

**Land Conservation Organization Strategies concerning
Conservation Easements in California**

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ABSTRACT

Land possesses agricultural, habitat, and production values, which are threatened by development in California and elsewhere. Land Conservation Organizations (LCOs) use conservation easements to protect land from development. LCOs and conservation easements have been increasing since the 1980s despite economic recessions, increased development, and environmental changes. I documented LCO land acquisition and management strategies in different areas of California. I interviewed LCO representatives and identified the most common and important land conservation strategies. I found that maintaining good community relations played one of the most important roles in the creation of LCOs, and as a response to development and economic pressures. The wording of conservation easement contracts allowed for flexibility in response to both development pressures and environmental change. However, I found tax incentives to be a far less important strategy to attract landowners to donate land than suggested in the literature. Further research is needed to determine what strategies will emerge as changes in landownership and climate occur.

KEYWORDS

development pressure, tax incentives, land-use change, economic pressure, landowner

INTRODUCTION

Land Conservation Organizations (LCOs) target undeveloped land with agricultural, habitat, or production use-values for protection through conservation easements (Farmer et al. 2011b). LCOs are non-governmental organizations that work to conserve land through acquisition and help from volunteers (Gerber 2011). LCOs establish conservation easement contracts with landowners that prohibit development (Cross et al. 2011) on land that is either donated by a landowner or purchased by an LCO (Wright 2007). Easements in California are usually located within areas of high levels of private ownership and high habitat diversity (Yuan-Farrell et al. 2005). Restrictions on establishing conservation easements, such as availability of public funds (Ferranto et al. 2011), are due to three pressures within the state of California.

Development progress, economic instability, and growing knowledge of climate change have increasingly motivated the conservation of land in California. As housing development expanded, beginning in the 1970s, rural land came under development pressure as growth rates continued to increase and millions of acres of privately owned land became susceptible to development (Breting 2007). The economic recession of the early 1990s slowed housing development, while California's housing ownership rate to drop to 55.6 %, the fourth lowest rate in the United States (CDHCD 1999). Housing and development recovered and by 2011 43% of forest and rangeland owners in California stated that they had been approached to sell their property for development with the largest properties of 500 or more acres approached the most (Ferranto et al. 2011). The biggest economic downturns in California occurred in 1981-1983 (*Washington Post* 1991) and 2007-2009 (*City A.M.* 2013) and yet the number of acres protected by LCOs has continued to increase from 1,166,697 acres/year (2000-2005) to 2,303,442 acres/year in (2005-2010), a 100% increase (LTA 2011). Tax incentives, for donations of conservation easements, were first introduced with the Tax Reform Act of 1976 and were signed into law in 1980 (Breting 2007). Tax incentives allow a landowner tax breaks on their land due to the decrease in their lands property value once the easement is in place (Bray 2010). Since climate change was first observed in the 1960s, habitat loss, sea level rise, and droughts are a few of the effects of climate change (*Africa News* 2013). LCOs must develop effective strategies to adapt to development, economic and environmental pressures in California.

LCOs must create strategies to handle these pressures to avoid a decrease in the number of conservation easements. Fewer conservation easements means more developed land and less conserved values. One approach may involve local LCOs influencing decision-making about planning and development by becoming members of their local committee on land-use planning, going to public hearings, sharing expertise, and educating the public (Gerber 2011). Another strategy focuses on tax incentives to motivate landowners to donate land in perpetuity (Rissman 2010). Many studies have found that landowners respond well to financial incentives for land protection, while others suggest that non-financial rewards are more important (Cross et al. 2011). Flexibility and specificity of the language of conservation easements has been a theme throughout environmental law and policy (Fiorno 2006). A common strategy for easement flexibility involves allowing for modification of permitted future land usage (Rissman 2010). Adaptive management strategies must have a clear approach for conservation purposes, terms to link these purposes, organized staff to monitor the terms and a process to alter the future management based on the monitoring results (Rissman 2011), making it a difficult strategy to implement. While there have been studies on various strategies (Ferranto et al. 2011, Liegel and Duvernoy 2002, Farmer et al. 2011b), none have focused on local California LCO strategies in response to pressures associated with development, finance and the environment.

In order to address this study, I focused on four main objectives. First, I determined why LCOs are created in California. Second, I documented land management practices of LCOs in various parts of California. Third, I identified the strategies LCOs have used to adapt to changing pressures of development, finance, and the environment. Finally, I identified potential future LCO practices in California.

History of Conservation Easements and Land Conservation Organizations

The history of conservation easements are important for understanding the changes conservation easements have been through since their creation and understanding the changes in citizen involvement. The history of LCOs will demonstrate why LCOs are created and discusses how they communicate with each other across different regions of California. Conservation

easements and LCOs have both increased exponentially since the 1980s and the reasons behind this increase will lead to finding potential future LCO practices.

Conservation easements have a long history in California and in the United States. The first easement was established in 1891 by Charles Eliot (Walker 2007). Beginning in 1930, purchased conservation easements were used extensively in efforts to protect scenic value next to Blue Ridge and Natchez Trace parkways (Barrett and Livermore 1983). Community involvement in conservation easements in California began when voters approved a \$776 million bond to buy conservation easements on agricultural and open space in 1988 (*Christian Science Monitor* 1990). In early conservation easements, land trusts and government agencies purchased land outright, but since the early 1980s, partial purchase or donation of development rights became more common (Breting 2007). Current easements are more complex than older ones because they incorporate more detail related to grazing, invasive species, and prescribed fires (Rissman 2010).

LCOs have been incorporated in the United States since 1891 but, it was not until the 1980s that LCOs began to increase in number (LTA 2006). Land Trust organizations emerged as key players in conservation easements with the creation of the Land Trust Exchange in 1981. The Land Trust Exchange changed its name to the Land Trust Alliance (LTA) which works to aid LCOs in conservation of land (Walker 2007) by acting as a means of communication between LCOs (Wright 1993). The LTA led the Land Trust Movement, which involved LCOs operating at national, regional and local scales (Merenlender et al. 2004). In the 1990s, economic growth allowed for an abundance of private and public money that supported conservation programs (Merenlender et al. 2004).

