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Trends in Private Land Conservation: Increasing Complexity, Shifting Definitions of Conservation and Allowable Private Land Use

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Abstract: The terrain of private-land conservation dealmaking is shifting. As the number of acres of private land protected for conservation increases, our understanding of what it means for a property to be "conserved" is shifting. We examined 269 conservation easements and conducted 73 interviews with land conservation organizations to investigate changes in private-land conservation in the United States. We hypothesized that since 2000, conservation easements have become more complex but less restrictive. Our analysis reveals shifts in what it means for private land to be "conserved." We found that conservation easements have indeed become more complex, with more purposes and terms after 2000 compared to conservation easements recorded before 2000. However, changes in restrictiveness of conservation easements varied by land use. Mining and waste dumping were less likely to be allowed after 2000, but new

residences and structures were twice as likely to be allowed. We found a shift toward allowing some bounded timber harvest and grazing, and a decline in terms that entirely allow or prohibit these working land uses. Interviews revealed staff perceptions of reasons for these changes. Our analysis suggests that "used" landscapes are increasingly important for conservation but that conserving these properties stretches the limits of simple, perpetual policy tools and requires increasingly complex and contingent agreements.

Highlights:

- Conservation easement deeds are more complex with more complicated land use terms
- Increased conservation on working land alters the private conservation landscape
- Using partial-property tools for private land conservation is limited

Keywords: Conservation easements, land trusts, nonprofit organizations, private-land conservation, property rights

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Trends in Private Land Conservation: Increasing Complexity, Shifting Definitions of Conservation and Allowable Private Land Use

1. INTRODUCTION

Land conservation can prevent development and enhance environmental management and recreation. Conservation easements are part of the global trend toward decentralized environmental governance in which nonprofit and government entities negotiate standards and enforce rules (Owley, 2013). Internationally, public agencies and nonprofit organizations have sought ways to augment land protection and are increasingly relying on conservation easements (CEs). As CEs become increasingly important for land conservation, it is helpful to understand how the tool is evolving (Merenlender et al., 2004). Since they are perpetual restrictions on land based on today's understanding and preferences, CEs tend to remain fixed once established with subsequent transactions reflecting organizational learning and changing conservation contexts (Rissman, 2011). Organizations and landowners are learning from experience and responding to changing institutional contexts for conservation, so CEs established in the 1980s and 1990s may be substantially different from those of more recent decades.

We examined 269 conservation easements from six U.S. states to investigate differences between older and more recent CEs and conducted 73 interviews with staff of organizations holding these CEs. The CE and interview data present a compelling story of change within private-land conservation. Scholars and practitioners have noted increasing sophistication of CEs (Boyd et al., 1999). Yet, the trends and contours of these changes have not been examined systemically. Understanding how CEs are changing provides important information to land conservation stakeholders considering how to conserve land.

1.1 Conservation Easements

CEs are nonpossessory rights in land with a conservation purpose. The holder of a CE is a government agency, nonprofit land trust, or Native American tribe with a nonpossessory right in another person or entity's real property. Such rights are generally negative, prohibiting the landowner from doing something she would have otherwise been able to do. CEs can also contain affirmative rights, giving the CE holder the right to do something the landowner could have otherwise prohibited. Whether negative or affirmative, the goal of the restriction is to yield a conservation benefit (NCCUSL, 2007). CEs vary widely in purposes, restrictions, and the size and landscape context of conserved properties. Common examples of CE terms include prohibitions on development, limitations on activities in wetlands, and rules regarding forestry and agricultural practices.

The CE tool has evolved significantly. Historically, courts did not approve of CEs, disfavoring long-term restrictions on land that made transfers and negotiations regarding land uses more cumbersome. Conservationists grew dissatisfied with the limitations of public land conservation and land-use regulation and began to look for additional mechanisms to protect environmental amenities (Owley, 2006). CEs appeared a logical outgrowth of traditional property agreements like easements and real covenants that restrict a landowner's behavior on her own land or permit a right holder to do something on the land (like trespassing) that the landowner would otherwise have been able to prohibit. CEs needed new legal foundations due to inherent legal conflicts with traditional real estate mechanisms (that limited permissible holders and purposes of servitudes) and the desires of conservationists (Cheever, 1996). Therefore, beginning in earnest in the 1970s and increasing after a 1981 Uniform Act, U.S. states enacted CE statutes validating the use of such agreements and creating foundations for their enforcement.

