

# Landowner Satisfaction with the Wetland Reserve Program in Texas: A Mixed-Methods Analysis

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Received: 30 July 2014 / Accepted: 10 August 2015 / Published online: 20 August 2015  
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**Abstract** Using mail survey data and telephone interviews, we report on landowner satisfaction with permanent easements held by the Natural Resources Conservation Service (NRCS) throughout Texas. This study found that landowners were dissatisfied with the NRCS Wetland Reserve Program (WRP), conflicting with results of previous studies. The objective of this study was to explore specific reasons for frustration expressed by landowners with the program. We found three predominant themes underpinning program dissatisfaction: (1) upfront restoration failures, (2) overly restrictive easement constraints, and (3) bureaucratic hurdles limiting landowners' ability to conduct adaptive management on their easement property. The implications of this study suggest that attitudes of landowners participating in the WRP may limit the long-term effectiveness of this program. Suggestions for improving the program include implementing timely, ecologically sound restoration procedures and streamlining and simplifying the approval process for management activity requests. In addition, the NRCS should consider revising WRP restriction guidelines in order to provide more balance between protection goals and landowner autonomy.

**Keywords** Conservation easements · Wetlands · Private land management · Wetland Reserve Program

## Introduction

Perpetual conservation easement programs are being increasingly used, in both the public and private sectors, as a mechanism for promoting conservation on private lands. By 2010, there were an estimated 8.8 Million acres of land in the U.S. protected by land trust-held conservation easements and an estimated 12 million acres of conservation easements owned by public agencies (Chang 2011; Pidot 2005). While the use and application of conservation easements (or easements) has been widely studied from the legal perspective (Byers and Ponte 2005; Cheever 1996; Gustanski and Squires 2000; Levin 2010; Lindstrom 2008; McLaughlin 2005), the ecological and social ramifications of conservation easements have not been thoroughly evaluated (McDonald et al. 2007; Merenlender et al. 2004; Pidot 2005). Recent research has begun examining ecological outcomes on conservation easement-protected landscapes (Byrd et al. 2009; Noone et al. 2012; Pocewicz et al. 2011; Rissman et al. 2007; Wallace et al. 2008) but less is known about the social consequences of conveying conservation easements. Research into motivational drivers of easement conveyance identified pro-environmental attitudes as the primary incentive cited by landowners partnered with non-profit land trusts (Farmer et al. 2011b) and economic inducements driving agricultural easement conveyance (Rilla 2002). However, in order to understand the effectiveness of easements, it is crucial to ascertain the long-term sociological ramifications of implementing such protection mechanisms.

A 2014 study reporting on the results of a mail survey of landowners throughout Texas owning properties with a permanent conservation easement ( $n = 251$ ) found that, while most landowners are satisfied with their conservation easement, there are two groups of landowners who are

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generally unhappy with them (Stroman and Kreuter 2014). The first group consisted of successive generation landowners, those who did not convey the easement on their land but acquired the property either through inheritance or purchase. The second group consisted of those landowners whose easement was held by a federal government agency, specifically landowners whose easement was held by the Natural Resources Conservation Service (NRCS) as part of the Wetland Reserve Program (WRP). This finding contrasts with those of Forshay et al. (2005), who surveyed 69 WRP landowners in a four-county area of Wisconsin and reported that landowners participating in the WRP are generally pleased with the easement program. However, the authors reported on four areas of concern: restrictions against permanent deer hunting stands, increased tax rates on WRP sites, limited communication with NRCS agency staff, and lack of opportunity for landowner participation in the restoration process. Similarly, a 2013 report of landowners participating in the NRCS Farm and Ranchlands Protection Program (FRPP) found that 96 % of landowners reported being either satisfied or very satisfied with their conservation easement (Esseks and Schilling 2013). A 2015 study of landowners participating in a conservation easement program in South Africa also reported high levels of satisfaction (~85 % of respondents reported being partially or very satisfied) with their program (Selinske et al. 2015). However, the majority of enrollees (60 %) were in term-limited conservation easements, which, while restrictive do not impose the same level of constraints as perpetual easement programs do on the use of the affected property.

The purpose of this paper is to describe specific reasons for landowner discontent with WRP easements and provide recommendations for programmatic changes that address those issues. In order to better understand the root causes of this reported dissatisfaction, we rely on two sources of data: a state-wide mail survey and in-depth telephone interviews. This paper reports on the results of a 2011 mail survey asking landowners in Texas about their conservation easement and the relationship with their easement holder. Additionally, a subset of survey respondents participated in follow-up telephone interviews designed to better understand potential institutional causes of expressed landowner dissatisfaction with the WRP easement program. The mail survey, outlined below, identified landowners with federally held easements as being significantly less satisfied with both their conservation easement and the relationship with their easement holder. The mail survey results informed the design and implementation of the second part of this study, the telephone interview component. Using more than one analytical method allowed integration of the quantitative data generated by the mail survey with qualitative information from the interviews, providing a more comprehensive understanding of landowner

experiences and attitudes regarding their easement program (Farmer et al. 2011a; Johnson and Onwuegbuzie 2004).

