new approach to conservation.
-  Ranchers' high rate of participation in public conservation programs, coupled with their dissatisfaction with the perceived administrative hurdles associated with these programs, offers an opportunity to introduce more appealing conservation options.
-  Ranchers are strongly interested in PES programs, particularly those tied to wildlife habitat.
-  Ranchers prefer flexible programs built on shorter contracts, larger payments and minimal administrative burden. To attract ranchers, PES programs should reflect these preferences.



The threat of rangeland conversion is real and immediate.

The picture that emerged from the survey was a community of landowners strongly committed to their lands and lifestyle but profoundly uncertain whether their ranches would remain workable into the future.



photo: Tracy Schohr, Director of the California Rangeland Conservation Coalition

Most of the ranchers surveyed have longstanding ties to the Central Valley ranching community. Close to half of the respondents have resided in the same county for 41 years or longer. Individual respondents have spent an average of 28 years ranching in California and their families have ranched for an average of 82 years.

Despite the longevity of ranchers' attachment to their lands, over half the respondents indicated that they either were not sure or did not believe that their children or grandchildren would continue to ranch. These ranchers own approximately 240,000 acres of land that they believe will not be maintained as ranches by their descendants. This represents approximately 55 percent of the total acreage owned by those surveyed. If this survey reflects broader patterns of likely future tenure in California's ranching community, then approximately 7 million acres are at risk within the California Rangeland Conservation Coalition focus area. Although other ranchers would no doubt acquire some of this acreage, the conversion of even half this land would result in a significant loss of ecosystem services and socioeconomic benefits.

Ranchers' doubts about the future of their operations are likely tied, at least in part, to the difficulties many face in drawing a sustainable livelihood from ranching. Nearly a quarter of respondents reported that their net household income from ranching was actually negative in 2009, and another 13 percent just managed to break even. At the other end of the spectrum, only 8 percent reported a net household income from ranching greater than \$150,000. It is not surprising then that the majority of families supplement their household income with off-ranch employment: over 70 percent of ranchers reported they or a member of their household worked off the ranch.

Among selected land use priorities, keeping ranching viable and preserving the "rural feel" of local areas emerged as by far the most important priorities to ranchers. Ranchers also clearly value the need to protect wildlife and their habitats and recognize a need to become more active in influencing county land use zoning and regulations (Figure 1).

Figure 1: Local land use priorities

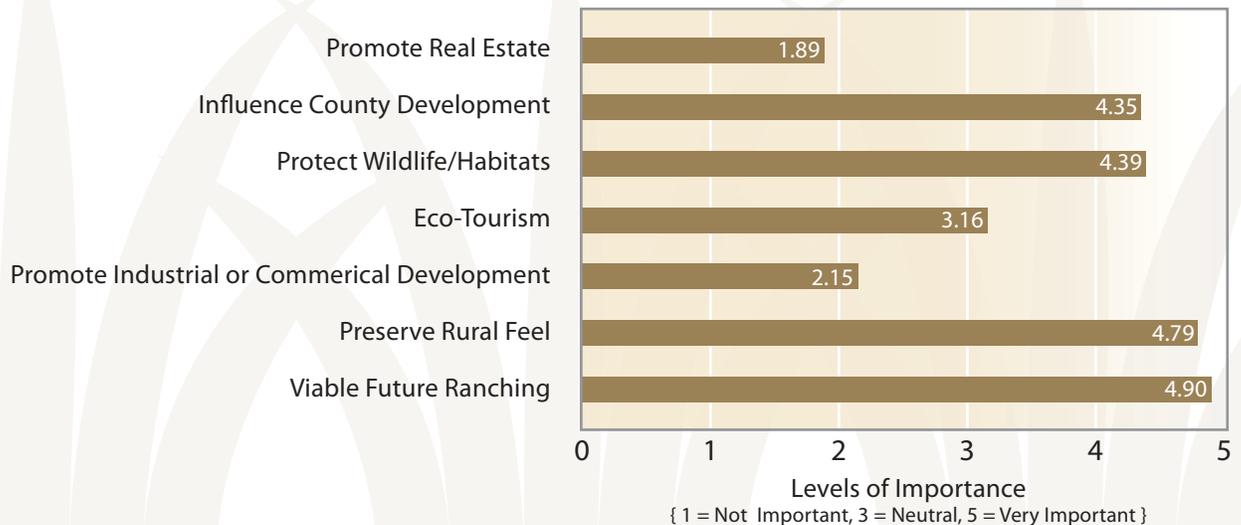




photo: Tracy Schohr, Director of the California Rangeland Conservation Coalition

Ranchers like public conservation programs but want less bureaucratic options.