The CE deduction was added to the U.S. federal tax code in 1980, enabling a charitable tax deduction for donated CEs and estate tax benefits. All fifty states, Washington D.C., Puerto Rico, and the Virgin Islands now have CE statutes. Other nations have been following this model, and we now see CE-like structures in the United Kingdom, Australia, Canada, Kenya, Costa Rica and Mexico (Di Leva, 2002; Jacobs, 2014; Korngold, 2010; Rissman et al., 2014). There are also proposals for development elsewhere, including Papua New Guinea and Chile (Root-Bernstein et al., 2013; Stolton et al., 2014; Telesetsky, 2001).

The growth in CEs in the U.S. has been driven by the growth of the land trust movement and the infusion of public funding from ballot initiatives and the U.S. Farm Bill. The number of land trusts has grown at an incredible rate. In 1950, there were only 53 land trusts, and in 2011 there were over 1,700 (McLaughlin, 2004). The 2010 Land Trust Alliance's Census tallied the total hectares of CEs held by land trusts at over 19 million (Chang, 2011). In 2000, there were only 9.3 million hectares held by state, local, and national land trusts. This number does not include the millions of additional hectares held by government agencies.

The land trust movement and the use of CEs matured between the 1980s and 2010s. The Land Trust Alliance first published *The Conservation Easement Handbook* in 1988 and the *Standards and Practices Guidebook* in 1993. Farm Bill funding became available for land-trust-held CEs in 2002 (Alliance, 2013). By the early 2000s, CEs were subject to heightened academic, media, and governmental scrutiny. Senate Finance Committee and IRS investigations began in 2003, resulting in hundreds of CE audits. The Land Trust Accreditation Commission was created in 2006 to set national organizational standards.

We expected to see two trends in CE terms: increasing complexity and declining restrictiveness of private land use. Our research group has experience working with CEs as

attorneys, academic researchers, and board members of land trusts. This experience suggests that CEs are getting longer and more complicated. At the same time, however, CEs appear to be allowing more development and landowner uses of the conserved property. We conducted a survey of CE documents and interviews with CE holders to test our hypotheses and quantify these trends, comparing CEs created before and after 2000.

1.2 Hypothesis 1: Conservation easements have increased in complexity.

We expected to find that CEs increased in complexity, with newer CEs including more purposes and terms. Contract theory, diffusion of innovation, and organizational learning suggest an increase in complexity over time (Argyres et al., 2007; Gray, 1973; Vanneste and Puranam, 2008). CEs evolved in conjunction with changes in state and federal law, funder requirements, and increased public scrutiny. As land trusts and government agencies mature and CE use increases, holders are more likely to be repeat participants. With this experience and the growth in the number of attorneys working with CEs, we expect organizations to anticipate more potentialities and negotiate for more terms, seeking to maximize the likelihood of achieving their conservation goals. We also expect that donated CEs might be less complex than purchased or partially-purchased CEs (Rissman, 2010). CEs are also more likely to be part of mitigation for development or other habitat destruction in which the expectation for defined rules and duties is higher (Owley, 2011). Larger properties may also require greater complexity in CE terms.

An increase in complexity of conservation easements would be consistent with trends seen in other types of contractual documents. Attorneys often seek to improve contract completeness by adding contingency planning or by increasing contract details (Argyres et al., 2007) (Crocker and Reynolds, 1993). As parties to contracts learn about potential outcomes through personal

experience, court cases, and news reports, they add contract language regarding such events. Though characterized as deed restrictions, CEs are similar to contracts, are often referred to as contracts (Tegene et al., 1999), and courts use contract rules when interpreting them (Haines, 2012).

Innovative terms may also have diffused through conservation organizations. Diffusion of innovation occurs where there is "communication of a new idea in a social system over time" (Gray, 1973). Increased levels of interaction though social media likely magnify this effect. For example, increased use of model CEs, publications like the *Conservation Easement Handbook* or the Land Trust Alliance's *Standards and Practices*, or discussions on the Land Trust Alliance listservs enable drafters to easily adopt terms and techniques used by others. It is also possible that there is a bandwagon effect (Asch, 1955) for CE terms. That is, the probability of any holder adopting a particular term increases with the proportion of holders who has already done so (Colman, 2012).

Organizational learning theory supports the hypothesis of increasing complexity. Organizational learning is a change in an organization's practices based on experience (Argote, 2013). As land trusts enter into more conservation easements, staff members change and improve their conservation easements based on their earlier transactions and in reaction to conflicts that have arisen with landowners. Repeated interactions enable drafters to capture more contingencies. Changes are more frequently driven by actual experiences rather than increased ability to predict potential future occurrences (Mayer and Argyres, 2004). It is impossible to foresee all contingencies, and staff identify important terms that were left out of prior CEs. For example, if land trusts have problems with landowners dumping trash, they are likely to add provisions on waste dumping to future CEs. Incorporating new CE terms guards against

organizational forgetting and may leave terms in subsequent CEs long after individual staff members have forgotten why the terms first appeared (Argote, 1999).