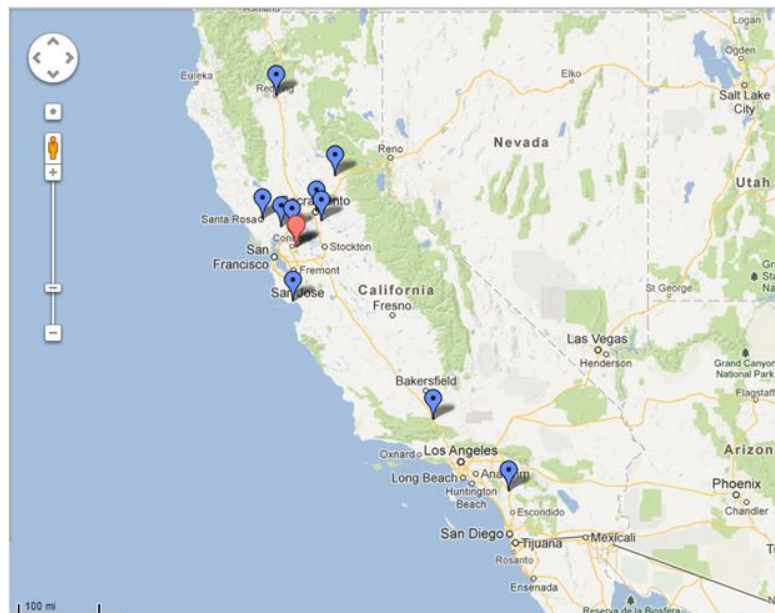
Land trusts have increased and so have conservation easements, currently one of them main methods for conserving land. Acres under easements by state and local land trusts increased from 2,316,064 in 2000 to 8,833,368 in 2010, a total increase of over 6 million acres in the United States (LTA 2011). LCO funds correlate with the increase of conservation easements, as easements, are limited by private donations and public funds (Ferranto et al. 2011).

METHODS

Study population

I focused on Land Conservation Organizations (LCOs) in California because LCOs experience greater pressure to conserve land in California than in other states. On the Land Trust Alliance website (www.landtrustalliance.org/), I found a list of LCOs in California. I interviewed a sample of representatives from mixed focus LCOs (agriculture, rangeland, habitat, mitigation, etc.) in Northern and Southern California (Fig.1).

Figure 1. Location of LCOs studied



Data collection

To examine conservation easement strategies, I interviewed conservation easement specialists at eleven LCOs (Table 1). I developed interview questions based on previous studies' findings concerning reasons for choosing conservation easements (Brunson and Huntsinger 2008, Ferranto et al. 2011, Cross et al. 2011, Farmer et al. 2011b), and created questions concerning LCOs decisions about easement development and management.

Table 1. General information on LCOs

Name of LCO	Location of LCO	Founding year of LCO	Type of Easement the LCO works with	Donated, Purchased, and/or Mitigation	# Acres Protected
Tejon Ranch Conservancy	Southern California	2008	Open Space, Mitigation	Purchased, Mitigation	Over 240,000
Center for Natural Lands Management	Southern California	1990	Mitigation	Mitigation	Over 34,000
Central Valley Farmland Trust	Northern California	2003-2004	Agriculture	Donated, Purchased	12,766
Solano Land Trust	Northern California	1986	Agriculture, Open Space, Mitigation	Purchased and Mitigation	22,161
Sonoma Land Trust	Northern California	1970	All conservation easement types	Donated	Over 25,000
Shasta Land Trust	Northern California	1998	Habitat, Rangeland, Agriculture	Donated and Purchased	Over 20,000
California Rangeland Trust	Northern California	1998	Rangeland, Mitigation	Donated; Mostly purchased	Over 400,000
Bear Yurba Land Trust	Northern California	1990	Agriculture, Wildlife, Forest, Habitat, Open Space	Donated	Over 1,088.47
Land Trust of Napa County	Northern California	1976	Agriculture	Donated	Over 53,000
Land Trust of Santa Cruz County	Northern California	2006	Agriculture, Mitigation	Donated and Purchased	11,850
Agriculture-Natural Resources Land Trust of Contra Costa County	Northern California	1997	Mitigation, Agriculture, Rangeland	Donated and Purchased	4,000

I conducted interviews using “guided tour” method, moving from broad to more specific sub-questions in four categories: general information, structure of institution, tax incentives, and landowner change and education (Appendix 1). General information involved the history of the LCO and the qualities land must possess to place a conservation easement on it. Structure of institution questions focused on the types of conservation easements the organization worked with, how the LCO obtained funding, flexibility of the conservation easements to include climate change and global warming, and acquisition land through development pressures. The landowner change and education section allowed me to determine the relationship of the LCOs to the landowners, how LCOs handled generational change, and how LCOs spread knowledge through their communities about conservation easements.

Narrative data analysis

I used my four research objectives to categorize the data. First I asked “How and why was this organization created” and searched for common themes that occurred in during the creation of the organizations. Second, I developed a checklist of ways to monitor easements and common land acquisition priorities. Third, based on comparison of trends in the areas of development, finance and the environment, I recognized LCO practices associated with responses to development, finance, and environment pressures. Finally, I assessed the effectiveness of different strategies of LCOs.

RESULTS

LCO origin and conservation easement types

82% of LCO’s were created 8 years ago or more and 64% of LCOs contain at least two types of conservation easements. The most common conservation easement types were agricultural and mitigation, and the most common means of obtaining conservation easements land was through donation alone or a combination of purchase and donation. (Table 1)

Easement practices over time

LCOs adapted to generational changes in ownership, tax increases, and changing environment, through a range of strategies (Table 2). Flexibility of language was the most popular form of assuring conservation easement flexibility. Flexibility of language means that in the conservation easement agreement, should a change in environment occur that does not allow a specific crop to grow, the conservation easement can state that any crop can be grown there in order to allow the land to still possess conservational value. 64% of respondents did not work with tax incentives directly or did not know what their impact was on the conservation easements. Only one informant believed that tax incentives played a big effect on conservation easement decisions. None of the LCOs contained only the original signers of conservation easement agreement, while many (45%) had a change in ownership of the conserved land in more than half of their current conservation easements.

