



Factors affecting landowner enrollment in wetland restoration in northeastern New York State

Rick Welsh^a, Michael E. Webb^{b,*}, Tom A. Langen^c

^a Department of Public Health, Food Studies & Nutrition, Syracuse University, United States

^b Instructional Design, Development, and Evaluation, School of Education, Syracuse University, United States

^c Department of Biology, Clarkson University, United States

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ABSTRACT

In the U.S. the Natural Resources Conservation Service (NRCS) administers the Wetland Reserve Program (WRP) that funds the restoration of wetlands on privately-owned lands under conservation easements. These programs provide a number of potential benefits to landowners along with the wetland including access roads and reduced property taxes on the easement land. To receive these benefits, landowners agree to limit development opportunities on their land but can continue to use it for other activities such as hunting, fishing, viewing wildlife, haying, or extracting wood for personal use. We surveyed 35 participants in the NRCS program in northeastern New York State to measure factors associated with willingness to enroll land in the WRP program beyond direct monetary incentives. In addition, we conducted follow up interviews with eight program participants to enhance our understanding of landowners' motivations to participate in the programs. We found that valuing the conservation aspects of wetlands, being retired and a female respondent were associated with willingness to enroll lands without compensation. In addition, qualitative interviews provided context to these findings such that landowners enrolled land due to 1) lived experience with wetland use and preservation; 2) a conservation ethic in regards to preserving nature; and 3) the desire to use the restored wetland as a 'showcase' for family and community members.

1. Introduction

Conservation and restoration of wetlands is considered to be a critical environmental priority in the U.S. and globally (Lewis 2001; Millennium Ecosystem Assessment, 2005). One of the most significant changes in land cover in the world in recent times is wetland loss caused by drainage and degradation (Millennium Ecosystem Assessment, 2005). Although wetlands provide valuable ecosystem services, they are often destroyed for conversion to agriculture, residential development, and other land uses (Verhoeven et al., 2006; Zedler and Kercher, 2005). In the last two centuries, the contiguous United States alone lost over 50% of its wetlands, in part due to incentives and support provided by federal and state governments (Vileis 1997). Starting with the Clean Water Act of 1972 and the 1989 'no net loss' wetland policy, the U.S. federal policy objective of reversing net wetland loss has been addressed through the establishment of programs to conserve, enhance, restore and create wetlands (Lewis 2001). While many of these programs restore and establish new wetlands on public land, a number of analysts argue that the greatest need for wetland restoration is on private lands (Brinson and Eckles 2010;

Scodari 1997). This is because, traditionally, private lands are where the largest wetland losses occurred and are located where there is greatest need of the ecosystem services that are provided by wetlands (Maresch et al., 2008; Zedler 2003).

Voluntary public-private partnership programs (PPP) for wetland restoration or wetland enhancement associated with establishment of conservation easements are effective programs that have been used to preserve and increase the number of wetlands in the United States. During the last 20 years, over one million hectares of wetlands have been conserved, enhanced, or restored by the U.S. Fish & Wildlife Service (USFWS) through its Partners for Fish & Wildlife program (PFW) and the Natural Resources Conservation Service (NRCS) through its Wetlands Reserve Program (WRP). Partnerships may occur between the landowners and one agency, landowners and both agencies, or one of the agencies and a non-profit non-governmental agency, such as Ducks Unlimited (DU). Additionally, state resource agencies may also help with the establishment and stewardship of wetland restoration conservation easements.

For example, one of the services provided by the USDA Natural Resources Conservation Service is the Agricultural Conservation

* Corresponding author at: PO Box 145, 202 Main Street, Edwards, NY 13635, United States.
E-mail address: miwebb@syr.edu (M.E. Webb).

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Easement Program (ACEP). This program is comprised of two parts: Agricultural Land Easements and The Wetland Reserve Easement Program (formerly the Wetland Reserve Program). The focus of this paper is on wetlands restored and conserved by NRCS and partners under the WRP. Under this program and its successor, the NRCS works with landowners to protect, restore, manage, and enhance wetlands by excavating potholes, constructing small dams, or installing water control structures (NRCS, 2016). This is a voluntary program; landowners receive no direct monetary compensation for participation in WRP. NRCS and other agency partners (USFWS, Ducks Unlimited) cover partially or fully the costs associated with project design, technical assistance and project implementation, including the hiring of contractors. NRCS covers the legal costs associated with the conservation easement transaction. Landowners donating a conservation easement to NRCS can claim the value of the easement, in terms of reduced appraised property value, as a deduction on their US Federal Income Tax. In New York State, a conservation easement tax credit provides a state rebate of 25% of local property taxes paid on land under a donated conservation easement- although USDA is prohibited from providing guidance on tax implications of WRP participation. Therefore, to some degree, and in a number of ways, landowners are *compensated* for enrolling their lands in the WRP. In return for these services and other benefits, the landowner agrees to a number of development restrictions on the land through a conservation easement (NRCS, 2016). Usually the easement is perpetual, meaning that subsequent owners of the property are also subject to the easement, and cannot reverse it unilaterally.