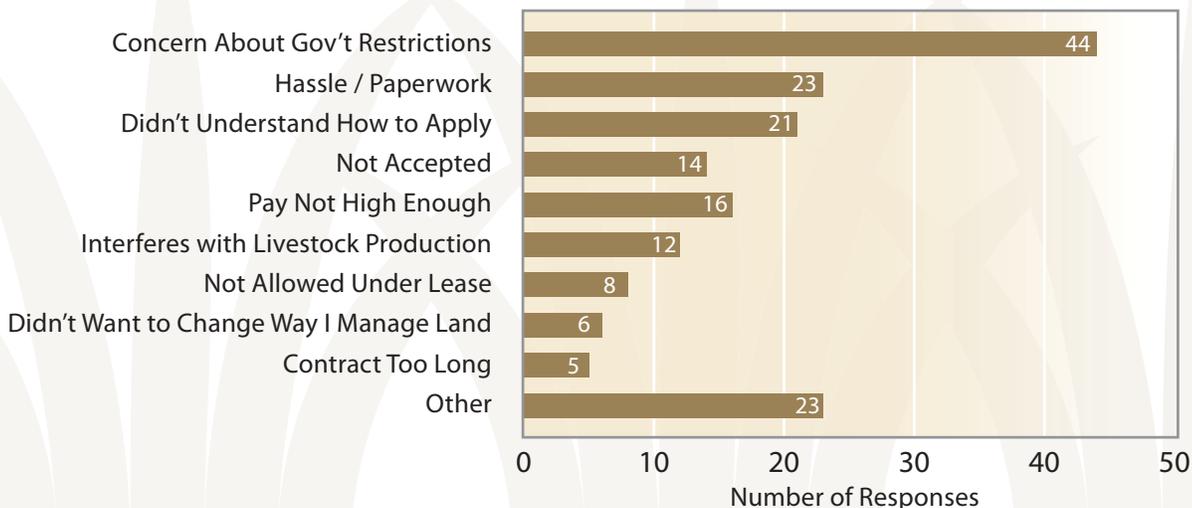
The vast majority of Central Valley ranchers participate in at least one public conservation program, but many find the administrative requirements of these programs to be onerous. Most ranchers indicated that their reasons for not participating in conservation programs was “concern about government restriction and/or access on private property,” “too much paperwork/general hassle,” “didn’t understand how to apply,” “not allowed under lease” or “not accepted into program.” Only a handful of ranchers responded that payment levels were not high enough and few indicated that they believed conservation practices interfered with livestock production. Other reasons cited by ranchers for not participating in conservation programs include concern about government intervention, skepticism about the source of the funds and concern about the decline of outreach and extension services (Figure 2).

The most popular public conservation program is the state’s Williamson Act. Among federal programs, those that provide cost sharing and technical assistance for conservation practices on working ranches are more popular than land set-aside programs. However, about a quarter of surveyed ranchers have at least some of their ranch under a permanent conservation easement.

Ranchers are strongly interested in PES programs, particularly those tied to wildlife habitat.

Seventy-seven percent of surveyed ranchers indicated that they would consider participating in a program in which they receive payments to improve the quantity and/or quality of the environmental benefits provided by their lands. When asked about their interest in specific ecosystem services, ranchers were most interested in providing wildlife habitat. Although ranchers are strongly interested in PES programs, on average they are

Figure 2: Reasons for non-participation in resource conservation programs



only somewhat familiar with ecosystem services terminology, indicating the importance of effective outreach. The terms “ecosystem service” and “payment for ecosystems services” were mostly unfamiliar to ranchers, although the terms for most of the specific environmental benefits that constitute ecosystem service, such as “wildlife habitat,” “water quality,” and “invasive species control,” were familiar. An exception is the term “carbon storage,” which most of the ranchers surveyed were not familiar with (Figure 3).