## Overview of the WRP Program

The WRP is a federal easement program primarily designed to provide financial incentives to private landowners for retiring marginal agricultural land and converting that land into wildlife habitat. The stated goal of the WRP program is to “provide habitat for fish and wildlife, including threatened and endangered species, improve water quality by filtering sediments and chemicals, reduce flooding, recharge groundwater, protect biological diversity and provide opportunities for education, scientific and limited recreational activities” (NRCS 2014b). The WRP program is unique in that wetland creation or restoration is an essential component of every easement enrolled in the program. Most other easement programs serve to protect natural resources already in place and do not require any upfront restoration. WRP projects are not designed to protect existing, healthy wetlands. Rather, the purpose of the program is to create, expand, and restore sites suitable for wetlands such as frequently flooded agricultural fields. The WRP was initiated in 1992 as part of the 1990 Farm Bill (NRCS 2013). By 2007, almost 2 billion dollars had been spent enrolling 1.9 million acres in the program. Of that total, 89.8 % of the funding (\$1.94 billion) and 77.6 % of the total acreage (1.49 million acres) enrolled had been for securing permanent conservation easements (NRCS 2009). Since then, the total acreage enrolled in the WRP program has topped 2.6 million acres with WRP projects located in all 50 U.S. states (NRCS 2013).

In 2014, the WRP was combined with the Grassland Reserve Program (GRP) and the FRPP into the new Agricultural Conservation Easement Program (ACEP). However, aside from the new name, the WRP (now called Wetland Reserve Easements) will continue to be managed according to the same rules and guidelines as before (C. Ross, NRCS, personal communication, February 2014). Most conservation easements are individually negotiated between grantor landowners and their easement-holding partner organization allowing for a wide variety of restriction and management configurations. In theory, this individually tailored approach allows landowners more latitude to incorporate adaptive management practices into their day-to-day operations; however, the WRP uses the same restrictions for every easement it accepts (Rissman et al. 2013). This program dictates particularly restrictive easement covenants only permitting landowners the right to (1) control access to the property, (2) maintain and convey title, (3) quiet enjoyment, (4) undeveloped recreational uses, (5) subsurface mineral resources, and (6) water rights (NRCS 2013). As explained by one NRCS staff member, “When we acquire a WRP easement, the federal government is

basically almost acquiring all the bundle of [property] rights” (Rissman et al. 2013). Landowners wanting to conduct any management activities such as prescribed burning, rotational grazing, mowing, or road maintenance on WRP properties must submit a formal request, called a compatible use agreement (CUA) each year before any activity is permitted.

## Materials and Methods

### Mail Survey

The mail survey component of this project is the same as reported by Stroman and Kreuter (2014). The overall study population used for the mail survey included all identifiable landowners in Texas whose property was protected by a perpetual conservation easement in 2010. To identify all of the conservation easements in Texas, the Texas Land Trust Council, a state-wide non-profit organization that maintains a conservation easement-tracking database, was consulted. They provided a list of easement-holding organizations, both private (e.g., land trusts) and public (federal, state, and local government agencies), that were known to hold perpetual conservation easements in Texas. Through this consultation, 33 different organizations holding conservation easements in Texas were identified. Each of these easement-holding entities was contacted by mail to request landowner contact information to establish the survey database. Sixteen of the 33 conservation easement holders directly provided contact information for 429 landowners. Another 16 organizations, collectively owning approximately 89 easements, declined to provide their landowner contact information. However, contact information was obtained using public county deed records for 69 of these 89 conservation easement landowners. Finally, one organization, representing 20 landowners, did not provide member contact information but instead participated in the study by concurrently sending the survey items directly to its partner landowners. In total, 518 surveys were mailed out. However, this does not represent 518 separate conservation easement landowners. Seven landowners received two surveys and one landowner (a state agency) received four surveys. Each of these multiple mailings represented separate conservation easements, usually held by different easement-holding organizations.

The survey was initiated in September 2011 and was terminated 4 months after the first mailing. The survey questionnaire contained 78 questions addressing four primary areas of inquiry including land management activities on easement properties, easement-specific issues, property rights orientations, and landowner demographics. Survey participants were also invited to submit comments at the

end of the questionnaire, some of which are used for discussion purposes. The survey was administered using a five-phase modified Dillman’s survey protocol (Dillman 2000), which included a pre-survey notification letter (day 1), the survey questionnaire with a cover letter (day 7), a reminder/thank you postcard (day 14), a replacement questionnaire with cover letter (day 28), and a final reminder/thank you postcard (day 42) in place of a second replacement questionnaire recommended by Dillman. To test for non-response bias, a one-page abbreviated questionnaire including eight attitudinal and demographic indicator questions was sent in March 2012 to all survey non-respondents. Survey data were entered into Microsoft Excel and analyzed using STATA 12.0. (StataCorp 2011). Statistical analyses included descriptive statistics, *t* tests, and  $\chi^2$  for demographic data, principle components analysis (PCA) for dependent variable reduction, and Mann–Whitney tests and multivariate ordinal logistic regression modeling for comparing WRP and non-WRP conservation easement landowners. Ordinal logistic regression was used because the dependent variables were quantified using a seven-category Likert-type response scale, and this approach avoids the assumption that the distances between response options are equal (Long and Freese 2006).

### Telephone Interviews

In the mail survey, participants were asked whether they were willing to participate in a follow-up telephone interview. From this sub-sample ( $n = 203$ ), we isolated landowners who had easements held by either the NRCS as part of the WRP program ( $n = 41$ ) or The Nature Conservancy (TNC) ( $n = 26$ ). We used TNC-held easements as a comparison population for several reasons. First, they are the largest non-governmental easement-holding organizations in our study area. As such, they operate state wide, unlike many of the other conservation easement holders in Texas, who tend to operate within a few counties. Second, they held a comparable number of easements ( $n = 88$ ) within our study area as the NRCS ( $n = 126$ ). Finally, both organizations have significant staff capacity capable of conducting easement monitoring and partnered landowner outreach. A randomized contact list was created from the group of survey participants who indicated their willingness to participate in a follow-up interview. Initially, the goal was to interview 20 landowners from each of the NRCS-WRP and TNC groups. Landowners who could not be contacted or declined to be interviewed once contacted were replaced with the next available participant. During the interview process, we interviewed 20 landowners partnered with the NRCS but were only able to recruit 14 landowners with TNC easements. Interview questions were designed to examine issues uncovered during the mail survey analysis (Table 1).