1.3. Hypothesis 2: Conservation easements have decreased in restrictiveness.

While CE documents may become increasingly complex, the restrictions on landowners may be lessening.[1] We hypothesized that recent CEs would allow landowners to exercise more land-use rights for a few reasons. The earliest CEs preserved key landmarks or were viewed as "forever wild" CEs that did not allow substantial use or development of those properties (Jacobs, 2014). CEs are now used in more contexts and on larger properties. They may be more likely to be part of a large-scale suburban development, in urban areas, or on a golf course. To attract new landowners and enable a growing conservation land base, CEs may also increasingly encumber residential properties or large working lands with active farming, grazing, and timber harvesting. In these cases, landowners typically retain rights to conduct activities on the lands. Changes in funding and conservation organization priorities could also contribute to decreased restrictions on land use. One trend that may run counter to this hypothesis is that donated CEs may contain fewer restrictions than purchased or other CEs, since landowners typically receive less financial incentive for a donated CE. Purchased CEs have increased with funding from the Farm Bill and voter-approved bond initiatives.

2. METHODS

We examined 269 CEs from six states in the U.S. (California, Colorado, Indiana, New York, South Carolina, and Wisconsin). We collected the CEs through a distributed graduate seminar

[1] In fact, the most restrictive development term could be extremely short: "No Development Anywhere on the Property." When the landowners have more rights, the provisions get longer, detailing where development may occur, what form it will take, and what approval process is required.

179 conducted among six universities in Spring 2011 (Ref Redacted). To include a wide range of
180 land conservation organizations and CEs, we selected 63 land trusts and governmental holders
181 from 28 regions across the six states. We then acquired four CEs from each organization: the
182 oldest and newest CEs, a middle CE from the median year between the oldest and newest CE,
183 and the largest CE (by area) held by the organization in the study region. If the largest CE was
184 also the oldest, middle, or newest, the second largest CE was selected. We selected these CEs to
185 maximize the variation in terms within each organization.

186 We coded the CEs by categorizing their purposes, land-use terms, and procedural terms. To
187 analyze how CEs have changed, we divided the CEs into two groups: those recorded before 2000
188 ("before 2000" n=76) and those recorded from 2000-2011 ("after 2000" n=193). We split the
189 dataset at 2000 because the use of CEs increased dramatically by 2000. By that date,
190 conservation organizations had access to a variety of CE drafting resources including books,
191 conferences, and reports. Additionally, in the early 2000s funding for CEs grew with federal
192 programs like the Farm Bill and local bond initiatives. By the early 2000s, CEs were subject to
193 heightened academic, media, and governmental scrutiny. With some experience under their belts,
194 drafters were incorporating lessons from earlier projects.

195 Our sample had similar dominant land cover, state, and type of holder (government or NGO),
196 or type of landowner (private, NGO, or government) before and after 2000 (Appendix Table 1).
197 Our sample had fewer small properties and donated CEs after 2000. For this reason, we control
198 for property size and whether the CE was donated in all multivariate analyses.

199 To test our first hypothesis of an increase in complexity, we first examined whether the number
200 of purposes was higher after 2000 by conducting a multiple linear regression (all analyses in IBM
201 SPSS v.22) of the number of purposes in each CE with independent variables year (before or after

2000), property size (larger or smaller than 500 acres), and whether the CE was donated (yes/no), and a size*year interaction term. The size*year interaction term was not significant, so it was removed from the final model. We conducted chi-squared analyses of whether specific purpose clauses and types of purposes were more or less common after 2000.

Second, we tracked the presence of 17 land-use and 5 procedural CE terms. We developed this list of provisions based on the Land Trust Alliance's *Conservation Easement Handbook* and our previous experience with CEs. We created a land use complexity metric that summed the number of land uses that each CE mentioned (including provisions to restrict *or* permit the land use), out of 17 land use categories. We hypothesized that CEs after 2000 would mention more land uses than CEs before 2000, which we tested with the nonparametric Mann-Whitney U test. We used the nonparametric test here because the complexity metric sums many diverse types of easement terms. We tested change in presence of five procedural terms (termination, condemnation, Acts of God, amendment, dispute resolution) before and after 2000 with chi-squared analysis.

