Co-opting and resisting market based instruments for private land conservation

Cooke, Benjamin; Corbo-Perkins, Gabriella

https://researchrepository.rmit.edu.au/esploro/outputs/9921858981001341/filesAndLinks?institution=61RMIT_INST&index=null

Cooke, B., & Corbo-Perkins, G. (2018). Co-opting and resisting market based instruments for private land conservation. *Land Use Policy*, 70, 172–181. <https://doi.org/10.1016/j.landusepol.2017.10.027>
Document Version: Submitted Version

Published Version: <https://doi.org/10.1016/j.landusepol.2017.10.027>

Thank you for downloading this document from the RMIT Research Repository.

The RMIT Research Repository is an open access database showcasing the research outputs of RMIT University researchers.

RMIT Research Repository: <http://researchbank.rmit.edu.au/>

Citation:

Cooke, B and Corbo-Perkins, G 2018, 'Co-opting and resisting market based instruments for private land conservation', Land Use Policy, vol. 70, pp. 172-181.

See this record in the RMIT Research Repository at:

<https://researchbank.rmit.edu.au/view/rmit:45918>

Version: Submitted Manuscript

Copyright Statement:

© 2017 Elsevier Ltd. All rights reserved

Link to Published Version:

<https://dx.doi.org/10.1016/j.landusepol.2017.10.027>

Co-opting and resisting market based instruments for private land conservation

Abstract

The growing popularity of private land conservation (PLC) globally has quickly translated into an array of policies and programs aimed at achieving ecological benefits. The rise of PLC is entwined with the era of prominence for neoliberal governance, with private land proving congruous with the promotion of market-based instruments (MBIs) and the increasing reliance on private protected areas for conservation in lieu of government investment in public lands. Despite a growing literature on the implications of neoliberal environmental governance, there remains a need for specific insights into the way that individual landholders and ecologies can co-opt or resist the rationalities of MBIs in the practice of private land conservation. Through semi-structured interviews and property walks with 18 landholders, this research examines the implementation of a reverse-auction tender scheme called 'EcoTender' in Victoria, Australia. We uncovered four main tensions between the market logic of the program and conservation practice: 1) some landholders used the payment scheme to increase regulatory protections on their property through covenants/easements; 2) many landholders struggled to conceive of their stewardship practice as contractual labour; 3) landholders were producing novel ecosystems that challenged land management focused at the property parcel scale, but EcoTender encouraged a return to historical benchmark ecologies, and; 4) landholders wanted social collaboration when the program required competition for cost efficiency. Our insights show that PLC must create room for a diverse trajectory of conservation practice in dynamic socio-ecological contexts. This means careful reflection on the validity of assumptions underpinning MBIs, the trade-offs that come with applying market logic to conservation and the long-term implications of these instruments for policy and practice.

Key words: market-based instruments; reverse auction; environmental governance; qualitative; novel ecosystems; payments for ecosystem services

Introduction

Private land conservation (PLC) is generating significant interest and investment from governments, NGOs and communities around the globe (Clements, Cumming, and Kerley 2016). While the opportunities that PLC presents for complementing public protected areas continue to be championed in the field, recent scholarship has turned a critical eye to the environmental governance contexts in which PLC sits, and the implications of these governance arrangements for the way that conservation plays out in practice (Selinske et al. 2016; Lockie 2013; Logan and Wekerle 2008). The implications of neoliberal policy instruments for PLC has been central to this analysis, with questions centred around the transparency, equity and effectiveness of public expenditure for private conservation, especially in the form of conservation easements/covenants (Rissman et al. 2017; Morris 2008). The recent rise of market-based instruments (MBIs) as a conservation tool presents an important yet under-examined context in which to extend this analysis to policy mechanisms as they play out in practice (Selinske et al. 2016).

Unpacking the systematic assumptions of neoliberal governance critiques has shown that governance mentalities are rarely all encompassing when it comes to the creation of neoliberal policy subjects (Van Hecken, Bastiaensen, and Windey 2015). As Stuart, Benveniste, and Harris (2014) note, we need detailed case studies to examine how these approaches “succeed or fail when they move from ideas into practice” (p35). Existing research into the practice of MBIs has centred largely on payments of ecosystem services (PES) in the Majority World (McElwee et al. 2014; Pattanayak, Wunder, and Ferraro 2010; Sattler and Matzdorf 2013), and the capacity of PES to affect ongoing land use change (Van Hecken and Bastiaensen 2010). We build on this work by examining how MBIs that use a reverse auction tender model for private land conservation in a western capitalist context are materialising in practice, with a specific focus on how individual landholders as policy subjects are co-opting or resisting the logic of MBIs (Higgins et al. 2014; Roth and Dressler 2012; Van Hecken, Bastiaensen, and Windey 2015; McElwee et al. 2014). Given rapid environmental change processes that are challenging traditional approaches to conservation, we also explore how *ecologies* might resist the logic of MBIs. Empirical analysis of neoliberal environmental governance in action is critical if we are to properly assess the diverse forms neoliberalism can take,

and how the outcomes it generates can depart from policy intentions (Engel, Pagiola, and Wunder 2008).