**Table 1** Telephone interview questions

Questions	Response option
1. Was your easement donated or sold to the easement holder	Yes/no
2. Do you feel that you receive any benefits from your conservation easement? (Please expand on your answer)	Yes/no
3. Do you feel that society receives any benefits from your conservation easement? (Please expand on your answer)	Yes/no
4. Do you like the relationship between you and your easement holder? Why or why not?	Yes/no
5. What do you feel that your easement holder could do better with respect to your particular easement?	Open ended
6. Have you ever requested a variance or permission to conduct activities prohibited under the easement? (If yes, what was the outcome of the request?)	Yes/no
7. Have you ever knowingly or unintentionally violated the conservation easement? (If yes, what was the outcome of the violation?)	Yes/no
8. Do you think that your easement property would be worth less money than similar nearby properties if you tried to sell it?	More/less
9. How did you learn about the conservation easement and terms of the conservation easement? <sup>a</sup>	Open ended
10. What were your thoughts about the easement at the time you acquired the property? <sup>a</sup>	Open ended

<sup>a</sup> Only successive generation landowners were asked this question

The interviews were conducted by telephone, they were semi-structured, they ranged in duration from 10 to 55 min, and they were recorded. Interviews were conducted by one interviewer over a 12-month period between May 2013 and May 2014. To build generalizations from the qualitative interview data, interview recordings and notes were analyzed and coded for topics and emergent themes. Seven of the questions prompted the participant to make a dichotomous choice (e.g., yes/no) and then expand on their answers with more information. Qualitative analysis was used to extract iterative themes and develop codes which best captured the concept being expressed by the landowner; for example, when a landowner was asked “what do you think your easement holder could do better with respect to your particular easement” and responded by describing their experience with their wetland restoration project that part of their statement was coded as a “restoration issue.” Analysis and coding was conducted by the interviewer. Once all of the interviews were analyzed and coded, we extracted the most commonly reoccurring themes for discussion.