Our second hypothesis considered whether later CEs are less likely to restrict landowners' private land uses. When examining CE terms to test this hypothesis, we looked for both the presence of terms and their meaning. For example, instead of just asking whether the CE had a term about invasive species, we examined what that term said and what level of control the CE purported to exert over landowner action. We examined whether CEs became more restrictive through chi-squared analysis of land-use restrictions.

We compared development terms in CEs before and after 2000 with multinomial logistic regression (n=269), controlling for property size, working land purpose (including forestry, grazing, or agriculture), and whether the CE was donated. Development restrictions were divided into three categories: no new development; one residence, agricultural building, cabins, or other

structures; and two or more new residences allowed. The final model regressed development terms with year (before or after 2000), size of property (smaller or larger than 500 acres), and whether the CE included a working land purpose. We initially included a year*size interaction term and whether the CE was donated, but these variables were not significant and were removed from the final model to minimize AIC.

We also developed multinomial logistic regressions to examine whether timber harvest grazing terms were more or less restrictive after 2000. We classified the dominant land cover of each CE based on GIS maps, Google Earth, and document descriptions. We examined harvest terms on forested CEs (126) and grazing terms on grass/shrub CEs (108). Properties with a dominant land cover of wetland (31) or other (4) were excluded. For forest properties, we examined whether CE terms allowed any timber harvest, some timber harvest (with restrictions in the CE or an associated management plan), or no timber harvest were more or less common after 2000, controlling for property size, working land purpose, and whether the CE was donated (n=126). Property size, a size*year interaction term, and donated were not significant and were removed from the final model due to selection to minimize AIC. For grass/shrub properties, we examined whether CE terms that allowed any grazing, some grazing (with restrictions in the CE or an associated management plan), or no grazing were more or less common after 2000, controlling for property size, working land purpose, and whether the CE was donated (n=108). A size*year interaction term and donated were included in the preliminary grazing terms model but were removed because they were not significant and removing them minimized AIC.

We conducted 73 structured interviews based on a standard questionnaire with staff from 63 land trusts or government agencies. These structured interviews were conducted by phone (n=49), in person (n=22), or through written email correspondence when this was preferred by

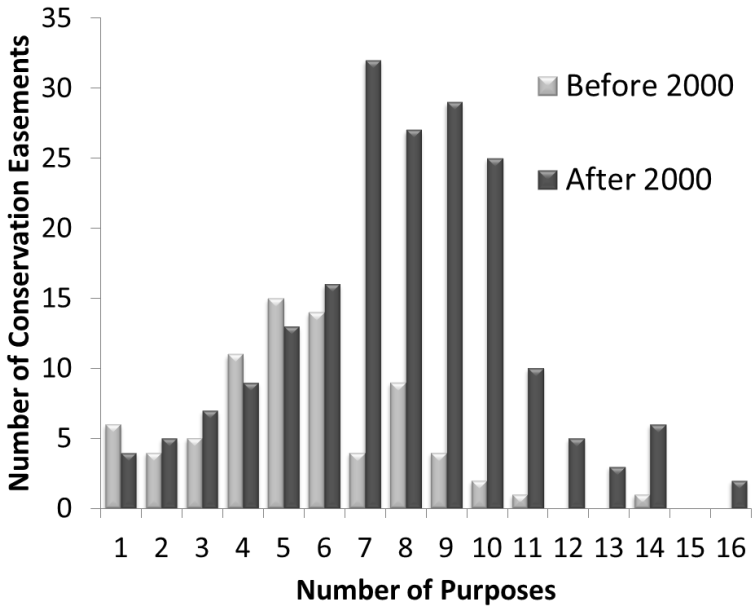
organizational staff (n=2). We asked staff involved with CEs to describe the organization's approach to drafting CE language and how that approach has changed over time. We inductively coded open-ended questions (Boyatzis, 1998) and identified sixteen recurring themes.

3. RESULTS

3.1. Complexity

Multiple analyses support the hypothesis of an increase in CE complexity. First, we found an increase in the number of CE purposes (Fig. 1). CEs since 2000 had an average of 7.8 purposes, compared to 5.4 purposes before 2000. A multiple linear regression found that CEs after 2000 had more purposes (standardized ß=0.392, t=6.247, p<0.001) and larger CEs over 500 acres had more purposes (standardized ß=0.195, t=3.482, p=0.001), while donated CEs (standardized ß=-0.195, t=-3.345, p=0.001) had fewer purposes (full model adjusted r^2=0.184, F=21.184, p<0.001). CEs created after 2000 were more likely to have specific purposes with lists of specific conservation values, species and natural communities, and goals to protect working land uses like forestry, grazing, or farming (Appendix Table 2).