This paper centres on a reverse-auction MBI called ‘EcoTender’ in Victoria, Australia. Through interviews, property walks and a participant forum with landholders, we examine the types of conservation actions that have emerged through landholder participation in EcoTender. We explore the tensions between the reverse auction tender model and landholder aspirations for permanent protection, how landholders approach the costing of their own labour as part of the bidding process, the ways that ecologies can resist program prescriptions framed around private property parcels and the desire for social interaction amongst participants in a program that requires competition between participants to drive down costs. We conclude by discussing the role for MBIs amidst local socio-ecological contexts and environmental change.

1. The governance context of MBIs for PLC

Neoliberal governance has traditionally been defined by increased marketisation, privatisation, and deregulation, in which state intervention is reduced (Mansfield 2009). However, more recent incarnations have seen state agencies take an active role in regulating through market processes, with the aim of increasing cost efficiency. This has been referred to by (Tickell and Peck 2002, p. 384) as “roll-out” neoliberalism, which denotes a shift in concern from deconstructing and denouncing “Keynesian-welfarist and social-collectivist institutions” and is “focused on the purposeful construction and consolidation of neoliberalized state forms, modes of governance, and regulatory relations” (ibid p. 384). Unsurprisingly, this complex process of both de-regulation and *re-regulation* has characterised recent approaches to environmental governance (Lockie and Higgins 2007; Stuart, Benveniste, and Harris 2014).

The neoliberalisation of environmental governance in particular consists of the promotion of market based programs and activities, the commodification and marketisation of the natural environment, and the increase in privately owned conservation sites, all of which result in decentralisation of conservation programs and control (Fletcher and Breitling 2012). The underlying assumption here is that market logic provides the most effective and efficient way to govern, as it promotes “competition, creativity and innovation” (Lockie 2013, p. 31; Fletcher and Büscher

2017). This means approaches to environmental governance are touted as simultaneously strengthening economic and ecological sustainability, and increasing both policy efficiency and flexibility (Fletcher et al. 2016). For private land conservation, the discourses of efficiency and flexibility have helped to legitimise market-based mechanisms (Cooke and Moon 2015).

1.1. Hybrid governance in practice

Efforts to generate social and ecological benefits through neoliberal policy have underscored the competing logics that can be inherent in this form of governance (Owley and Rissman 2016; Roth and Dressler 2012; Wynne-Jones 2012). MBIs can contribute to nature commodification, while at the same time promoting social learning, community empowerment and the protection of threatened species (Higgins, Dibden, and Cocklin 2012; Zammit 2013). Recognising these competing logics creates room for diverse outcomes and dismisses any notion of neoliberalism as a project that generates homogenous results (Fletcher and Breitling 2012; Roth and Dressler 2012; McElwee 2012). This combination of socio-environmental values within economically rationalist programs has been described as form of ‘*hybrid*’ governance (Lockie and Higgins 2007; Muradian and Rival 2012; Lemos and Agrawal 2006; Igoe and Brockington 2007). However, we are of the view that the embedded market rationalities in MBIs as a policy instrument makes them fundamentally neoliberal in conception. As Fletcher and Büscher (2017) note, it is the conceit that market logics are both the cause of and solution to environmental problems that make MBIs inherently neoliberal.

Hybrid governance reflects that “purely market-, state-, or civil society-based governance strategies depend for their efficacy on support from other domains of social interactions” (Lemos and Agrawal 2006. p. 298). While much of the work on neoliberal conservation has centred on structural critiques (Schwartz 2013), a growing body of research has begun to unpack hybrid governance by showing the divergence that can occur between the intentions of neoliberal conservation and the on-ground outcomes (McElwee et al. 2014; Vatn 2015; Van Hecken, Bastiaensen, and Windey 2015; Roth and Dressler 2012). Yet, in the context of western capitalist systems of governance, the analysis of MBIs for PLC in practice remains a largely understudied component of neoliberal conservation policy (Holmes 2015; Higgins, Dibden, and Cocklin 2012). We are specifically interested in understanding how and why individual landholders and

ecologies can co-opt, resist or re-appropriate MBIs to generate unanticipated conservation outcomes. Unpacking the way that ecologies conform or resist enrolment as a policy subject is particularly important given growing attention to nonhuman agency in conservation and the capacity for conservation policy to respond to environmental change in the Anthropocene (Head et al. 2015). As we will explore, MBIs can carry embedded assumptions about how different species might flourish and spread (or not) which can be heavily contingent on socio-ecological context.