Table 2. LCO strategies for conservation land management

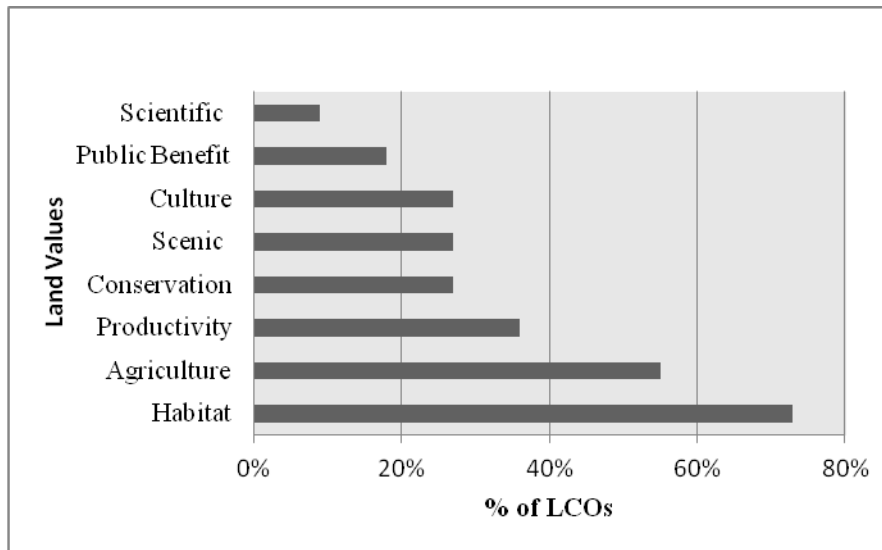
Land Management:	LCO Strategies:	Percentage of LCO Responses:
Conservation easement flexibility:	Flexibility of Language	45%
	Adaptive Management	27%
	Amendment	18%
	Disclaimer*	9%
	Do not know	18%
Conservation Easement Holders:	All are first generation	0%
	Over half are first generation	36%
	Less than half are first generation	45%
	None are first generation/Not applicable	18%
Influence of Tax Incentives on decision making around land acquisition and management:	Very important	9%
	Somewhat important	27%
	Not important	64%

*Disclaimer: statement that specifies agreement in conservation easement

Specific land features

LCO managers look at particular landscape features before acquiring land. The most common landscape feature(s) that LCOs look for are habitat (73%), agriculture (55%) and productivity of the land (36%) (Fig.2). Lands usually also must possess certain acreage, especially if the LCO is receiving funding from another source. For example, Solano Land Trust obtains funds from the federal government under the stipulation that the land must be at least 400 acres.

Fig.2: Features of land LCOs value most for conservation easements



Administration strategies/practices

LCO's must deal with changes over the years, such as increase in development pressures and economic crises (Table 3). Responses to development pressures varied based on the type of conservation easement the LCO dealt with. LCOs who only handled mitigation easements needed development to occur. Agricultural LCOs used pre-made maps of prime farmland to predict future development patterns. In general, LCOs emphasized maintaining good relations with the community and had several ways of educating people of the county (town meetings, fliers, website, etc.). Most LCOs agreed that the increase in development pressures was a

motivating factor to achieve more conservation easements. 36% of LCOs explicitly stated that developmental pressures and financial pressures are linked, and one of the biggest financial factors was the lack of income for all the LCOs. Some informants commented on how they had more applications for conservation easements than they could afford while one LCO was forced to cut staff members to handle the lack of money. In order to make sure that the conservation easement projects are protected from these developmental and financial pressures, 91% of the interviewees enforced conservation easement requirements in terms of simple monitoring of the conservation easement lands. This typically involved sending someone, at least once every few months or year, to check and make sure that the landowner was abiding by the easement in place.

Table 3. LCOs administrative strategies and practices in response to enforcement, developmental and financial pressures

Developmental Strategies	% of LCOs*	Financial Strategies	% of LCOs*	Conservation Easement Enforcement	% of LCOs*
Maintain Good Relations	45%	Grants	27%	Monitoring	91%
Try to predict development	18%	Federal, State or Private Funding	45%	Stated Clearly in agreement	100%
County decides	9%	Tax on new developments	9%	Higher an attorney	9%
Development needed	9%	Lease Land	9%		
Development tied with economy	27%	Decrease Staff	9%		

*Some LCOs use multiple strategies and therefore some LCOs are calculated more than once

DISCUSSION

Land Conservation Organizations in California have adapted to increasing development, financial, and environmental pressures. Real estate development is the biggest issue associate with conservation easements. Financial and development pressures are interconnected,

particularly in terms of procuring grants and other source of funding from state and federal agencies, maintaining good relations with communities, and predicting future development plans. Development pressure has decreased during economic downturns but funding became more difficult to procure. Maintaining good relations with community members and institutions is the most important strategy for LCOs to use in the context of economic and development pressures. Environmental pressures, such as global warming and habitat loss, drove conservation easements to adopt adaptive management or flexible language practices. Surprisingly only one of the eleven LCOs emphasized the importance of tax incentives in decision-making about establishing and managing easements.

Land conservation organization creation

LCO creation is driven by three factors: development, regional demands, and public knowledge of conservation value. Increased development can affect land with agricultural, habitat or production use-value (Farmer et al. 2011b). Each region in California, North and South, contain different land values, underscoring the need to create LCOs that specialize in these values. Public knowledge of conservation easements and community awareness to see land and surrounding landscapes in their county conserved motivates the creation of LCOs (Ferranto et al. 2011, Liffman et al. 2000, Farmer et al. 2011b). Each of these three factors influences and motivates the county and community through public knowledge and desire for land to be conserved.