Figure 1. Conservation easements created after 2000 have more purposes than those created before 2000.



The complexity of land-use provisions increased (Fig. 2). CEs after 2000 had more terms regarding land-use restrictions, with a mean of 12.5 land-use terms after 2000, compared with 10.2 terms before 2000 (Mann-Whitney U Test, n=269, z=-5.49, $p<0.001$, two-sided). The land-use complexity metric summed the land uses in Table 1.

Figure 2. The complexity of land-use terms in conservation easements is higher after 2000.

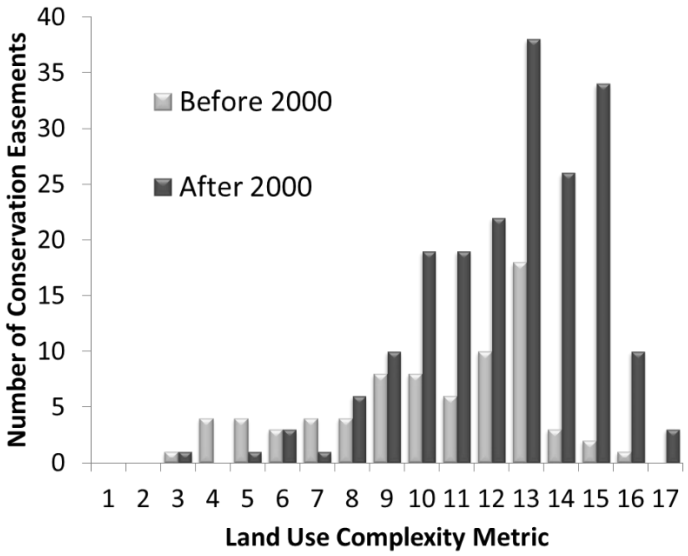


Table 1. Seventeen land-use terms included in the land-use complexity metric.

Land-Use Terms	Percentage of CEs Before 2000 (n=76) containing the term	Percentage of CEs After 2000 (n=193) containing the term	Increase in percentage
New Structures, Buildings, or Roads Mentioned	94.7%	99.0%	4.3%
Alteration of Land Mentioned	84.2%	84.5%	0.3%
Waste Dumping Mentioned	81.6%	94.3%	12.7%
Public Access Mentioned	81.6%	91.7%	10.1%
Timber Harvest Mentioned	76.3%	91.2%	14.9%
Alteration of Water Courses Mentioned	72.4%	82.9%	10.5%
Commercial Recreation Mentioned	71.1%	82.8%	11.7%
Mining Mentioned	69.0%	91.9%	22.9%
Subdivision of the Property Mentioned	64.5%	85.0%	20.5%
Farming Mentioned	64.5%	83.4%	18.9%
Livestock Grazing Mentioned	56.6%	76.7%	20.1%
Invasive Species Mentioned	56.6%	68.4%	11.8%
Wildlife Mentioned	39.2%	56.5%	17.3%
Water Rights Mentioned	36.6%	53.2%	16.6%
Management Plan Mentioned	31.0%	56.8%	25.8%
Prescribed Fire Mentioned	21.1%	34.2%	13.1%
Climate Change Mentioned	1.3%	3.6%	2.3%

273 Procedural clauses like Acts of God, amendment, and dispute resolution increased over time
274 (Table 2). Termination and condemnation provisions, which are generally common, did not change
275 in frequency.

276 Table 2. Percent of CEs with each procedural clause before and after 2000.

Procedural Terms	χ^2	**P-value**	**Before 2000 (n=76)**	**After 2000 (n=193)**
Termination Provision	0.146	0.702	74.3%	76.6%
Condemnation Provision	0.017	0.895	69.3%	70.2%
Acts of God Provision	11.395	**0.001**	45.3%	67.7%
Amendment Provision	30.514	<**0.001**	42.1%	77.2%
Dispute Resolution Provision	4.870	**0.027**	23.7%	37.8%