1.2. EcoTender – a reverse auction tender scheme for private land conservation

To explore MBI implementation we focus on landholder participation in a reverse-auction tender scheme called ‘EcoTender’, operated by the state government of Victoria, Australia. EcoTender, along with its partner scheme ‘BushTender’, were active between 2001 and 2016, and represent some of the earliest trials of reverse auction MBIs for conservation (Whitten et al. 2013; Zammit 2013). Both schemes were part of a broader ‘EcoMarkets’ initiative that aimed to provide incentives to private landholders to manage land for conservation through the use market mechanisms (Stoneham et al. 2003; Blackmore and Doole 2013; Whitten et al. 2012). Both EcoTender and BushTender operated the same way, with the Victorian government serving as the buyer of environmental goods “on behalf of the public” (DEWLP, 2017). EcoTender saw landholders in a specified region competing for a finite pool of government funds through a blind auction. Landholders were invited to submit bids for the cost of conservation work they sought to undertake on their property. Like all reverse auctions, the process was designed to increase cost efficiency by creating competition for funds between landholders (Stoneham et al. 2003). Bids that represented the best value for money in terms of the conservation benefits generated (according to an Environmental Benefits Index developed by the government) would then be funded (Hajkowicz 2009). With the conclusion of the EcoTender contracts that are the focus of this research, there are no expressions of interest for new tenders currently open – conservation tenders are now primarily operated by catchment/watershed management agencies in Victoria.

Reverse auction tenders like EcoTender are considered an example of a payment approach to MBIs for conservation (Pirard 2012; Cooke and Moon 2015). The existence of competition between landholders for funds, the way landholder costs and ecological benefits are revealed through the bidding process, and the framing of the state as a

buyer of conservation benefits are the primary MBI characteristics of EcoTender (Pirard 2012; Wunder, Engel, and Pagiola 2008; Wunder 2015). These characteristics, in combination with the emphasis and reliance on private land rights for program delivery, reveal an assumption that market logics offer the solution to managing the problems of environmental degradation (Fletcher and Büscher 2017). It is the facilitation of “market-oriented arrangements” (Pellizzoni 2011, p796) by the state as a means for addressing environmental issues that reveals the neoliberal rationality of EcoTender.

The conservation actions sought by EcoTender focused on ecological restoration to pre-colonial benchmarks, the eradication of invasive weeds and the management and protection of existing patches of native vegetation (including fencing these patches). To date there has been widespread adoption of tender schemes in Australia and growing interest and implementation globally (Whitten et al. 2013; Zammit 2013), hence the importance of exploring the nuances of how they work in practice for both the subjects of those policies and the ecologies of which they are a part.

2. Methodology

2.1 Qualitative case study research design

This research involved a qualitative case study design that enabled an engagement with participants in the context of their surrounding environment. The aim here was to situate the research encounter within the EcoTender management sites, aligning the methodology with the research aim of exploring on-ground practices. The research design sought to understand the situated experiences, perspectives and practices of landholders. At the time the research was conducted, all landholders had recently concluded (within the last six months) or were soon to conclude (in the next six months) their five-year EcoTender contract. Interviewing this cohort was a deliberate intention of the research, as being near the end of their contract enabled reflection on a longer participation timeframe in EcoTender. In order to reach a cohort near completion, the research focused on the West Gippsland area, where a conservation tender program had been rolled out in 2011 (Figure 1). All participants were recruited through the Department of Environment, Land, Water and Planning (DELWP) who convened the program via an email to all participants in the West Gippsland region.

Figure 1. Map of the Gippsland study area to the east of Melbourne in Victoria, Australia.

The two research methods directed by this research design were semi-structured interviews and participant observation. The semi-structured interviews encouraged participants to talk through their land management practices both prior to EcoTender and during their EcoTender contract, followed by discussion of the land management priorities they gained through the conclusion, or impending conclusion, of their contracts. The interview questions also enabled room for landholders to tell stories about their experiences with EcoTender, with the aim of capturing specific events or activities of importance to landholders. Participants were prompted for specific stories relating to both the way their EcoTender-funded work had progressed over the course of their participation, and the experience of costing a tender bid.

Following the interview, the first author walked participants' properties with them to explore how management practices had played out through EcoTender. The participant observation was vital as it explicitly acknowledges that the physical environments that are of importance to people's lives will serve as repositories of memory and experience in those spaces (Trigger, Toussaint, & Mulcock, 2010; Strang 2010). During the participant observation walks, photos were taken of management activities and ecological features encountered. Notes were also recorded in a research journal to help

document the process, which was then expanded upon later in greater detail. The participant led the walk and told stories about management activities, prompted by the researcher when passing areas of visible management interventions. This included discussions of how specific fencing or restoration works unfolded, how issues or challenges were identified and dealt with, and what work still remained to be done. These walks averaged around 90 minutes in length.

Table 1 provides an outline of the land use and conservation activities of the participants involved in this research. Rather than provide comprehensive profiles of participants, this table serves as a reference for later discussion about the conservation actions of landholders and their experience of EcoTender. In broad terms, productive farmers were landholders who derived the majority of their income from the land, hobby farmers undertook small-scale agricultural activities for sale or self-sufficiency, and lifestyle or conservation landholders did not use their land for agriculture. No discernable differences emerged across these different cohorts in relation to the themes discussed below.