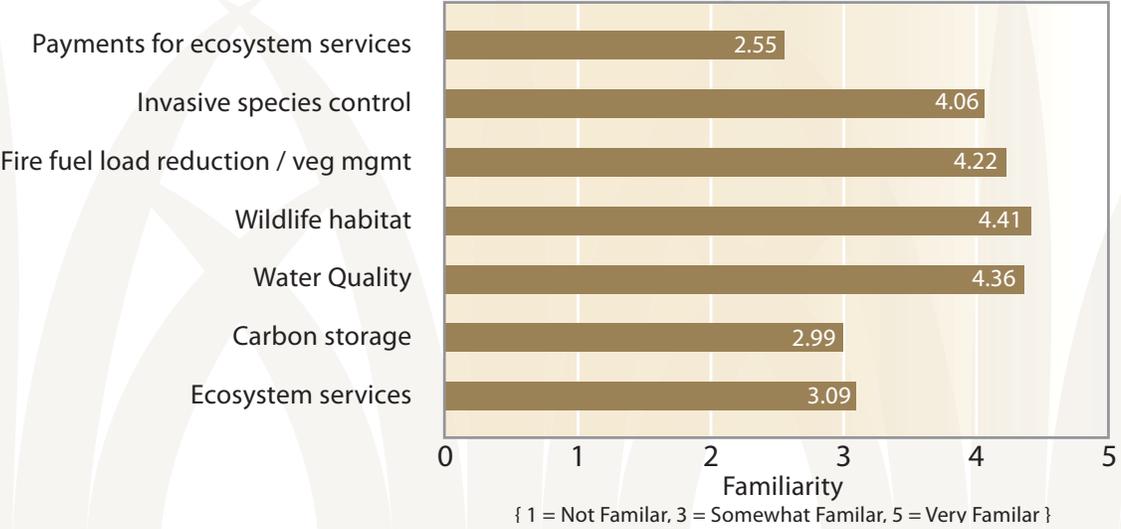
Effective communication and outreach will be critical to the success of potential PES programs. The most popular sources of information for traditional conservation programs are U.S. Department of Agriculture Bulletins, extension newsletters, ranching organizations, resource conservation districts and agricultural magazine. Radio, television and the internet are less important sources of information for most ranchers. Ranchers consult family members, neighbors, other ranchers and extension agents frequently for information on conservation programs, indicating the importance of these networks to outreach efforts. Information on rancher satisfaction with traditional programs, constraints to participation and primary sources of information about available programs offer valuable lessons for the success of future PES programs.



Ranchers prefer flexible programs that are built on shorter contracts, larger payments and minimal administrative burden.

When asked to rate the relative importance of three general program attributes — contract length, payment level and program administrator — ranchers rated them essentially equal, although payment level was slightly more important than contract length or program administrator. The survey then explored ranchers’ relative preferences regarding different program attributes by asking them to make trade-offs between the amount of compensation they would receive, how long the contract lasts and who would administer the program.

Figure 3: General familiarity with ecosystem services



For example, ranchers might be asked whether they would prefer to participate in a program administered by a nonprofit with a 30 year contract paying \$20 per acre annually, or a program administered by a state agency with a 15 year contract paying \$5 per acre annually. Ranchers were also able to indicate if they would not choose to participate in either program.

Not surprisingly, ranchers prefer contracts that cover a shorter period of time and pay at a higher rate. For every year added to a contract, the amount paid to the rancher would need to increase by about \$.81 per acre. As payment levels increase, so too does the likelihood of rancher enrollment.

When asked about potential program administrators, most ranchers preferred a nonprofit organization, although they were almost as open to the idea of a private company administrator. Federal and State agencies, on the other hand, were least popular and would require between \$12 and \$25 per acre in additional compensation for a rancher to participate.



The California Rancher Survey shows that without immediate action, thousands of acres of California rangeland will be lost, including unique wildlife habitats and watersheds.



Moving forward: Designing and implementing PES programs that work

The California Rancher Survey shows that without immediate action, thousands of acres of California rangeland will be lost, including unique wildlife habitats and watersheds. It also points to a promising opportunity to address this threat through new conservation approaches, including PES programs.