A critical issue for success of PPP wetland restoration programs like the WRP is the perceptions of participant landowners of the value or utility of wetland restorations and their associated conservation easements (Vaske and Korbin, 2001; Miller et al., 2011; King and Anderson 2004; Cooper and Jacobson 2009; Pease et al., 1997). Measuring and understanding land-owner motivations for participating in wetland restoration and conservation programs are fundamental for optimizing program funds and conservation and social outcomes. Previous research underscores the key roles attitudes, knowledge, and perceived benefits play in enrolling lands in restoration and conservation programs.

For example, Pease et al. (1997) indicated that “*private landowners will restore and conserve wetlands if they believe that as good stewards of the land it is the right thing to do, if they can afford it, and if they can get some technical help*”. Wallace et al. (2007) surveyed and interviewed landowners involved in a number of types of private land conservation (PLC) programs in Colorado. They found that landowners perceived multiple ecological benefits from participation in the PLC programs, with the greatest consensus around maintaining open space, enhancing wildlife habitat, and producing environmental amenities such as attractive views.

Bastian et al. (2017) compared the preferences of landowners who had implemented conservation easements with land trust personnel preferences. They found that there was significant overlap of preferences, but that landowners were influenced negatively to implement conservation easements by the perceived market value of their land, the term length of the easement, and the perceived agricultural productivity of their land. Landowners with greater community attachment and a higher perceived value of ecosystem services from the easements were more likely to implement a conservation easement. In an economic (stated-preference) analysis aimed at Southeastern U.S. forest owners’ willingness to enroll land in a conservation easement to protect an endangered species, Sorce et al. (2011) found little interest, in general, on the part of forest landowners. However, those with interest were disposed negatively towards longer easement tenures and lack of managerial control over their land. Incentive payments to forest landowners also increased willingness to participate in the program. Conservation effectiveness of the programs had no impact on participation.

In another study, Sorce and Conner (2010) measured divergence among landowners’ preferences to participate in voluntary conservation programs with one group responding to social networks and norms and

positive conservation outcomes, while the other was incentivized primarily by compensation of some type. And Farmer et al. (2011) found that landowners often enrolled lands in easement programs because of personal history with the land, and environmental values and other non-monetary reasons. In another study, Farmer et al. (2017) found that Indiana landowners who have enrolled land in a conservation program could be grouped by motivations for enrolling in the program: financial, ecological, and residential. In addition, they measured links between these landowner orientations and adoption of conservation practices. Ecological and residential orientations were linked positively with conservation practice use, while a financial orientation was not. Finally, Brenner et al. (2013) found in a survey of landowners in the Finger Lakes Region of New York State that membership in environmental organizations, using land for recreation and shorter term residency were associated with consideration of enrolling land in an easement program while hunting and fishing and male gender decreased interest in conservation easements.

We extend this body of research with a mixed method approach to measure motivations for enrolling in the WRP administered by NRCS in St. Lawrence River Valley of New York State. Rather than focus on the financial compensation required to attract landowners, we followed those studies that found that landowners enrolled for non-monetary reasons. Specifically we investigated via quantitative surveys the extent to which landowners enrolled in the WRP assert that they *would do so even without financial compensation through tax breaks, direct payments or in-kind services*. We also investigated how strongly this motivation for participating in WRP was associated with: (1) the conservation value they associate with wetlands, (2) use of the wetlands by the enrollee, and, (3) sociodemographic variables (e.g. gender, employment status). Finally, we collected qualitative data from interviews of enrollees to complement the quantitative findings, to learn how their lived experiences and values influence their use of the wetlands as well as their decision to enroll their lands in the conservation program.

Our goals in this study were to understand landowner participation in wetland restoration conservation easement programs such that NRCS and partner agencies can more effectively recruit landowners for these public-private partnerships. Moreover, we hoped our findings would be useful for the public and political representatives for understanding the values of WRP and similar programs; it is recognized that public and community leaders need to be made aware of the potential benefits and costs associated with participation in these types of programs (Stern 2006).

2. The study region

The WRP wetland restoration properties we surveyed were located within a 6000 km² expanse of Jefferson, St. Lawrence, and Franklin Counties in the St. Lawrence River Valley of northeastern New York State (44.6°N, 75.2°W), and included three ecological regions with correspondingly distinct landscapes (Reschke 1990). The Eastern Ontario Plains and St. Lawrence Plains are rolling agricultural lowlands of hayfields, dairy farms, maize and a few other row crops (regions 42% and 31% agricultural respectively), with natural vegetation predominately northern mixed hardwood and conifer forests. The Indian River Lakes is comprised of numerous lakes, granite outcrops, and greater forest cover than the other two regions; it is only 15% agricultural. Overall, based on the 2011 National Land Cover Data, emergent and shrub wetlands compose 3.5% of the St. Lawrence River Valley (Homer et al., 2015). Human population densities outside of the scattered villages are low (around 10 persons/km²). Climate is cool (annual average temperature 6.6C at Canton, NY) and seasonal, including long cold winters and short cool summers (growing season 125 days); precipitation is high (94 cm annually) and occurs throughout the year. The region has been a national priority area for wildlife conservation, particularly for wetland and grassland birds (USFWS, 2006), and has been a focal region for conservation of New York Species of Greatest

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