Participant	Land use	Conservation activities
Participant 1	Hobby farming/conservation	Landscape restoration through planting linear fence lines; weed control; fencing
Participant 2	Hobby farming/conservation	Restoration of large forest patch in gully; general weed control; fencing; covenant
Participant 3	Lifestyle landholding with no livestock; bushland preservation	Large scale pine tree removal, general weed control; restoration planting; covenant
Participant 4	Conservation	General weed control; pest animal trapping
Participant 5	Hobby farm/small orchard/conservation	Creek line restoration planting; general weed control; fencing
Participant 6	Hobby farming/conservation	Restoration planting around remnant patch; fencing; weed control; covenant
Participant 7	Hobby farming/conservation	Linear restoration planting; weed control
Participant 8	Hobby farming/conservation	Large scale weed removal from creek gully; restoration planting; general weed control
Participant 9	Productive farming (sheep, cattle)/conservation	Spot planting in remnant patch; general weed control
Participant 10	Hobby farming/conservation	Fencing; spot planting; general weed control
Participant 11	Productive farming (cattle)/conservation	Restoration planting; fencing; general weed control; covenant
Participant 12	Productive farming (cattle)/home business/conservation	Fencing; large scale weed removal (blackberries); spot planting
Participant 13	Small scale cattle grazing/home business/conservation	Fencing; linear restoration plantings; general weed control; covenant
Participant 14	Small scale cattle grazing/conservation	Fencing; linear restoration planting; general weed control; spot planting; covenant
Participant 15	Small scale cattle grazing/conservation	Fencing; spot planting; general weed control; covenant
Participant 16	Productive dairy farm/conservation	Large scale restoration; weed control; fencing; spot planting
Participant 17	Lifestyle landholding/conservation	Large scale restoration planting; general weed removal
Participant 18	Productive farming (mixed)/conservation	Large scale restoration planting; weed control; fencing

There is always an expectation that research relying on voluntary responses to a call for expressions of interest will only engage with the most willing, interested and compliant EcoTender participants. However, the willingness of participants to talk frankly of their experience, and the chance to walk participants' properties with them, revealed a wide range of landholder perspectives on EcoTender and private land conservation more generally. While the total number of participants in this research is 18, this represents nearly a quarter of the 81 participants from the West Gippsland EcoTender region.

2.2 Landholder participant forum

The landholder participant forum was an opportunity for participants to gather together with the researcher at the end of the research process to discuss findings and talk with each other about their EcoTender experience. There were 24 participants in the forum, including some local catchment/watershed management officers and DELWP staff. The forum was held on October 14, 2016 at the offices of the West Gippsland Catchment Management Authority in Traralgon, Gippsland. The forum was open to all EcoTender participants from the West Gippsland trial, whether they were interviewed for the research or not. The engagement with landholders and their interactions during the forum were part of the research process, with particular emphasis on how the discussions facilitated between participants reinforced the importance of social networks for conservation.

The forum provided an opportunity for the researcher to present the six themes discussed in the next section back to participants, allowing the forum to serve as a triangulation method for checking whether the themes identified by the researcher were those that participants themselves considered central to their experience. While participants did not substantively challenge any of the themes, there were some revisions made to the themes as a result of participant feedback. Most notably here was the point that some landholders priced their labour comprehensively as they wanted to be able to cover all management costs should they be successful in the auction process. From this perspective, the forum proved invaluable for validating findings as well as for facilitating landholder interaction.

3. Tenders in practice - the socio-ecological process of participation

In this section we cover four themes that reveal the ways that conservation tenders operate in practice: under-bidding for permanent protection, uncosted labour in bids, emergent novel ecosystems and the absence of social networks. We place a strong emphasis on the creative and unanticipated co-option of payments, given their prominence, and the implications this raises for using MBIs in PLC. However, we also highlight the alignments that occur between landholder practice and the logic of conservation tenders, to ensure a comprehensive and representative engagement with the empirical material.

3.1 Under-bidding to protect landscape legacies

As part of the tender bidding process, landholders were offered the opportunity to place a legal covenant/easement over remnant vegetation or revegetation sites. Covenants provide permanent protection for ecologies by placing legally binding constraints on land use, such as the ability to subdivide or clear the property of vegetation.

Landholders were encouraged to adopt permanent protection by the allocation of a higher assessment weighting to those bids, meaning landholders would have a greater chance of their bid being successful. Seven of the landholders involved in this study had secured a covenant on their land through EcoTender, but four of those landholders had used this mechanism in a manner that departed from the scheme's intention. Rather than using the covenant as a means for enhancing the competitiveness of their bid and increasing the likelihood of receiving money to cover conservation work, these four landholders reduced the value of their bid as a way to increase the chance of getting a covenant. Participant 6 explained the process of under-bidding to get a covenant:

"Oh, I just took a punt (on costing the bid), what I thought might get through, what it would cost, and what I was prepared to accept as a fair deal... I paid half of (the management costs)."