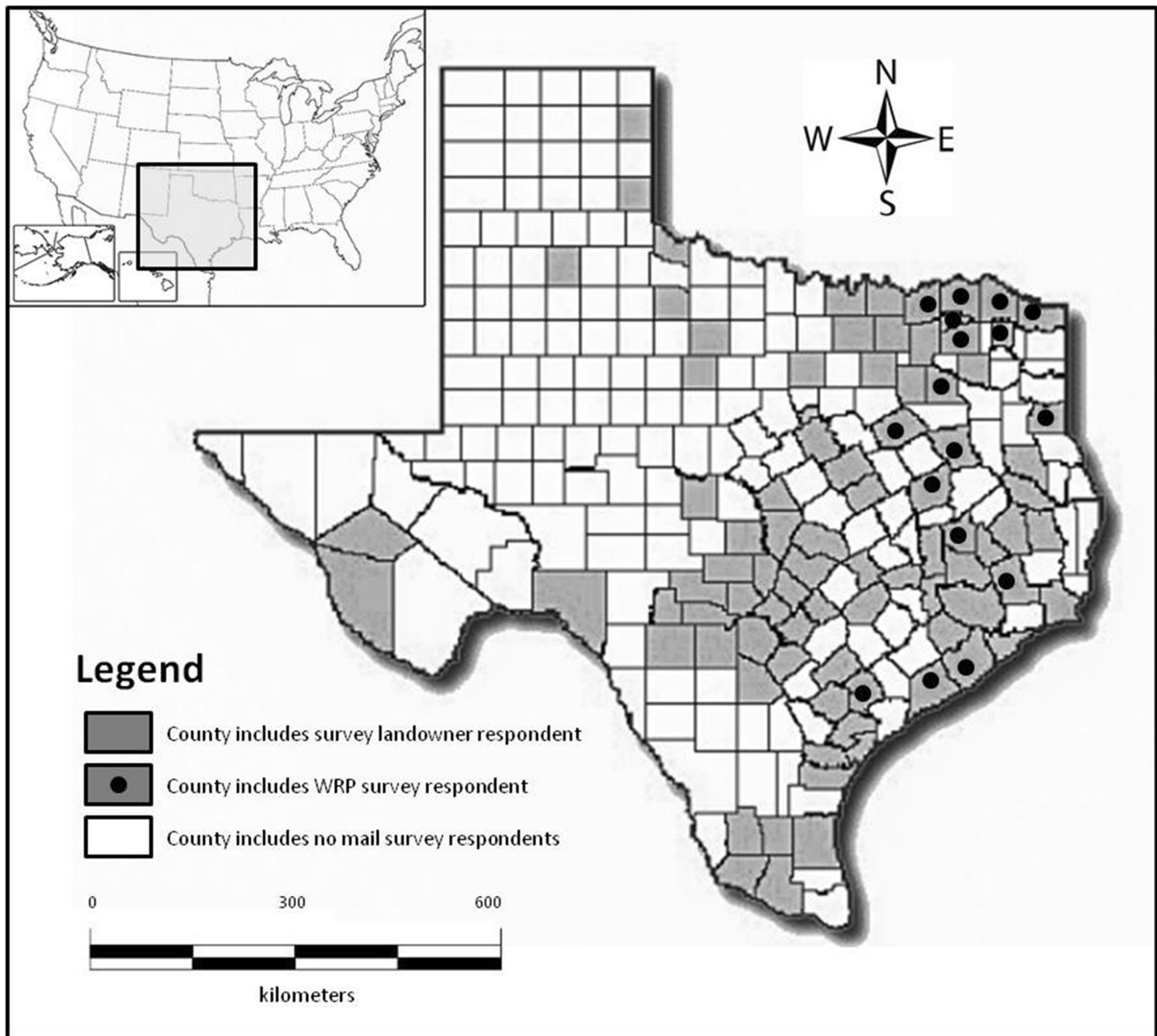
## Results

### Mail Survey Results

Of the initial 518 mail survey participants, we received 18 returned questionnaires due to incorrect addresses resulting in an effective survey sample size of 500. Over half of the survey participants (273) returned questionnaires, 251 of which were completed and 22 were either incomplete or

indicating that the respondents did not wish to participate. This translates into a 50 % useable response rate. Of the 227 abridged questionnaires sent to the non-respondents, 47 completed questionnaires were received, representing 21 % of the non-response pool and 9 % of the total survey sample. Analysis of the abbreviated non-respondents survey did not find any statistically significant differences between survey participants and non-participants for five of the six measured indicators (age, whether the landowner had granted the easement, frequency of interaction between landowner and easement holder, residency on easement property, and willingness to abide by the terms of the easement). Non-respondents were significantly more likely to express a desire to terminate their conservation easement.

The survey respondents comprised owners of land under easements held by 26 of the 33 easement-holding organizations in Texas. The seven conservation easement holders not represented in our survey responses were all small organizations collectively holding about 13 conservation easements. Of the easements on properties of the survey respondents, 61 % ( $n = 152$ ) were held by non-governmental organizations, 23 % ( $n = 59$ ) by federal agencies, and 16 % ( $n = 40$ ) by state or local agencies. Of the 59 respondents having an easement held by a federal agency, 45 were WRP easements and 11 were GRP easements held by the NRCS, and the remaining three were easements held by the U.S. Fish and Wildlife Service. Overall, we received responses from landowners owning conservation easements in 87 different counties; respondents with WRP easements were confined to 17 counties located throughout the eastern half of the state (Fig. 1).



**Fig. 1** Mail survey respondents’ conservation easement location by county

Overall, the survey respondents were predominantly male (83 %) with an average age of 62 years (SD = 11.19, range 35–88 years) and an average of 16.4 years of formal education (SD = 3.16, range 5–27 years). Of the respondents, 82 % were the original grantors of the easement. A majority of landowners lived on their conservation easement property at least part time; 36 % resided full time on their conservation easement property, 19 % were weekend residents, and 45 % were absentee landowners. In combination, the survey respondents reported owning 328,148 acres under conservation easements. The size of easement properties ranged from 5 to 30,000 acres, with a median of 350 acres ( $M = 1384$  ac,  $SD = 3407.6$ ). The length of easement property ownership also ranged widely from one to 165 years

(median = 12 years,  $M = 38$  years,  $SD = 43.1$ ), with 38 respondents (15 %) reporting that the property had been in their family for 100 years or more. Overall, 61 % of respondents reported earning no income from their easement-encumbered property, 34 % reported earning up to 25 % of their income from it, and only 5 % reported earning more than 25 % of their income from it indicating that, in general, landowners with easement-encumbered properties do not rely substantially on that property to generate income.

Key demographical attributes of WRP and other conservation easement landowners were compared. As demonstrated in Table 2, WRP landowners were not significantly different from other conservation easement landowners, with one exception. Landowners having a



**Table 2** Demographical differences between WRP and non-WRP conservation easement landowners

Demographic variable	WRP easement landowners ( <i>n</i> = 45)	Other easement landowners ( <i>n</i> = 192)	Significance test
Gender			$\chi^2 P < 0.275$
Male	88.6	81.8	
Female	11.4	18.2	
Age	<i>M</i> = 62	<i>M</i> = 62	<i>t</i> test <i>P</i> < 0.9204
Live on property			$\chi^2 P < 0.985$
Yes	36 %	36 %	
Length of property ownership			$\chi^2 P < 0.754$
≤3 years	5 %	7 %	
3–10 years	42 %	34 %	
11–25 years	30 %	36 %	
25+ years	23 %	23 %	
Annual income from CE property			$\chi^2 P < 0.003$
0 %	42 %	66 %	
1–25 %	53 %	28 %	
>26 %	5 %	5 %	

Bolded results are statistically significant at *P* < 0.05

**Table 3** Median and mean response scores from WRP and non-WRP survey questionnaire responses to conservation easement (CE) satisfaction questions

Survey question <sup>a</sup>	Median		Mean		% diff. in mean	M–W sig <sup>b</sup>
	WRP ( <i>n</i> = 45)	Non-WRP ( <i>n</i> = 192)	WRP ( <i>n</i> = 45)	Non-WRP ( <i>n</i> = 192)		
Good relationship with CE holder	6	7	5.29	6.33	16.4	<b>&lt;0.0001</b>
Happy to comply with CE rules	6	7	4.64	6.26	25.9	<b>&lt;0.0001</b>
Grant additional CEs	4	6	3.84	5.50	30.2	<b>&lt;0.0001</b>
Terminate the CE	4	1	4.27	2.06	51.8	<b>&lt;0.0001</b>

<sup>a</sup> Answers based on 7-point scale 1 strongly disagree, 2 disagree, 3 slightly disagree, 4 neutral, 5 slightly agree, 6 agree, 7 strongly agree

<sup>b</sup> Bolded values are significantly different at *P* < 0.01, based on Mann–Whitney (M–W) rank test

WRP easement were more likely to rely on their easement property for a portion of their annual income with 58 % of them having reported that they receive some income from their easement property compared with just 33 % of other easement landowners.