Development pressures

California's growing population and extensive business development has driven land development in the state, which, in turn, has led to the creation of many LCOs (Breting 2007). For instance, the Central Valley Farmland Trust, the Solano Land Trust, and the Agricultural-Natural Resources Trust of Contra Costa County were established in the context of litigation over development involving open space advocates, developers and the county.

Solano Land Trust, which ensures protection of agriculture resource lands, consists of legal settlement land agreements that were created through a lawsuit involving Solano county and developers. The Central Valley Farmland Trust comprises four regions in California: Sacramento, San Joaquin, Stanislaus and Merced. Sacramento, Stanislaus and Merced had their own volunteer land trusts, but wanted professional management for the conserved lands. San Joaquin County did not possess a land trust, but residents wanted to start a land trust. Due to a lawsuit the Sierra Club initiated in the early 2000s over consuming prime farmland without mitigating for its loss, developers paid a fee for developing over land with agriculture or production use-value. One of the settlement agreements proposed using the money earned from mitigation to start a land trust. With increased development, more land needs to be protected and when the economy is good, more developers have more money to branch out and purchase land (Milder and Clark 2011). The Agricultural-Natural Resources Trust of Contra Costa County was created when a canyon land fill company, that wanted to place a landfill on the land, contributed \$500 toward agricultural cultivation. By taking the money, the county board of supervisors authorized the formation of the trust. The county board supervisors, the desire for professional management, and lawsuits against developers were all strategies that these respective counties implemented for the creation of land trusts despite development pressures.

California Regional Differences

Few conservation organizations specialize in particular types of conservation easements in California, yet different landscape patterns across California have affected the creation of LCOs (Liegel and Duvernoy 2002). Northern CA has more working agricultural land (USDA 2011), but lacks an LCO specializing in preserving working land, particularly rangeland. Southern California deals with great development pressures due to the expanding Los Angeles metropolis (CDHCD 1999), but lacks LCOs focusing on mitigation efforts, land trusts that make developers mitigate lost conservation value.

In 1998, the national cattlemen's association decided that there was a need for an organization that could hold conservation easements over working land, and created the California Rangeland Trust in Northern California. The Center for Natural Lands Management

(CNLM) is located in Southern California and was founded by a local fisherman who wanted a land trust that could help mitigate for any losses. Mitigation for loss of land is important in Southern California as natural beauty of the land will decrease and be replaced by an overcrowding of buildings. CNLM was therefore established due to the fact that no other land trust, at the time, could provide the needs of the fisherman. In these instances, those that wanted to make land trusts and conserve land values came up with a strategy to create a land trust to suite their personal needs despite any local and development pressures.

Public perception

Since the 1960s, environmental issues have gained public attention through politics and school, especially in Northern California (*Africa News 2013*). Citizens began to learn about conservation in their community and placed time, effort and money into creating LCOs. Between 1998 and 2003, voters passed initiatives authorizing more funding for land acquisition and easements, demonstrating a certain level of awareness of the need for preservation of land (Newburn and Merenlender 2006). This also reflects the increasing importance of the concept of land stewardship to voters (Walker 2007).

Local members of the Land Trust of Santa Cruz County who were passionate about protecting land in their county, especially agriculture and habitat, created the trust. The Shasta County Land Trust creation was by a group of local citizens who wanted to see their private land conserved for future generations. Sonoma Land Trust was also created as a result of local concern as residents began to realize that the surrounding landscape was at risk. The residents asked the trust for public land for advice and were told to form a local land trust. The Land Trust of Santa Cruz County, Shasta County Land Trust, and Sonoma Land Trusts were all founded at different time periods, signifying how one's passion and drive to protect land is a significant strategy to defending against developers and keeping one's land.

LCO creation:

All three aspects, development, regional differences, and public awareness, underscore the creation of LCOs. Increased knowledge about conservation easements is most important. Increased knowledge of local counties brought about the notion of mitigating for land developed. Development pressures made the community aware that developers were generally unconcerned with conservation and mitigation funds allowed LCOs to be established and that would not have been possible had the public ignored development. The lack of working land LCOs in the North and mitigation LCOs in the South demonstrate how important knowledge of the public is. Citizens in Southern California are generally not as concerned about conservation and therefore the process of mitigation for their loss in land isn't known in the South. This causes those in Southern California to be less likely to ask for mitigation from a company that chooses to develop on a plot of land. In Northern California, there is a lot more working land, and without the knowledge of the community, there wouldn't be as much protection for the land because the citizens of the counties would not understand the significance working land possesses. Thus, increases in awareness of developers causes communities to work together. If a county shares a common goal and community members work together to fight through litigation, raise money through mitigation, and pay taxes to create land conservation organizations, LCOs are able to be created despite the pressures of development.

Management of easements

Conservation easements, which are established in perpetuity, are usually supervised through easement monitoring (Rissman and Butsic 2011). Conservation easements must also be able to withstand potentially challenging circumstances, such as a change in landownership. Lack of funding also contributes to the challenges of placing a conservation easement on land, forcing LCOs to be selective about which parcels of land to protect (Merenlender et al. 2004). Maintaining good relations with the communities will allow for LCOs to deal with landownership change, economic, environment and development pressures due to the increased knowledge of the citizens and the ability to discover a change in environment or development before it affects the conserved land forever.

Easement Monitoring

LCOs monitor easements to assure landowner compliance, typically by conducting annual site visits. Organizations stress maintaining a good relationship with landowners, which informants indicated helped in avoiding surprise changes in development. Representatives from LCOs such as, the California Rangeland Trust and Shasta Land Trust, state that the way LCOs monitoring easements has not changed over the past years. Since the early 1900's, if monitoring did not take place, it was seen as abandonment of the easement in court (Witkin 1973), demonstrating the importance of maintaining good relationships and monitoring the land. Conservation Easements are legally binding documents (Farmer et al. 2011a), and if they are not upheld by the easement holder, they will be brought to court. Going to court is known to be increasing for LCOs (Rissman and Butsic 2011) although most LCO representatives interviewed had not been to court.