277

278 *3.2. Restrictiveness*

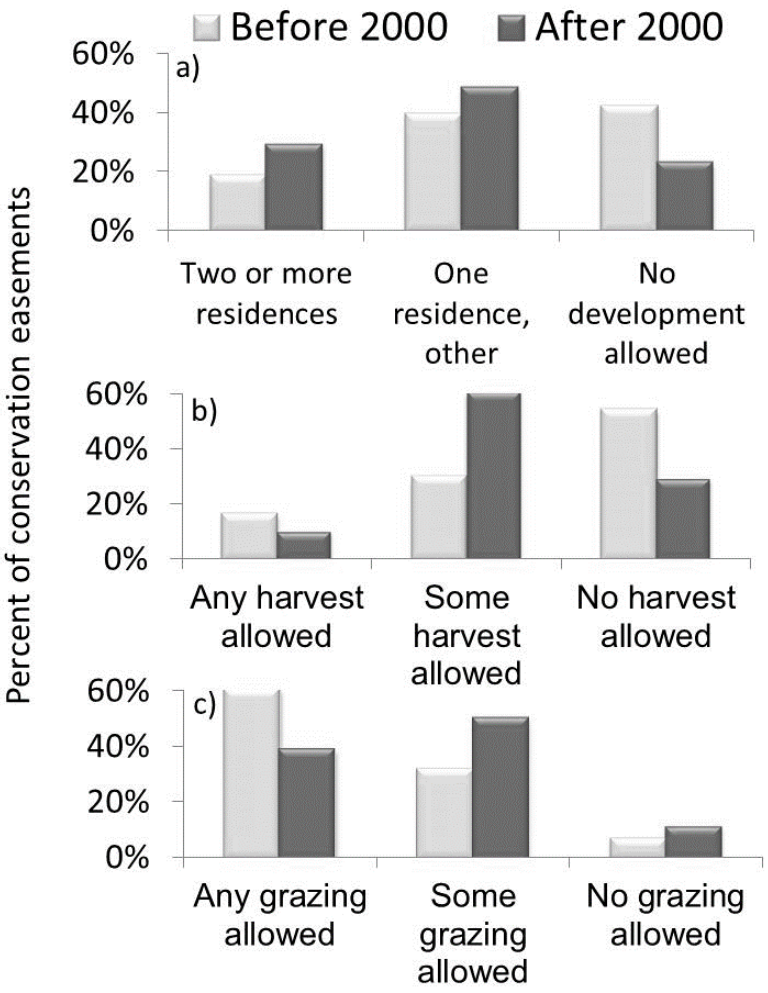
279 Trends in land-use restrictions differed by land-use. Waste dumping and mining were more
280 likely to be prohibited after 2000 while other land-use terms showed no significant change
281 (Table 3).

282 Table 3. Percent of CEs with each land-use restriction before and after 2000 (n=269).

	χ^2	**P-value**	**Before 2000 (n=76)**	**After 2000 (n=193)**
Alteration of Land Restricted	0.186	0.666	77.6%	75.1%
Waste Dumping Restricted	9.301	**0.002**	81.6%	93.8%
Alteration of Water Courses Restricted	3.167	0.075	63.2%	74.1%
Mining Prohibited	4.613	**0.032**	49.3%	64.0%
Public Access Allowed	0.465	0.495	26.3%	22.4%
Commercial Recreation Prohibited	0.041	0.839	28.9%	30.2%
Landowner Plantings Restricted or Landowner Required to Manage Invasive Species	3.292	0.070	22.4%	33.7%

283 CEs were more likely to allow development after 2000 (Fig. 3a). CEs have become twice as
284 likely to allow one residence or other structures (including agricultural buildings, sheds or
285 cabins) and 2.5 times more likely to allow two or more residences than no development (odds
286 ratios in Table 4).

287 Figure 3**.** Since 2000, conservation easements have shifted to allowing more development (2a,
288 n=269), some timber harvesting (2b, forested properties n=126) and some grazing (2c,
289 grass/shrub properties n=108).



290

291 Interestingly, half (52%) of South Carolina's CEs allowed for two or more residences,

compared to only 9% to 27% of CEs in each of the other five states.

Table 4**.** Results of a multinomial logistic regression indicating the effects of size, year, and working land purpose on the likelihood of allowing development (reference category is no development allowed).

	2+ residences vs No development			1 residence or other structures vs No development		
	B	p-value	Odds ratio	B	p-value	Odds ratio
Year (after 2000)	0.916	0.028	2.499	0.676	0.046	1.965
Working land purpose	1.759	<0.001	5.804	1.667	<0.001	5.294
Property size (>500 ac)	1.755	<0.001	5.786	0.87	0.016	2.388
Intercept	-2.127	<0.001		-0.847	0.006	
N	269					
χ^2	68.854					
Df	6					
p-value	<0.001					
Goodness of Fit, Pearson	χ^2=11.386, df=8, p=0.183					
Pseudo R-squared, Cox and Snell	0.226					
% Predicted Correctly	54%					