Level of satisfaction with conservation easements was initially compared between WRP landowners and other easement landowners by analyzing responses to four survey questions. The questions were as follows: (1) I have a good relationship with the organization that holds my conservation easement; (2) I am happy to abide by the terms and conditions of the conservation easement on my land; (3) If I had the opportunity, I would consider granting further conservation easements on additional land that I own; and (4) Given the option, I would terminate the conservation easement on my property. Preliminary examination of each of the four satisfaction-related survey questions indicated that landowners with a WRP easement were significantly less

likely to express satisfaction with their conservation easement or with the relationship between themselves and their easement holder (Table 3).

Frequency analysis of the same four satisfaction questions found that while 77 % of WRP landowners (vs. 93 % on non-WRP landowners) acknowledged having a good relationship with the NRCS, only 24 % of them strongly agreed with that statement (vs. 58 % of non-WRP landowners). Similarly, 66 % of WRP landowners agreed with the statement, “I am happy to abide by the terms and conditions of the conservation easement on my land” but only 11 % indicated strong agreement. In contrast, a full 92 % of landowners with a different type of conservation easement agreed with that same statement (52 % strongly agreed). WRP landowners are also less likely to consider granting additional easements (40 % of WRP landowners agreed vs. 71 % of non-WRP landowners). Moreover, they are also much more likely to express a desire to terminate their easement than landowners

**Table 4** Rotated factor loading results of PCA analysis on conservation easement satisfaction issues with Cronbach’s  $\alpha$  of internal reliability

Survey question	Rotated factor loading scores ( $\alpha = 0.8259$ )
If I had the opportunity, I would consider granting further conservation easements on additional land that I own	0.8533
I am happy to abide by the terms and conditions of the conservation easement on my land	0.8147
Given the option, I would <i>not</i> terminate the conservation easement on my property <sup>a</sup>	0.8628
I have a good relationship with the organization that holds my conservation easement	0.7063

<sup>a</sup> Question was reverse coded for PCA analysis

with easements held by other organizations; 44 % of WRP landowners agreed with this sentiment and of those 35 % agreed strongly with the statement. Conversely, only 10 % of non-WRP landowners agreed that they wished to terminate their easement (4 % strongly agreed).

In order to reduce the number of dependent variables and simplify our regression analysis, we conducted a principal components analysis (PCA) with varimax rotation using the same four questions concerning easement satisfaction and the relationship between the landowner and the easement holder reported in Table 2. PCA allows highly correlated variables to be combined into additive indices or factors (Treiman 2009). After the initial PCA analysis, orthogonal varimax rotation was applied to create indices without inter-correlated components. Finally, Cronbach’s alpha coefficients were derived to assess the internal consistency of the specified variables. We used a cutoff point for Cronbach’s  $\alpha > 0.70$  to determine which factors to retain for modeling purposes, a threshold generally considered acceptable for social science research purposes (UCLA Academic Technology Services 2004).

PCA results from the section of the survey asking landowners specific questions about their conservation easements yielded one distinct factor (Table 4).

Factor I represents landowners’ expressed satisfaction with their easement using the four metrics reported in Table 4. This factor was used as the dependent variable in our regression model (Table 5).

Regression analysis confirmed our preliminary finding that WRP landowners were significantly less satisfied overall than other conservation easement landowners. Even after controlling for demographics (gender, age, and education), residency on the CE property, and reliance on income from CE land, WRP landowners were 86 % less likely than non-WRP landowners to report being satisfied with their conservation easement. We also found that both women (70 % more likely) and grantor landowners (396 % more likely) were more likely to report being satisfied with the easement.

**Table 5** Results of ordinal logistic regression analysis for satisfaction with conservation easement (CE) (bolded results are statistically significant at  $P < 0.05$ )

CE satisfaction model statistics ( $n = 186$ )			
Prob $> \chi^2$			0.0000
Nagelkerke’s $R$ square			0.3340
Independent variables	$\beta$ coeff.	% $\Delta$ odds	$P$ value
WRP CE landowner (binary; 1 = WRP, 0 = non-WRP landowner)	<b>-1.986</b>	<b>-86.3</b>	<b>0.000</b>
CE grantor landowner (binary; 1 = grantor, 0 = successive generation landowner)	<b>1.603</b>	<b>396.9</b>	<b>0.000</b>
Gender (binary; 1 = male, 0 = female)	<b>-1.213</b>	<b>-70.3</b>	<b>0.002</b>
Age in 2011 (years)	–	–	0.142
Years of formal education	–	–	0.828
Annual income from CE property = 1–25 %	–	–	0.374
Annual income from CE property >25 %	–	–	0.764
Weekend resident <sup>a</sup>	–	–	0.108
Absentee landowner <sup>a</sup>	–	–	0.775

<sup>a</sup> Full-time CE resident is the reference category

### Interview Results

While most participants were the original grantors of the easement, 35 % of NRCS-affiliated interviewees (7 of 20) were successive generation landowners (i.e., they either purchased or inherited the easement property) and only 14 % of TNC-affiliated interviewees (2 of 14) were not the original grantors of their easement. Another notable difference between the NRCS and TNC interviewees was that all of the NRCS landowners had sold their easement to the NRCS, while almost every TNC interview participant (86 %) indicated that their easement was donated to the TNC. While landowners selling their easement receive a direct one-time monetary payment, landowners donating an

easement usually benefit financially primarily in the form of tax deductions.