The Tejon Ranch Conservancy uses the biologist on staff to do the easement monitoring. The biologist uses photos to document the management of the land and then writes a report that goes to the state of California, which is funding the conservation easement. The representative from Sonoma Land Trust briefly mentioned that in 2007, the organization went to court and the entire expenditure was very expensive, especially since monitoring of the easements, in some LCOs such as the Land Trust of Napa County, is done with volunteers. Easement monitoring has been a strategy that incorporates trust and faith that the landowner and the person doing the monitoring keep in line with the easement contract. The environment is what is trying to be protected and with process of easement monitoring, LCOs can keep a check on the environment near the conserved land and make adjustments accordingly should they notice any changes.

Change in Landowner

Changes in landownership enhance the necessity of maintaining strong relationships. When property is transferred through sale or inheritance, issues can arise, such as lack of knowledge of what the conservation easement entails (Ferranto et al. 2011). The Central Valley Farmland Trust discussed one change in which they could not contact the new owner after the

property had been sold. When contact was established, the new party had already built a concrete slab that was not allowed under the terms of the conservation easement. LCOs are understandably concerned when a change in ownership occurs. The Bear Yurba Land Trust has one forest easement that they are really concerned as to who will take it over. The organization also had a case in which the children of a landowner did not want to take on a conservation easement because it was too much of a burden. Without maintain good relations, the land becomes succumbed to not only environmental pressures, but development pressure as well since as seen by the Central Valley Farmland Trust, easements protect the land but they cannot stop new owners (unaware of the easement) from building on it. Without good relations, the LCOs cannot keep track of the environmental changes around the land. Therefore, when a change in landownership occurs, the LCO must keep in close contact and sometimes, when drafting up the easement, have potential new owners in the room so that they understand the easement as well.

Knowledge of Conservation Easement

Organizations spread knowledge of conservation easements, through word of mouth, attending conferences and meetings, and conducting workshops and consulting. Word of mouth, particularly from neighbors, has always been one of the best modes of transmitting information and allowing the community to learn about conservation organizations (Rissman and Butsic 2011). Newspapers, such as *Keeping Landscapes Working*, *A University California Cooperative Extension Newsletter for Rangeland Managers*, are also a viable means of spreading information to the community. Attending city conferences allows the community to become aware of the existence and operations of the conservation organizations. These conferences can be held in any of the cities in the county of the LCO, allowing the land conservation organization to reach an audience that will care about the surrounding landscapes to protect them through conservation easements. Lastly, workshops and consulting allow for conservation easement professionals to discuss the benefits and limitations of the easements with community members.

The Sonoma Land Trust educates landowners as much as possible before an easement is established. LCOs discuss general outreach about land trusts with community members and try to stay in touch with real estate agents. Central Valley Farmland Trust, Solano Land Trust, Bear

Yurba Land Trust, and California Rangeland Trust stress the importance of talking with the community and the landowner, making sure that they understand the conservation easement and what they are and are not allowed to do. Through education of LCOs, landowners, county members, and neighbors will understand the significance of what conservation easements do. This allows for more donations and purchases of conservation easements by LCOs and as LCOs educate the county, they are also keeping up their good relations should they have to deal with development or environment pressures.

Land Management

LCOs are mostly funded by the state or federal agencies, which places restrictions on the land that the LCO can accept for a conservation easement due to the funding limitations (Merenlender et al. 2004). One key factor is the acreage of the land under consideration (Ferranto et al. 2011). State and federal agencies tend to fund acquisition of larger parcels, particularly those with a use-value that will provide revenue for the LCO and agency (Wright and Anella 2007). Site location also affects the level of interest in a given parcel. The representative from the Central Valley Farmland Trust stated that when funding is limited, there are often more applications for conservation easements than the LCO can handle. Therefore, if the parcel of land is in between very important environmental landscapes, such as the land conserved by the Tejon Ranch Conservancy which is surrounded by four natural landscapes, the land is more likely to be funded and placed with a conservation easement. The more value the land possess the more likely the land will be conserved because the process of placing a conservation easement on land is sometimes tedious and both the LCOs and the community want to spend their time wisely to protect the most important land values for their county.

Good Relations

Maintaining good relations with the community and the landowner is the most important component of easement management. Easement monitoring is set in place to not only make sure that the conservation easement is being upheld but it is a way for organizations to stay in touch

with the landowner. This way, the landowner knows that the organization is available to them for questions or concerns about the conservation easement. Maintaining good relations is especially important for the change in landownership. When a change in landowner occurs, they may not fully understand all of the aspects of the conservation easement and if the LCO has not maintained good or through relations with the landowners, incidents that violate the easement may occur. Lack of funding for LCOs affects whether a parcel of land will be put under a conservation easement. When good relations are intact and funding becomes available again, placing a conservation easement on those lands that didn't meet the criteria before will be much simpler. The local community may also help out and volunteer, such as volunteering for easement monitoring, or donating funds in order to increase money towards conservation easements. Environment and development pressure allow LCOs to want to keep up with these good relations since both are changing and if they never watch over the conserved land, the easement may not be able to protect it.

Economy

Economic downturns can be difficult for non-profit organizations, yet LCOs manage to thrive at all times (Merenlender et al. 2004). Federal and State funding grants are one of the largest forms of generating revenue for LCOs although during recessions there are often more applications for conservation easements than there is money. For the LCOs that conserve working land, leasing out the land to growers offers a steady income for the non-profit. Another approach to the funding of LCOs is a reduction in staff, although most local LCOs do not use this option. Tax incentives encourage landowners to donate their land in order to receive the tax deductions (Milder and Clark 2011); however, the amount of tax right off depends on the land value and economy at the time of donation (McLaughlin 2004). Community members are connected with LCOs because LCOs were created as a result of their increased knowledge and passion. Members of the LCOs respective county's are part of the main strategy for LCOs in handling economic pressure.