Timber harvest and grazing terms experienced a shift toward the middle. That is, timber harvests are less likely to be prohibited and more likely to be explicitly permitted with some restrictions in the CE or a management plan after 2000 (Fig. 3b). Before 2000, 54% of forested CEs did not allow harvest, compared to only 30% of forested CEs after 2000. CE terms that allowed harvest with some restrictions increased from 30% of forested CEs before 2000 to 61% after 2000, while terms that allowed any unrestricted harvest or were silent on harvest declined from 16% before 2000 to 10% after 2000. The shift from no harvest to some harvest with restrictions was significant in the multinomial logistic regression that controlled for working land

purpose (Appendix Table 3). The odds ratios indicated that CEs were 3 times more likely to allow some harvest with restrictions than no harvest (1/odds ratio of 0.33=3.03) or any unrestricted harvest (1/odds ratio of 0.31=3.23) after 2000.

Grazing terms also provided some evidence of a shift to the middle, meaning that fewer properties prohibited grazing outright and fewer properties allowed it without restriction after 2000 (Fig. 3c). Before 2000, only 32% of grass/shrub CEs include some restrictions on grazing in the CE or management plan, whereas 50% of those after 2000 included some restrictions. The percent of CEs with no grazing restrictions declined from 61% to 39%. No grazing is allowed in 7% of CEs grass/shrub CEs before 2000 and 11% after 2000. Grazing terms had a marginally-significant shift from any harvest allowed to some harvest allowed with restrictions, once property size and working land purpose were controlled for in the model (Appendix Table 4).

3.3. Perceived changes in CE terms

Based on inductive coding, we identified recurring themes in response to questions asking whether an organization's approach to drafting CEs had changed, and if so, how and why it changed (Table 5). The majority of interviewees (85%) stated that the organization had changed its approach to drafting. An additional two interviewees initially stated that the approach had not changed, but then described changes (increasing the percent of interviewees discussing changes to 88%). While most described a shift toward complexity, we also heard that some organizations are starting to reign in the complexity of CEs in favor of simple, clear terms. We heard conflicting views about whether recent CEs are more or less restrictive of private land uses.

Table 5. Interview responses from organization staff describing types of change in conservation easement (CE) drafting (n=73).

Change to CE drafting approach	# of interviewees	Representative statements or examples from interviews
CEs are more specific, detailed	27	"Much longer and more detailed over time, with much more professional drafting"
Influence of a particular staff	15	"Documents changed based on the attorney involved."
Use of model CE	14	Organizations developed templates
Less restrictive	12	"Whenever possible we get away from micromanagement type issues on the property, for instance trying to not be involved in day-to-day management type issues…."
Shift in organization focus	8	The organization was more preservationist focused before, but now has more "working land easements."
Reaction to IRS or case law	8	"Due to IRS ranks becoming stricter, easements must become more sophisticated and detailed to meet the regulations."
Organization looked to LTA	7	"Basically we've followed the changes in the Land Trust Alliance's approach to easement drafting."
Easier to enforce or monitor	6	"[We] are using more terms that are monitorable and enforceable and trying to provide flexibility for adaptive management."
Less specific	5	"The language used to be too specific"
Simpler	4	Desire to make the language "clearer" and "more simple"
More prohibitions	4	"… much easier to constrain an activity than it is to prescribe one." Constraints can be documented and tracked.

4. DISCUSSION

4.1. Hypothesis 1: Increasing Complexity

Consistent with our expectations, CEs have become more complex and detailed. Our analysis of CE documents and interviews with conservation practitioners shows how CEs are increasing in complexity. This increase in complexity likely has many sources, including repeat players in

negotiations, contingency planning, diffusion of innovation, organizational learning, and the increased prominence of purchased CEs on large properties with working land uses.

4.1.1. Purposes

Within our sample, the number and specificity of purposes increased over time. These more diverse purposes may be an effort to ensure compliance with state and federal law as parties mirror the language that appears in statutes. CE purposes may also respond to judicial action. For example, conservationists worry about the implications of the doctrine of changed conditions, which suggests that when circumstances change the landscape such that purposes can no longer be fulfilled, CEs will terminate (Jay, 2012). Adding purposes to a CE could then serve as a backstop: if one purpose becomes impossible to fulfill, the CE need not face termination if another purpose can be met. Some holders may seek to expand the number of purposes because most CEs prohibit any actions inconsistent with the CE's purposes. An expansion of purposes then can serve as a legal hook to later prevent uncontemplated landowner action. Such language has been used to prevent erecting cellphone towers (T-Mobile Northeast v. Town of Islip (2012c)) and filling in sinkholes (The Nature Conservancy v. Sims,(2012a)), and may serve as a way to prohibit hydrofracking (Stockport Mountain Corp. v. Norcross Wildlife Foundation(2012b)).