Interview participants were asked if they felt like they received any benefits from their conservation easement. Among NRCS-affiliated landowners, 70 % (compared to 86 % of TNC-affiliated landowners) indicated that they *personally* had received some benefit from their easement, with financial assistance being the most commonly cited benefit. TNC landowners, whose easements were mostly donated, tended to express intangible benefits from their easement in terms of their satisfaction from protecting the environment. When asked if their conservation easement provided any benefits to *society*, 70 % of NRCS-affiliated landowners agreed compared to 100 % of TNC-affiliated landowners.

Thematic analysis of the telephone interviews revealed three prominent topics common to dissatisfaction with WRP conservation easements but which were not frequently expressed by landowners with TNC-held conservation easements. These three themes included (1) overly restrictive easement constraints, (2) inflexible land management options, and (3) unsatisfactory restoration work, each of which is presented below.

#### *Easement Restrictions*

While some survey respondents and interviewees who had conservation easements held by other organizations expressed frustration with the restrictions their conservation easements imposed, WRP landowners were consistently more likely to state that these restrictions were as a source of considerable dissatisfaction with their conservation easements. The following two quotes illustrate such restriction-related dissatisfaction well:

*“It is as if they own the property and I am allowed to enter it to walk around but can do absolutely nothing to it unless I go through a complex process to request actions that I consider my “quiet enjoyment” of my property.”*

*“It feels like selling your soul to the devil. Proceeds from the easement allowed me to keep the property. However, terms of the easement and restrictions have greatly reduced the satisfaction of ownership. It feels more like I’m leasing the place for hunting than owning the property. I’ve lost the ability to use the property for hay and cattle and to manage it as I see fit.”*

However, it also seems like many of the frustrations expressed by NRCS landowners over easement restrictions stem from their inability to conduct land management activities in a timely, effective manner. In contrast, only two of the TNC landowner interviewees expressed dissatisfaction with their easement restrictions (vs. 10 WRP landowner interviewees).

#### *Management Flexibility*

Interviewees were asked if they had ever requested a variance to conduct activities prohibited under the easement. In addition, they were asked whether they had ever knowingly or unintentionally violated the easement. Most NRCS landowners interpreted a variance request as requesting permission to conduct management activities, which under WRP rules requires a CUA. Just over half of the NRCS interviewees ( $n = 11$ ) indicated that they had submitted a CUA for their property, with the most common types of requests being mowing along roads, planting food plots for deer, allowing grazing, and prescribed burning. Eighty percent (9 out of 11) of the WRP landowners interviewed who made such management requests indicated that their CUA application(s) had been denied. Several expressed frustration with not being allowed to mow their property roads regularly in order to facilitate access to the land. One interviewee was told that he could mow roadways only between July 1 and September 15 each year, which makes it very difficult for him to access the property during parts of the year and required larger mowing equipment to cut the accumulated biomass. Another interviewee was required, several years after the WRP easement was implemented, to reduce cultivated food plots from 5 to 1 acre each. This interviewee commented:

*“... when I start asking them real pointed questions [about why it was necessary to reduce the feed plots by 80 %], they can’t answer .... Why do I need to take my food plots from 5 acres to 1 acre, that is not even as big as my front yard. Can you tell me on 2,000 acres that I just have to leave a couple acres here and there for deer?”*

Other landowners indicated frustration with the CUA process itself. While a few reported receiving a CUA decision within 3–4 weeks, others said that the process for approval often takes from 6 weeks up to several months. As one successive generation landowner explained,

*“The government is not very nimble and so you may start this process in January and not get an answer until June ... it is hard to understand why they can’t be more efficient”*

Furthermore, landowners whose CUA was denied report not knowing the reasons for denial.

*“We’ve filed 25 permits and they have only approved 2. In the original agreement there are certain things you can do and certain things you can’t do and we did a compatible agreement we thought there shouldn’t be a problem at all we came back and they were all denied and nobody would even give us an answer.”*



As a result of such frustrations, six of the NRCS landowner interviewees reported deliberately circumventing the CUA process and conducting management either scheduled around compliance monitoring visits or with the hopes of not getting caught. One landowner described receiving a variance to improve existing roads but was subsequently told that he needed to continue submitting a CUA every 6 months in order to mow those roads, which he found unreasonable. He eventually decided to mow the roads without going through the CUA process. When asked if he would continue to intentionally violate the easement in order to conduct road maintenance, he responded,

*“Yes, that is my plan. Until they try to bring legal action, I am just tired of messing with them. I am going to continue to mow those roads and keep it accessible where I can get around my property. If they take me to court, I will just fight it but I think they are being unreasonable in their interpretation of the easement.”*

Another landowner, very active in conservation, who has multiple conservation easements with more than one organization related, commented,

*“Every time I have asked for a compatible use, like planting trees, it has eventually been granted but they take so long that...I just go ahead and do it. When I do bulldozer work, they always inspect my place in the late spring, so I do all my bulldozer work in the fall and by the time they come around, it is all grassed up and they do not know that anything has been done when they come back the next year.”*

Six of the TNC landowners reported requesting a variance to conduct activities prohibited by their conservation easement. However, most of the variances reported by TNC landowners consisted of one-time exceptions. For example, one landowner needed to move a proposed road to facilitate access, another asked to build a new cattle-watering trough in a designated no-development zone, and another wanted to harvest trees to improve wildlife habitat. All of these requests were granted, with the interviewees reporting minimal bureaucracy in the approval process. However, one TNC landowner, a rancher dependent on their easement land for their livelihood, wanted to incorporate goats into the grazing operations. While this was not expressly prohibited under the easement restrictions, it became a source of contention between TNC and the landowner. This landowner noted that most TNC conservation easement landowners do not rely on their property for income generation and suggested that subsistence level production may be inherently incompatible with the environmental protection goals of many easement-holding organizations.