Structuring PES programs for California rangelands:

✎ The success of a PES program or market depends on both buyers and sellers participating. While this report concentrated on the perspectives of sellers, there is little research on the perspectives of buyers and how a program could be structured to decrease risk and increase participation. In general, the majority of PES programs that have been considered successful include buyers from the public sector. There is potential for California to encourage participation through both the public and private sector, which might include public utility districts, land trusts, and conservation organizations. There are incentives for public water utility districts in California to participate in innovative finance mechanisms. For example, paying landowners upstream to better manage their lands avoids potential costs for upgrading facilities to manage an increase in pollutant loads caused by development or conversion to other uses. Conducting research on potential public and private sector buyers in California will ensure that all perspectives are represented as these programs or markets are designed.



Survey results suggest that PES programs or markets should not only be associated with the improvement of wildlife habitat, but also should maintain the culture and values of the ranching community, preserve the rural feel of communities, and align with ranchers' commitment to environmental stewardship. These programs should also focus on practices that improve land productivity and simultaneously provide other ecosystem services (i.e. wildlife habitat, pollination, and carbon sequestration) while allowing for flexibility of contract lengths and payment levels to maximize rancher's participation.

To advance the creation of PES programs or markets in California, there needs to be simultaneous top-down and bottom-up approaches. Creating a state framework like Oregon's through Senate Bill 513 and House Bill 3109, which define and encourage the adoption of an ecosystem services framework to address land use, management, and infrastructure decisions, would be useful. At the grassroots level, pilot projects should be developed that connect buyers and suppliers of ecosystem services thereby providing a laboratory to explore and showcase new approaches and share lessons learned. The Ecosystem Commons website, <http://www.ecosystemcommons.org/>, an online community dedicated to discussing ecosystem services could be a resource for sharing experiences. Integrating conservation priorities of different entities (such as Integrated Water Resource Management Plans (IWRMP), Habitat Conservation Plans (HCPs), or Natural Communities Conservation Plans (NCCPs)) under the framework of ecosystem services could achieve multiple conservation priorities of different entities (local, state, federal, and non-profits).

Although the Williamson Act is still in place the program is no longer being funded by the State of California. Individual counties can opt to continue the program locally provided that they have identified alternative sources of funding. In its current form, the Williamson Act does not provide funding specifically for payments for ecosystem services; however, counties who choose to fund property tax incentives through the Williamson Act could expand the program to include payments for ecosystem services. For example, by stacking payments for ecosystem services on lands enrolled in the Williamson Act, additional conservation funds could be available to ranchers. The familiarity and popularity of the program with ranchers could facilitate a transition to a more dynamic program that doesn't just offer tax incentives, but also could provide a central mechanism through which to aggregate county funds for resource protection.

PES programs or markets should be designed at a scale appropriate to the targeted ecosystem service. For example, if the ecosystem service is water quality, then the watershed is an appropriate scale, whereas carbon sequestration may be best addressed at the state level. There should be discussion on creating three broad categories - biodiversity, carbon sequestration and water - and how to develop different metrics and protocols for measuring outcomes depending on local conditions, important conservation priorities, or resources of concern.



 Develop outcome metrics and measurement protocols that are a compromise between accuracy and practicality. Using existing metrics and protocols from the Willamette Partnership as models that deliver measurable ecosystem services to guarantee accountability and can aggregate different sources of demand is a starting place. The development of metrics should be an iterative process between buyers of ecosystem services and sellers. Ecosystem service credits should be specific to local needs and priorities.

 Create a working group that initiates conversations between relevant players and is responsible for implementing policy that supports ecosystem services, takes the lead on aggregating all the players, and makes sure lessons learned and successes are shared. Existing efforts to develop PES programs need to be coordinated. For example, the Mokelumne Watershed initiative in California is working on water quality and water availability metrics and the Air Resources Board in California is considering the development of protocols for carbon offsets for rangelands. Other objectives of the working group should be to improve permitting efficiency, define baseline and additionality for California rangelands, determine protocols for incentivizing ranchers who are and continue to be good stewards, and develop a monitoring and evaluation framework.

California's ranchers recognize the importance of the environmental benefits provided by their land, and with the right mix of assistance and incentives, they will act to improve those benefits. The California Rancher Survey is an important first step in that direction. The data and insights generated by the survey provide a solid foundation for the design and implementation of PES programs that ranchers, conservation groups and government agencies can all support.