However, an increasing number of purposes could cause trouble for both enforcement and management of protected lands. Most CEs did not identify dominant purposes. Enforcement concerns arise when holders and courts are faced with multiple conflicting mandates without an indication of which might take precedence. Generally, multiple purposes can create confusion for land managers (Fischman, 2002). Purposes may become incompatible, and individual land-use

restrictions and permissions may conflict with one or more purposes.

4.1.2. Land-Use Terms

CEs since 2000 are likely to mention more land-use terms such as for dumping waste, mining, and subdivision of the property. Land-use terms are likely to increase for some of the same reasons as purposes. Increased litigation and scrutiny by the IRS as well as involvement by other government entities like state attorneys general may also lead drafters to add language clarifying rights and responsibilities. Additionally, as CEs cover larger and more varied properties in more circumstances (e.g., in development schemes or in working landscapes), there may be a greater need to explain permitted and prohibited land uses.

One of the biggest increases was in management plans, which is an intriguing phenomenon. On one hand it represents an acknowledgement of both the need to accommodate change and the potential need for active land management (Rissman et al., 2014). On the other hand, management plans can provide an avenue for delaying controversial decisions regarding CE terms as items eluding agreement can be pushed off for consideration another day and hidden from public review (Rissman et al., 2013).

4.1.3. Procedural Clauses

Later CEs were more likely to contain procedural boilerplate clauses regarding Acts of God, dispute resolution, and amendment. Interviews indicated that sometimes these new clauses appeared when new staff members or outside attorneys began drafting the documents. This may have the impact of leaving terms in subsequent CEs with individual staff members no longer certain of their origin (Argote, 1999).The largest increase was in amendment clauses, which is particularly noteworthy as it accompanies a heated debate within the conservation community

about the role of amendments. Some have argued that perpetual agreements should not be amended and this generally appears to be the view of the IRS (Bjork v. Draper (2010)). However, most conservationists acknowledge that it is unrealistic and impractical to have long-term agreements without mechanisms for change. The Land Trust Alliance recommends including amendment clauses and having amendment policies (Alliance, 2004) and accreditation requires it (Commission, 2014). This trend may help explain the increased presence of dispute resolution and Acts of God clauses. We may also be starting to see some backlash or course correction in response to the increasing complexity of CE terms in which organizations are focusing more on designing decision-making processes for settling CE disputes.

4.2. Hypothesis 2: Decreasing Restrictiveness

We hypothesized that land use terms have become less restrictive, but the trends we found are more complex. Restrictions on development have declined, and CEs created after 2000 are twice as likely to allow at least one or two residences than CEs before 2000. However, we found a shift toward compromise for timber harvest and grazing, with a decline in complete prohibitions on timber harvest and a decline in completely unrestricted grazing. Provisions regarding waste dumping and mining tended to be more restrictive. The presence of a mining term may be influenced by federal tax regulations requiring limitations on mining for tax-deductible CEs.

The patterns of CE evolution reflect broader trends in conservation policy and philosophy. Earlier CEs were viewed as a close alternative to fee simple ownership in which some landowners desired or were willing to accept limited land uses on their properties. We see evidence of the shift toward conserving used landscapes and the intent to promote compatibility between natural resource production and conservation (Brunson and Huntsinger, 2008; Sayre,

2005). However at some level, increasing private land uses also suggests challenges for preventing undue private benefit and abuse of the CE tool. Meanwhile, increasing knowledge about conservation science indicates conservation benefits may be available in small slices. For example, practitioners may be more confident about allowing selective cutting of a forest parcel and still protecting some species habitat and water quality benefits. This has led to a shift toward the middle as the parties seek to compromise on the private land uses permitted on conserved properties.

5. CONCLUSION

CEs held a promise of being a simple low-cost alternative to fee-simple acquisition, but are becoming increasingly complex. As CEs get complex we have shown that they have become more restrictive for mining, waste dumping, and grazing, but less restrictive for development and timber harvesting. CEs are more likely to detail what landowners can and cannot do and consider more issues than they had previously. CEs are being used more often and in more contexts. Where CEs cover larger land areas, they are more likely to spell out rights and obligations and related to multiple land uses. We show that the question of what it means to conserve private land, and what balance of private and public rights and responsibilities are being codified in conservation restrictions, has changed over time. In an era of fragmented and devolved governance, nonprofit organizations and governments with considerable rulemaking autonomy are negotiating conservation terms. It is important to understand these choices and trends shaping the private-land conservation estate.

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