### *Restoration Work*

Several landowners expressed dissatisfaction with the NRCS’ oversight of the implementation of the restoration phase of their WRP project. While this issue primarily affects grantor landowners, successive landowners were also affected by poor restoration implementation. One successive landowner explained that the water control structures put into place during the creation of moist-soil units on his WRP were installed incorrectly and therefore do not work as intended. Others recounted restoration projects promised yet not completed. For example one said,

*“We [NRCS and the landowner] planted maybe ... 30-40 acres of trees and it [the restoration plan] called for 200 [acres]. We were supposed to put in a lake, it was supposed to be 27, 28 acres, [but] they’ve kept cutting back to 8 or 10 acres. Anyway it has just been a fight all the way and I wasn’t in a position to take anybody to court or anything like that.”*

Another landowner expressed a similar sentiment saying,

*“Dealing with bureaucracy and lack of progress is major drawback. None of the improvements or management practices scheduled for this past year were even started by NRCS.”*

Additionally, some NRCS landowners were told that the NRCS would maintain some components of the restoration work, specifically water control structures. However, many landowners reported that eventually they were told that funding had dried up and maintenance of such structures would be the landowner’s responsibility. However, other landowners did not perceive that NRCS would maintain restoration infrastructure. This disconnect may be the result of incomplete or inconsistent communication between NRCS staff and landowners regarding the restoration phase of the project.

### *Other Issues*

Finally, interview participants were asked what their easement holder could do better, with respect to their particular easement. Many of the TNC landowners provided no specific recommendations, but others did express a desire for more communication, particularly in the form of technical assistance and information about conducting appropriate land management specific to their property. One TNC landowner with several different conservation easements summed up this idea saying,

*“The reality is unless we go looking for them, we don’t hear too much from them outside of monitoring the easement, so I suppose that it wouldn’t hurt if*

*TNC staff were to be aware of resources, whether it is grants or training or other help with our management, they could be more pro-active in passing that information on along to us. My sense is that they do not have anybody in our area who's really actively cultivating those landowner relationships but I think that may not be so true in other areas."*

NRCS landowners also articulated the need for more communication between themselves and their local NRCS staff contact. However, rather than providing technical assistance, many landowners wanted more information about how to successfully navigate organization hurdles impeding their ability to implement land management.

## Discussion

Given the level of landowner dissatisfaction with the WRP program observed in our mail survey, we relied on individual interviews to better understand specific, common complaints. Three prevailing issues emerged as the most frequently cited causes for dissatisfaction: (1) Initial restoration work was not completed in a timely or satisfactory manner to meet ecological goals; (2) WRP restrictions are too inflexible to allow owners to enjoy the use of their property; and (3) NRCS guidelines and bureaucratic hurdles do not allow for timely, adaptive, or best management practices on WRP lands. Each is discussed below.

First, as previously stated, WRP easements are based on creation or restoration of new or previous wetland areas. Because of this, most WRP projects have an initial construction or restoration component. Examples of wetland creation/restoration activities include installation of water control structures, reforestation tree plantings, and fencing. Many of the NRCS landowners interviewed for this study cited concerns about the efficiency and efficacy of the restoration work completed on their property. Some restoration activities were undertaken during incompatible seasons. For example, landowner-related stories of reforestation projects started during the late spring or early summer, resulting in complete tree mortality. These errors highlight the need for adequate technical training and guidance on the part of NRCS to its local field staff responsible for coordinating and implementing restoration project work.

Second, as previously discussed, the WRP uses a standardized set of restrictions for all of its perpetual easements. These constraints place particularly severe limitations on how a landowner can use their WRP-protected property. In their research evaluating conservation easement restrictions, Rissman et al. (2013) stated, "The NRCS-WRP had a unique approach by restricting all private landowner use rights, and then granting conditional use permits to the landowner at the

discretion of the NRCS, within the guidelines of NRCS policy." While the intent of the restrictions may be to provide the highest level of protection to these properties, we question whether this strategy is the most effective means for ensuring the land management application practices required to support that goal. The other two conservation easement programs administered by the NRCS under the ACEP (GRP and FRPP) do not include the same level of landowner restrictions on property rights (NRCS 2014a). It is possible to restructure WRP restriction guidelines so that landowners are granted more autonomy in making land use decisions without compromising the protections afforded by the easement. Private land trusts have extensive experience negotiating easements that provide more balance between protections and landowner autonomy. Their experiences may prove to be a good resource for WRP restriction reforms. In addition, our results and previous studies suggest that landowner constraints are impacting natural resource management on WRP lands (Stroman and Kreuter 2015). Inability to conduct ongoing management not only proved to be a source of landowner dissatisfaction, it also has the ability to undermine the desired ecological outcomes of the WRP program. Results from this study suggest that it is possible that overly bureaucratic hurdles may depress landowners' willingness to engage in land management activities that could maintain or even enhance WRP-restored properties. Management inputs are essential to maintaining restored landscapes (Rissman et al. 2015; VanRees-Siewert and Dinsmore 1996; Weiher et al. 1996). While the WRP program has the highest level of control over retained property rights, it also has the highest level of administrative discretion in allowing or disallowing land management (Rissman et al. 2013).