The covenant, rather than the money to cover management costs, became the 'hook' that enticed some landholders to participate. Participant 6 and Participant 11 employed the same strategy of estimating the land management costs associated with their bid (for example, tree planting or weed removal) and then only requested half of that money.

327

328 The desire to protect these mixed remnant and revegetation sites revealed an important
329 consideration for programs offering permanent protection – landholders are seeking to
330 protect the legacy of their land management effort and labour as well as the
331 conservation values on their land (Cooke and Lane 2015). Participant 6 noted that the
332 covenant will “stop a developer coming in and knocking it all over” when they do
333 eventually sell (Figure 2). Or in the words of Participant 1, “I don’t want somebody to
334 come in in a future time and bugger it up again. That would be an incredible waste.” The
335 sense that landholders could secure their conservation work against future threats gave
336 them confidence that the ecological benefits they had helped to generate could be
337 retained if they sold the property.

Figure 2. A small strip of linear remnant vegetation that has been covenanted through EcoTender. Protecting this against a future landholder who may seek to extend paddock space on either side was consider vital by Participant 6.

Three of the four participants who pursued this underbidding strategy had sought advice from a local conservation land trust (Trust for Nature), who had informed them that the ecologies on their properties were not of sufficient value or size to qualify for protection through that land trust. As such, EcoTender filled a gap in the permanent protection options previously available to landholders from either government or land trusts. Moreover, as Participant 11 noted, the cost associated with the covenant process

is substantial, so the opportunity to have your conservation legacy protected was an attractive proposition:

“The covenants are the important thing. Because when I’m too old to do this and we sell this, the [advertisement] in the paper... will say, ‘covenanted trees’”

While this process reduces government expenditure and satisfies landholders, under-bidding for a covenant raises questions about whether participants can meet the financial costs associated with their contract if their bid does not cover the full costs of the proposed works. For example, the bid from Participant 6 included fencing of remnant vegetation. However, the costs that were included in the bid only covered half the fencing costs. Should financial circumstances change, there is a risk that the landholder portion of the investment may not be met. Moreover, when landholders use their own funds to fulfil contract obligations, it may reduce the funds they have available for conservation work once the five-year payment period of the contract concludes. While the four participants noted here had few regrets about under-bidding as the covenant was “the main thing we wanted” (Participant 6), it was clear that participants’ would have liked more money for conservation work regardless of whether they had permanent protection.

For the majority of participants who did not seek permanent protection, some were not aware of its existence as a mechanism (two participants), others were unsure about its implications but were open to future covenanting (four participants) and two participants were firmly focused on funding fencing works and had not entertained any other activities. Beyond this cohort, three participants spoke about deliberately not pursuing a covenant. Participant’s 5 and 8 decided not to covenant due to concerns about reducing the future value of their land, as their retirement savings had been invested in the property. For Participant 8, this was to protect their retirement savings, which were tied up in the property. Participant 7 did not want to impinge on a “future owners’ right” to exploit the land in a way they might see fit, even if that meant the conservation work they had done would be impacted. This shows that there can be clear alignment between landholders with an absolutist perspective on private property rights, and conservation programs that align with a neoliberal governance mentality (Fletcher 2010).

3.2. Not costing personal labour in the EcoTender bid

The idea that some conservation work should exist outside the 'service contract' that had been established through the tender process proved to be a unique insight into the way environmental stewardship was perceived and practiced. Of the 18 research participants with an EcoTender contract, only five of the participants included the cost of their own labour as part of their bid. There was a strong sense that the labour of land management was the altruistic contribution that participants could provide as part of the conservation process. As Participant 16 noted, "(The labour is) my part, you've got to put in yourself".

For landholders who possess a strong conservation ethic already (a large proportion of participants here, given their pre-existing conservation efforts already noted), the money associated with EcoTender provides a unique opportunity to implement existing plans. However, the desire to be an active steward and contribute altruistically to conservation meant most landholders sought to volunteer their labour. As Participant 13 identified, "at the end we're only custodians of the land", and the goal of land management must be to leave land in a better condition than in which it was inherited. The desire to be an environmental steward and to leave a positive legacy is a well established motivation for landholders involved in PLC (Lokocz, Ryan, and Sadler 2011; Selinske et al. 2015):

Participant 17: "I put all the labour in (for rigging) the fences and planting the trees, so it was really we were looking for the cost of the materials and the cost of the trees"

First Author: Did you cost your labour?

Participant 17: No. No... just materials. Because when we bought the property, I wanted to do this, before I even knew what an Ecotender was... we thought, wouldn't that be great revegetating, just as a project to do for ourselves sort of thing."

This reveals the way that conservation practice is bound up with other expressions and experiences of land management, which might align more with intrinsic, recreational or

even aesthetic motivations for doing conservation work (Cooke and Lane 2015; Fischer and Bliss 2009). The difference here is that this conservation work is being done under contract, which changes the dynamic and the obligation for delivery. Participant 3 noted this it will be nice to “just plug along at my own pace and not be subject to a timeframe” now their contract is complete.