Federal, State, or Private Funding/Grants:

Grants allow LCOs to fund conservation easements regardless of the state of the economy (Merenlender et al. 2004). During the economic downturns of 1981-1983 and 2007-2009, funding for conservation was tight and was only available to conservation organizations if the land they were trying to conserve met particular standards. Since LCOs are nonprofits, they are limited in their means of generating revenue during these times and, thus seek land that meets these standards of the funders, putting all other conservation easement requests on hold until the economy improves. The Central Valley Farmland Trust, for instance requires that farmland must be designated as “Prime Farmland”, property must have a dependable and sustainable supply of water for irrigation, and farmland must be agriculturally viable. The California Rangeland Trust tries to increase the funding on both a federal and state level and mention how as the economy improves, mitigation is more and more available, a new process for LCOs. Saving the most important values of land for their county is a strategy that LCOs implement in order to use the money of their community wisely. Federal and Private funds go to the LCOs despite the economic downturns, demonstrating the passion and drive that the community has for protecting the natural beauty of land despite their own hardships.

Lease out to Conserved Land for Agriculture:

Some LCOs lease out land to growers who will grow food on the land or ranch that is then used as a profit for the LCO. The Land Trust of Santa Cruz County uses this strategy as it allows the organization to have a steady income every year. The harvest is managed by the organization and is further helped through a team of volunteers. The Santa Cruz Land Trust uses this technique because they deal with working land conservation easements and the number of volunteers that help out with the land trust is also a significant factor. Not only does this strategy put the land to good agricultural or grazing land use, but it demonstrates how much these volunteers and county members appreciate the land. These people understand that the land is

something for them to protect from development and one of the ways to do it is through the funding and assistance of LCOs.

Reduce Staff:

Like private firms, LCOs may cut back by reducing the staff in hard economic times. For instance, in 2007 the Land Trust of Napa County reduced their staff of 10 to 4. Although reducing staff reduces the amount of money that the organization is spending, it does not help generate any additional revenue for the land trust and places more stress on the staff. The Land Trust of Napa County was the only LCO to mention reduced number of staff and to generate revenue they mentioned investments and donations.

Tax Incentives:

Tax Incentives only apply to landowners who have donated their land (Bray 2010). Since California is a tax heavy state and has the largest state economy (*The Washington Post* 2013), tax incentives would seem to be a big part of a strategy that LCOs would implement in order to obtain more donations. Another reason why LCOs might implement this strategy is due to landowners who feel pressured to sell their land when faced with inheritance tax (Brunson and Huntsinger 2008). Most LCOs interviewed did not directly handle tax incentives as they are either too troublesome or irrelevant. The Central Valley Farmland Trust only had one donation because of tax benefit whereas both Solano and Shasta Land Trust stated that they were both not really affected by the presence of tax incentives. The California Rangeland Trust stated that they worked hard to get tax incentives renewed since they have had a few donations based on tax incentives but find it hard to tell if tax incentives actually have a large impact on whether or not landowners are more likely to donate land. Tax incentives have more of an impact with more international LCOs, such as the Nature Conservancy (Rissman 2011), but local LCOs in California would rather not deal with tax incentives, perhaps due to lack of staff or knowledge on how to handle tax incentives. One of the reasons why local LCOs find less land donated for tax

incentives is due to landowners, on a local scale, being more concerned about protecting the beauty of their land rather than for a tax right-off.

Economic Strategies:

Every LCO has different means of generating revenue based on the size of the LCO, the types of conservation easement the organization works with, and the availability of the state and federal funds. The Land Trust of Napa County is a large local land trust, protecting over 10% of Napa County (over 53,000 acres) and therefore reducing staff does not have as large an impact on the organization as a smaller local land trust, such as the Land Trust of Santa Cruz County, which only conserves 11,850 acres. LCOs that do not deal with working conservation easements cannot lease the land to growers to generate income. This strategy appears to be a good way to generate a steady income and it was surprising that no other LCO leased out the land. This may be due to a lack of volunteers or lack of protected working land conservation easements. Availability of state and federal funds will vary with the economy and as long as the land meets particular requirements and the LCO keeps applying for funding, this appears to be the best strategy for achieving financial support. This strategy only works if the community is willing to keep a desire and drive for protecting land as these people put money into these LCOs through taxes, private funding, and volunteering their time to help out the LCOs. Tax incentives are not really part of the local LCO figures and may only really have a large impact with national LCOs. Tax incentives do not appear to be a strategy in which local LCOs employ to obtain conservation easements during economic downturns.

Increased development pressures

Community relations are one of the key strategies to limit development. Some LCOs use pre-made maps of prime farmland in their areas to forecast where development may occur over time and try to prevent it. Mitigation easements are different than normal conservation easements because they require development to occur before they can be administered (Ferranto et al. 2011). As LCOs use the strategy to predict development over time and communicate with

developers, more land is being conserved, especially if the LCOs use mitigation easements and communicate with developers.

Maintaining Good Relations:

Good relationships with communities and realtors, are key to limiting development on precious land (Milder and Clark 2011). If LCOs go to community meetings, they find out where development will occur next and can speak to community members about their concerns. When the organization can stop development by maintaining good relations with the realtors, the land is more likely to be conserved. One of the main reasons for owners of rangeland to choose a conservation easement was to preserve the natural beauty of the land (Ferranto et al. 2011). If the landowner is aware of the LCO and does not want to sell their land for development, the landowner has a ready option for conserving their land.

Meeting with landowners and maintaining good relations with the board members of the organization are essential for handling developmental pressures for the Bear Yurba Land Trust. The board members of the organization know a lot of people in the community and through them learn about what is going on in terms of development and what parcels of land may be available for donation. The organization uses what they call a “strategic conservation plan” to identify important habitat, who owns it, and then ask the landowners if they are interested in a conservation easement. The Solano Land Trust has a similar view, as the county general plan states where development may or may not occur very clearly. The value and the cost of the conservation easement than vary based on how much development pressure there is and the location of the land. Making sure to keep neighbors, landowners, and the rest of the community educated about development helps lead to a strategy in which LCOs have inside information as to where developers might go next, giving them an edge and allowing them to negotiate with the developers to make a deal in which they are both “happy”.