Third, landowners are finding that their ability to conduct any management on their land is hampered by bureaucratic roadblocks and a lack of transparency. This is in contrast to studies of other conservation easement programs which have suggested that a lack of time and access to labor resources were the greatest hindrances to active land management (Fitzsimons and Carr 2014). One potential solution is that NRCS could require landowners wishing to conduct compatible management practices to formalize a management plan developed in collaboration between landowners and local NRCS staff (Rissman et al. 2013, 2015). Approved management plans could cover multiple years and incorporate contingency plans for unpredictable events such as drought or wildfire. Allowing for multi-year planning would reduce NRCS staff time processing CUAs and allow for more locally based decision making. The CUA process itself was frequently mentioned as a source of frustration among NRCS landowners. One of the issues raised is the amount of time it takes landowners to have a CUA approved. Many land management practices, such as prescribed burning, are only

appropriate during certain seasons and untimely approval prevents their effective implementation. During informal discussions, NRCS staff indicated that they were trying to streamline that process to provide a response to a CUA within 4–6 weeks. However, only one of the landowners interviewed indicated that they had received CUA approval within that time frame. Another source of contention with the CUA process was the perceived lack of transparency. Landowners reported receiving no feedback about why applications for CUAs are approved or declined. It is possible that many rejected CUAs would be allowed with minimal modifications. NRCS should provide landowners with specific information regarding their reasons for CUA rejection. Local staff should also work closely with partner landowners providing assistance submitting CUAs that conform to NRCS guidelines and are likely to get approved. In response to the lengthy and opaque CUA process, several landowners admitted to conducting management without submitting a CUA. Continuation of this scenario does not serve either the interests of the landowners nor the NRCS. It forces landowners into a situation whereby they are deliberately subverting program rules they agreed to and unnecessarily undermine the property rights purchased by the NRCS. In addition, it likely has a dramatic effect on landowners' level of satisfaction with the WRP. Moving forward, some of the annual compliance monitoring for the WRP program in Texas is being outsourced to the US Fish and Wildlife Service. While this may prove beneficial, particularly in regards to providing landowners with technical guidance for best land management practices, it also raises the possibility of an increased disconnect between the NRCS and its partnered landowners. Landowners who wish to conduct management and submit a CUA may find the process even more difficult to negotiate without having an established relationship with their local NRCS field staff contact.

One key demographical difference we found between the WRP and non-WRP landowner groups was reliance on their property for a portion of their annual income. It is possible that landowners dependent on their land for earnings may feel more disadvantaged by overly restrictive land use regulations, leading to increased easement dissatisfaction. Given that many NRCS easement projects occur within working landscapes, NRCS should consider revising WRP guidelines that allow for increased compatible uses (where and when appropriate) including cattle grazing, haying operations, limited permanent hunting infrastructure and mitigation banking. Options such as these allow landowners to continue receiving financial benefits from their property without compromising the wetland protection goals. The WRP is now part of the ACEP, a name that suggests combining conservation with working, agricultural landscapes. It stands to reason that landowners participating in this

program maintain their ability to continue using these lands in ways that allow production while meeting conservation goals. However, in its current form, it seems as if the WRP accomplishes neither of these objectives particularly well.

Finally, while this study provides an important assessment of a large-scale permanent conservation easement program from the private landowner perspective, there are several limitations in this research worth discussing. First, our population sample was contained within one state. While the WRP program is used in all 50 states, it is employed most heavily in states along the Mississippi River and its associated drainages, in states bordering the Great Lakes and along the Eastern Seaboard (NRCS 2013). It is possible that some of the issues raised by Texas WRP landowners, particularly those regarding restoration implementation and obtaining management approvals, may be less problematic in other states with different state-level management. However, since the easement restrictions themselves are the same throughout the U.S., we suspect that WRP landowners in general may feel unduly constrained by the WRP easement rules. Our sample size of WRP landowners was also relatively small with 45 survey participants and 20 interviews, but our results add to the small body of knowledge concerning landowner attitudes about federal conservation programs. Future research that includes multiple states and a larger sample population may provide a more robust analysis to guide policy recommendations. The results of this study also suggest the need for more research in order to better understand how social factors impact easement programs.

An examination of the measured outputs of the program, 22 years, almost two million acres enrolled are impressive and speak to the potential for large-scale conservation programs on private lands. However, in order to adequately assess the benefits of the WRP, we need to look beyond ecological outcomes. Particularly on initiatives conducting conservation on private lands, one of the outcomes that should be considered is how well the program is working from the perspective of the landowner. To maintain long-term support for private land conservation programs, it is crucial to successfully integrate desired biological outcomes with social values. Negative experiences, such as those highlighted here, have the ability to hinder on the ground conservation and undermine programmatic viability, particularly if those experiences are spread through social networks (Reimer and Prokopy 2014). As the WRP transitions into the ACEP, the results of this study provide policy makers with an opportunity to reconsider how these conservation easements are established, implemented, and maintained. Combining social science analysis with ecological assessments of easement-protected properties is critical for providing a thorough assessment of conservation easement outcomes and determining if conservation easements are an effective investment of public funding dollars.

**Acknowledgments** We would like to thank The Nature Conservancy of Texas for providing funding for the mail surveys. We would also like to thank all of the land trusts and public agencies that assisted us by providing contact information for our survey participants. Finally, we thank all of the landowners who gave us their time for this research.

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