3.2.1 Concern about bid competitiveness

The landholder forum conducted at the conclusion of the fieldwork emphasised the uncertainty that many landholders had about how the process of pricing their bid. Terms like “flying blind” and “guess work” were used on a number of occasions to emphasise the level of uncertainty about what might constitute a competitive bid. Moreover, landholders feared missing out on getting at least some funding for conservation work they were already doing, even if it did not cover the total cost of the works proposed in their bid. While this bodes well for the program in terms of showing how the reverse-auction mechanism can increase cost effectiveness, it also reveals a risk to the maintenance of conservation benefits in the longer term. As Participant 2 noted, the only question about whether their conservation efforts would continue beyond their contract would be “how long are we going to be able to physically manage this property?” For example, most participants did not cost the labour associated with weed management, meaning there is a risk to achieving the intended management objectives should landholders no longer be capable of doing the work.

As Participant 17 noted, it was very difficult “trying to keep up with things” when you are volunteering your labour and the work was unfamiliar. Experiences like this saw a number of landholders reflect on the fact that “it would be good to get some help with (labour)” (Participant 2) if they were to apply for funding in the future. One participant who did cost their labour did so at low rates to reduce costs, but also because they considered themselves to be lay conservation practitioners:

Participants 3: [we costed labour at] about \$40 per tree, because we’re just rank amateurs, we’re not worth that much.”

There was however four landholders that sought to cost their bids accurately. For two of these participants, including a “realistic” (Participant 4) costing was important, as

they did not have the financial capacity to undertake the work if the full costs were not reflected in the bid. This was particularly important for two participants who were relying heavily on contractors to do the work in their bids. While all of these realistic bidders found it “very difficult to judge” (Participant 8) what their costs would be, they did not want to be burdened with having to fund too much of their project themselves.

3.3 Novel ecologies and landscape-scale ecological flows

The region in which EcoTender operates has a history of intensive landscape modification for agriculture following colonial invasion in 1788. While Aboriginal people prior to this time shaped the landscape, the large-scale clearing and rapid intensification of grazing, cropping and dairy are the reason why ecological restoration efforts are being pursued. However, changes to soil composition, introduced flora and fauna, and climate change mean that traditional efforts to bring back benchmark pre-colonial ecologies have been roundly identified as challenging, if not undesirable, given future climate scenarios and major environmental change (Mansfield et al. 2014). EcoTender restoration was largely informed by a combination of historical benchmark ecologies, with some flexibility for amendments on a case-by-case basis. Given that restoration was a common component of landholder bids, landholders encountered the difficulties historical benchmarks pose for restoration. Most importantly here, we see the way that ecologies – with a focus on plants in particular – can be difficult to enrol as willing participants in neoliberal conservation efforts.

Many participants dealt with the challenge of managing plantings that had not materialised in the way they had intended. All but two research participants had a restoration component to their conservation work, so the ecologies that were emerging possessed a high degree of novelty. The types of novel outcomes included a failure of seedlings to grow, the dieback of new plantings and established plants around them, secondary infestation of weed species that had been cleared prior to planting, environmental change factors like drought or flooding and the grazing of plantings by native and introduced fauna. Another common experience was the spread of plants from adjoining properties through seeds blow through on the wind or washed over through flooding.

485 The ubiquity of eucalypt species in Victoria means there were few restoration efforts
486 that did not include eucalypts in the approved Ecological Vegetation Class (EVC) list of
487 plantings. Yet, there are many regions in Victoria where eucalypts are not considered to
488 be part of the pre-colonial ecology. This was the case for Participant 7, who did not have
489 eucalypts in their planting. However, there were sections of property with an adjoining
490 public land reserve that was a different EVC, which did include eucalypts. Subsequent to
491 the EcoTender planting, Participant 7 observed eucalypts from public land that adjoined
492 his property starting to sprout in this patch, going on to become the most dominant
493 species in the planting. The rate of growth and substantial number of recruiting species
494 led to a belief on the part of this landholder that eucalypts did indeed “belong” in this
495 highly modified landscape. Indeed, six other participants noted the growth of native
496 species in their planting that they did not plant themselves.

497

498 This experience reinforces that restoration sites are not blank canvases that exist in a
499 spatial and temporal vacuum – the history of land use and the ecologies on surrounding
500 lands will play a substantial role in how restoration unfolds. With the potential for
501 historical ecological benchmarks to become an even more difficult restoration target
502 into the future, there is a need to consider what we aim to achieve through PLC
503 restoration work, and the ways in which conservation programs might need to be de-
504 coupled from private property as a scale of emphasis. While some participants took a
505 hands-off approach to managing unexpected plant growth in their restoration site,
506 noting that “it will work itself out” (Participant 5), others felt a level of anxiety that the
507 unexpected plant growth may mean they have breached their EcoTender contract.