Forecast Development:

By using State of California Department of Conservation maps, LCOs may identify targeted land before developers. With this knowledge, LCOs can predict where development may occur next. The Central Valley Farmland Trust was the only organization to mention this strategy in response to development pressures. The trust looks at maps and determines where development will likely occur. With this knowledge, the organization attempts to nudge the developers to develop on the less productive soil. However the new parcel of land may contain endangered species. The representative of the Central Valley Farmland Trust described this as a “vicious cycle” as a battle ensues on which is more important to conserve, soil productivity or endangered species. Using maps to predict future development of land only works if there are maps that show the exact values of the land that the LCO wants to protect. A map that shows areas of scientific value, scenic value, or habitat value would be hard to map out, especially for the entire county.

Need for Mitigation:

Mitigation easements, such those managed by the Center of Natural Lands Management, conserve land by offsetting the environmental costs of developing land. If a company wants to develop land, they must account for any loss of habitat or farmland by allowing pieces of land for conservation (Ferranto et al. 2011). When development is booming, more mitigation easements are needed as the developers continue to build in prime areas, while during recession of developmental booms, mitigation is not needed. Some LCOs work with both conservation easements and mitigation easements and when LCOs use this strategy, although they are not able to save all of the land from development, they are able to save a couple of acres and get funding.

Development Strategies:

Mitigation easements work differently than all other easements because they flourish when developmental activities are the highest. Mitigation easements are therefore useful because if the LCO cannot change the mind of the developers, at least the LCO can protect some part of the land. Yet, few LCOs work with mitigation easements. LCOs see development pressures as a motivating factor that influences them to look at communicate with the community and maps of prime farmland. Communication is central to LCO strategies, and it is particularly useful in keeping track of where developers are thinking about developing next or which landowner will be considering donating their land next. Predicting development over time allows for LCOs to get ahead of developers but maps are limited for certain values of land. Since conservation easements are usually donation based, even with these predictions there is no guarantee that the LCO can protect the land. Yet, if the LCO also deals with mitigation easements, this strategy to handle development pressures can almost guarantee conservation of some part of the land. LCOs also see development pressures as a means of increasing interest in conservation easements as citizens get pressured to sell their land. Development pressures have positive and negative effects on LCOs and conservation easements, making development one of the most significant pressures that LCOs have to face.

Environment effects on conservation easements

Predicting what will happen next in climate change, such as droughts, and how that will effect a piece of land years from now is impossible and causes severe problems for species protection (Ming Lee and Jetz 2008). Conservation Easements must be written to accommodate any changes in either the soil composition or the climate to guarantee conservation of the land in perpetuity. Two of the most common ways LCOs have done this is through adaptive management and flexibility of language in the easement contracts.

Adaptive Management:

LCOs have prepared for future development pressures and climate change-related issues through adopting adaptive management strategies (Rissman 2011). LCOs ask potential easement holders if they may want to reserve some of the land for development in the near future rather than placing all of the land under the conservation easement. By using this tactic, LCOs try to predict what will happen in the future and adjust the conservation easement language. This allows for interpretation of the conservation easement, making the threat of climate change less intimidating.

One way that the Agricultural Natural Resources Trust of Contra Costa County uses adaptive management is to reserve 5 acres out of a 100 acres parcel for development should a landowner want to place a home or storage shed there one day. The rest of the land is kept in productive agriculture. This agriculture is not limited to a certain crop in the conservation easement which means that if corn could no longer grow on the land, instead of the land turning into a junkyard, the landowner can use tomatoes instead. This allows not only the protection of the land from the environment but from the landowner as well. If the landowner did decide they needed a building on the land, if it wasn't for the adaptive management, the landowner might sell their land LCO would have to deal with a change in landownership.

Flexibility of Language

Flexibility of contract language involves stating that a particular piece of farmland must be used for cultivation but not specifying which type of crop needs to be used (Merenlender et al. 2004). This strategy allows for variation of temperature or climate should a change occur. By using this form of flexibility, the LCOs counter any threat that the land will be unusable in the future due to the conservation easement that has been placed on it.

The Solano Land Trust and Center for Natural Lands Management uses flexibility of language in their conservation easements. If the easement states that they have to protect vernal pool, should the habitat change, the vernal pool still needs to be protected but that does not

necessarily mean that the species that used to live there has to be there in order for the easement to still be legitimate. This type of strategy for dealing with environment changes also has its downfall. The representative from Solano discussed a hawk habitat that is protected by a conservation easement that states that you cannot plant a certain type of tree in the habitat. Should the climate change and the hawks no longer lived in that habitat, you still cannot grow that tree.

Environment Strategies:

Most of the LCOs did not yet know how they were going to tackle climate change issues with the conservation easements but it is an issue that every LCO is considering. Flexibility of language and trying to predict what the easement holder may want or do in the future is key to making sure that the conservation easement and the land under it is used to its best ability. Other techniques, such as close communication with the landowner, is also useful in learning how the land is changing and with that information come up with ways to adjust future conservation easements.

Future plans/Future practices

LCOs have been around for over a century and this would not have been possible had they not had plans for the future, and most LCOs continue to develop strategies. The Tejon Ranch Conservancy plans on continue to work on their management plan and maybe include additional staff. The Bear Yurba Land Trust will continue to work on the strategic conservation plan and expects to work on 3-4 more conservation easements. Other LCOs are working towards increasing the knowledge of the community and outreach, like the Shasta Land Trust while others, such as the California Rangeland Trust, plan to keep protecting their ranches in order to secure the habitat and local food supply.

Development, economic, and environment strategies all were impacted immensely by the community. As long as the LCOs stay in good relations with the community, they can continue to use federal and state funding for conservation easements during difficult economic times.