508

509 The planting process also generates habitat interactions that participants do not
510 anticipate as being an issue at the outset. A notable example is the impacts that fauna
511 grazing and habitat creation have on the health and survivability of the species planted.
512 Often, the grazing species were native animals (such as wallabies or wombats), and
513 landholders developed a negative perception of these animals as they had undone all
514 their hard work to establish the planting. As participants 17 noted, “if it weren’t for the
515 bloody Wombats” grazing on her new plantings then she would not have had to spend
516 additional money from her own pocket to replace some of the species lost. When
517 surrounding ecologies are fragmented and resources are scarce, grazing fauna can
518 target new growth in restoration areas (depicted in Figure 3).

Figure 3. Participant 17 noted that resident Wombats in the forested segment of the adjacent property (top of image) had come onto her property to eat the planted seedlings (centre-centre left of image).

When native plants spread across property boundaries, they can call attention to the range, distribution and reproduction of that species in ways that reveal wider ecological function. As in the example above, the presence and movement of species were powerful catalysts for triggering awareness that the property scale was not always suited to conservation efforts. Five participants asked why the planting list was different to what plants they observed growing in the surrounding landscape, with others also discussing their uncertainty about the accuracy of the revegetation lists that had been provided for their area.

Moreover, while landholders were aware that ecological flows across the boundary might mean ongoing weed presence on their property, the contractual obligation through EcoTender to keep restoration free of weeds made them acutely aware that the fortunes of their property cannot be separated from what goes on in the wider landscape. As Participant 18 noted when looking across the district from a high point on

the property, “on a windy day you can see the seed heads blowing across the hill”. Species movement across boundaries can challenge the logic of property-centricity in the process of conducting conservation work, reinforcing the importance of working collaboratively across boundaries.

3.4. The desire for social networks and cooperation

The downside to a model that requires competition between bidding landholders to drive down costs is that participants can go the duration of their contract without encountering other participants. EcoTender has no direct mechanism for gathering people together before, during or after bids are awarded. A key criticism of auction-style programs, therefore, is that they can fail to build collaborative, cross-boundary conservation efforts (Cooke & Moon 2015).

Eight landholders spoke directly and unprompted about the fact that they would like to meet other participants and have an informal network where they could contact each other. The central reason for wanting social connection was to gain some reassurance that they were not the only ones who were encountering challenges, difficulties or unexpected management outcomes from their activities (plants not growing, weeds returning, for example). Participant 3 captured this feeling when describing the fact that it would be nice to have a sense of “shared experience” in EcoTender. In terms of shared experience, landholders spoke about being interested in knowing what other landholders had been doing as part of their contract, and that specific advice or support was not really necessary. For some landholders this point was related to the fact that the EcoTender contract creates a sense of obligation that they had not felt with the conservation work they had been doing previously.

The landholder participant forum was particularly incisive for reiterating the value of knowledge sharing as part of conservation work. Both the formal and informal discussions revealed the value of having a community of shared practice and experience for specific conservation programs – a principle that has underpinned past conservation programs (Tennent and Lockie 2012). Forum participants discussed different strategies for protecting plants from grazing animals, different materials and construction methods for nesting boxes and other funding sources that they might know about for continuing their conservation work. Many of the issues discussed by landholders had

emerged through trial and error as they had attempted restoration or weed management practices that had not gone to plan. Participants at the forum requested of the EcoTender coordinators that the database of their contact details be shared amongst the participants so they could contact one another should they have further questions or wish to visit one another.

While it could be argued that EcoTender need not concern itself with enabling social interaction and learning when learning can happen outside of the program, there are a host of issues that arise through program participation and the specifics of EcoTender operation that participants would like to be able to discuss with one another. The ability to work through issues or uncertainties surrounding PLC programs (Moon, Marshall, and Cocklin 2012) and tender programs in particular (Blackmore and Doole 2013) has been previously reported by landholders. Moreover, not all participants enjoy neighbours who are interested and informed about conservation practices, which can leave some landholders isolated.

Despite the general view that a network would be beneficial, five landholders struggled to think of any benefits that might come from interaction with other participants. One landholder wondered, “what’s there to talk about?” (Participant 16) concerning conservation work. Conservation programs cannot assume all participants will see value in knowledge sharing, as some are happy working individually on their own property. This appears especially true amongst exurban and rural-amenity landscapes, where new in-migrants can be more inwardly focused on managing their own property without wider interaction and engagement (Gill, Klepeis, and Chisholm 2010; Yung and Belsky 2007). For participants like this, the property-centric, individual landholder engagement model suited their approach to conservation.