Leasing out land to growers appeared to be a significant means of revenue that other LCOs might want to look into so that they do not depend solely on the government and community. Development pressures called for predicting where developers would develop next and LCOs should consider attending county meetings and getting to know the real estate agents so that they are not caught off guard when development begins to occur in a certain location. As flexibility of conservation easement language continues to be the leading adjustment for conservation easements and climate change, conservation easements will become less strict and allow more room for interpretation. This may lead to future arguments between LCOs and landowners but if good relations are held and both parties understand what is written in the conservation easement, there should not be any issues. Adaptive management may become the leading method for an environmental strategy for LCOs due to the more complex and detailed manner than flexibility of language. Whether that does or does not occur, LCOs should consider looking into adaptable environment strategies.

Limitations/Future research

This study comprised interviews with only local California LCO representatives, limiting the inference of the findings. By only looking at California, there is a lack of information on how California LCO strategies compare to LCOs in other areas of the country. This comparison is an important step in understanding how differences in regional economic, development, and environmental pressures affect land acquisition and management strategies. Despite only looking at California, this study's results showed similar strategies are applicable to other states. Tax incentives from various states (Farmer et al. 2011b, Cross et al. 2011) were also not very important, although for other states it may be due to different policies and prices, and should be further researched. Keeping up good relations and increased public knowledge should be a key factor for LCOs in other states since LCOs are driven by donations of conservation easements.

Few Southern California LCO representatives responded to my inquiries, so I was unable to effectively address questions of regional differences, such as why there are more LCOs in Northern California than Southern California and how strategies differ between LCOs in these two regions. Rangeland owners, for example, average 60 years old, (Ferranto et al. 2011)

pointing to a change in generation in the upcoming years. Since many local LCOs have yet to address intergenerational ownership change, research will be needed on how they will incorporate this change as my study was done at a time where most LCOs did not yet deal with this change. Finally, due to the discrepancy between local LCOs and national LCOs in terms of the role of tax incentives, research should be done to understand the role of tax incentives for landowners who donate their land to a local LCO or those who donate their land to a more national LCO that deals with the entire United States instead of a specific location.

Broader Significance

This study documents how LCOs handle changing pressures in California affecting conservation easements. LCOs are an important means of conserving land in the face of development (Merelender et al. 2004) and they have gained a better understanding of how easements work because of years of adapting to the field (Rissman 2010). By documenting strategies that are being used by different LCOs and why these strategies are used, my study highlights how other LCOs may adapt to the kinds of pressures described here. Having a clear understanding of these strategies is important because land will continue to be impacted by development as population increases and climate changes. LCOs conservation easements are currently one of the best means of protecting land (Fisher and Dills 2012). Further understanding how these LCOs were created and how they are managed will continue to be important for maintaining agricultural, biodiversity, amenity and other land values in California and elsewhere.

Conclusion

Tax Incentives are not as important as some studies show (Ferranto et al. 2011, Cross et al. 2011, Farmer et al. 2011b) and developmental pressures are the biggest issue for conservation easements. Not only is there pressure from developers, but there is also pressure from the easement holders themselves as they may or may not want to develop after the conservation easement has been put into place. LCOs and conservation easements are successful in protecting land because they combine flexibility and permanent legal documents together. LCOs are created

because of increased community awareness and developmental pressures happening in the community at that time, whether there is a boom in development or economic downturn. Communication between LCOs and county residents and government is essential for monitoring easements and for strategies involving development pressures. Should LCOs find a solid way to accommodate the pressures of development and climate change, conservation easements will be the best means of conserving land. Understanding the LCO currently strategies in California will help achieve this goal of conserving land to the best of LCOs ability as well as help conservation easements survive throughout the years.

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APPENDIX A: Interview Questions

General Questions:

1. Name:
2. How long have you worked at this organization?
3. How and why was this organization created?
4. What are the goals of the organization in terms of conservation easements?
5. What are the major priorities of the organization to protect in terms of rangeland?
 - a. Habitat?
 - b. Water resource?
 - c. Open space?
 - d. Production use-value?
 - e. Recreational area?
 - f. Historical or cultural value?
 - g. Park location?
 - h. Agriculture?

Structure of Institution

1. Generally, are most conservation easements you work with donated or purchased?
 - If Donated
 - a. How do most donations work?
 - b. Since you've been working here, has the number of donated easements increased over the years?
 - If Purchased
 - a. How does purchasing a conservation easement work?
 - b. Has the number of purchased easements increased or decreased?
2. Are there specific requirements that a land has to have in order to be donated or purchased by the organization?
 - a. Size matters
 - b. Proximity to other conservational areas
 - c. Habitat
 - d. Agriculture
 - e. Scenic value

- f. Historic value
3. In what ways does this organization enforce conservation easements?
 4. How flexible are conservation easements?
 - a. How is the organization willing to adapt their conservation easements to accommodate for changing environment? Such as climate change or global warming?
- In 1976, the Tax Reform Act allowed a tax deduction for a donation of an easement if given to an organization for a period of at least 30 years. In 1977 the Tax Reform Act made the tax deduction to only those who made the donation in perpetuity. In 1980, the provision was signed into law. Would the organization go back to the 1976 idea of instead of perpetuity to at least 30 years? (If applicable)
 - The easement incentive has expired and is in the process of being renewed. Has this affected your organization? (If applicable)
 - When the easement incentive was passed in 2006, that gave tax incentives to owners who donated their lands, did this have any effect on easements? (If applicable)
 - If the easement incentive is not renewed, how will that affect your organization? (If applicable)
 - As increase in population demands more development, has this created a positive or negative effect on the organization? Increased motivation of owners? Volunteers?
 - During difficult economic times, how is funding achieved?

Landowner and Education

1. Has there been any noticeable change in generation?
2. How many clients are first generation easement holders?
3. How much do rangeland owners need to know before choosing a conservation easement?
 - a. Does this organization provide ways to educate the owner?
 - b. How are these ways made accessible to those who want it?