4. Policy implications and discussion

The ways in which people engage with EcoTender are dependent on their experiences with the land management and ecological change over time. These experiences do not always align with the logics of conservation tenders. Indeed, many of the narratives explored above show the way people used EcoTender to leverage conservation efforts that did not align with the intent of a program centred on financial incentives, or the way ecologies are not easily entrained to the property-centric conservation efforts that

often accompany MBIs like EcoTender. Despite these limitations, there is a need to acknowledge the role of EcoTender in generating ecological benefits as part of a recognition that the neoliberalising of environmental governance can open up some conservation opportunities amongst those that it forecloses (Sandbrook et al. 2013; Fletcher et al. 2016). Moreover, where market instruments and neoliberal governance structures are entrenched, there is an imperative to explore how they can be orientated (or reorientated) to meet socio-ecological needs (Jackson and Palmer 2014; Holmes 2015). As such, this section discusses what can be done to open up MBIs like reverse auctions to a wider trajectory of contingent management practices and ecologies where they exist, whilst questioning the capacity of MBIs as a policy tool for responding to the emergent challenges presented by PLC.

4.1 Starting with the setting – socio-ecological context

The program adoption narratives of landholders have brought to light the need for the prioritisation of local socio-ecological dynamics in the design and implementation of market instruments (Selinske et al. 2016). The point that environmental policy must consider local social context has been established in the private land conservation literature (Cooke et al. 2012). What must now be explicitly acknowledged is the need to challenge PLC policy that uncritically adopts MBIs due to their compatibility with neoliberal governance logics (Peck and Theodore 2010) rather than their alignment to the needs and circumstances of people and ecologies on the ground (Sorice and Donlan 2015; Trigger, Toussaint, and Mulcock 2010; Muradian et al. 2013). The way many EcoTender participants struggled to conceptualise their stewardship labour as a service to be costed and delivered to a contractual deadline, presented a unique insight into the mismatch between policy logic and landholder practice; the real consequences of this mismatch being uncertainty and anxiety on the part of landholders about their capacity to fund and fulfil their conservation contracts. Thus, despite the hybrid governance characteristics of EcoTender that enable some co-option of program intentions to meet socio-ecological needs, a more flexible and responsive governance framework might limit the extent to which co-option was necessary.

Local context also drove the desire on the part of some participants for using EcoTender to gain a covenant, as a growing desire for perpetual preservation of their land management legacy amidst dynamic land use change (Farmer, Chancellor, and Fischer

2011). The somewhat perverse outcome of achieving increased regulation through a market mechanism further signals the need to question the assumptions that PLC programs make about the drivers of conservation practice. In this case specifically, it highlights that reverse auction tenders may not be the most cost effective means of delivery when financial motivations for participation are not strong (Muradian et al. 2013). To ignore this context is to render invisible the socio-ecological dynamics of conservation practice that are innately familiar to policy makers, researchers and landholders alike.

MBIs for PLC must explicitly acknowledge that ecologies act and react to human intervention through conservation practices in ways that are not uniform, easily anticipated or isolated from surrounding socio-ecological processes (Head et al. 2015; Ogden et al. 2013). When MBIs engage people through private property, there is a risk that the mobility of plants and fauna (both wanted and unwanted) at scales above the property parcel are not reflected. As this study demonstrated, wider ecosystem interactions can draw people into landscape-scale management challenges that EcoTender had no formal mechanism for addressing. In this way, ecologies themselves showed how they can push back against neoliberal environmental governance that positions private property as the foundation around which the policy is conceived (Schwartz 2013; Büscher et al. 2012). However, MBIs for PLC have been geared towards valuing cross-boundary collaborative efforts in the past (e.g. the Desert Uplands Landscape Linkages Program), suggesting that attention to landscape-scale ecological interactions may be feasible in some cases. Furthermore, payments schemes have been rolled-out in contexts where individual property rights do not exist (McElwee et al. 2014). Constraining PLC policy to individual contracts at the scale of individual properties risks closing down opportunities for collective and cohesive policy at a time when landscape-scale responses are deemed increasingly necessary for conservation (Fitzsimons et al. 2013).

4.2 Working with novel ecosystems and environmental change

The experiences of landholders in this study raises questions about the rigidity of MBI contracts if we are anticipating uncertainty in the way ecologies respond to the types of interventions pursued through land management. This is especially true when we consider the knock-on effects that are created by the initial management interventions

undertaken by landholders (such as triggering new weed infestations) that will have impacts well beyond discrete contracts. MBIs like reverse-auctions also require landholders to commit to a program of works at the outset, given the need to formulate a bid based on proposed works, restricting landholders' capacity to respond to unanticipated outcomes along the way. As finite interventions, programs like EcoTender that often run for short periods (5-10 years) need to accommodate the history of landscape modification and the contingent ways people and ecologies are responding to change. The tensions between short-term contracts and ongoing stewardship suggest payments must be part of a wider PLC response in which landholders have a stronger role in policy design, rather than being the lynchpin around which those programs operate (Muradian et al. 2013; Selinske et al. 2016). Given the redemptive aspirations of restoration in many MBIs, landholders could play an important role in negotiating the make up of species types that are used in restoration, allowing participants to draw on their experiential learning, landscape observations and local histories, whilst still ensuring that ecological function, diversity and abundance are enhanced by the restoration process (Collard, Dempsey, and Sundberg 2014).

Thinking through the implications of novel ecosystems for MBI design may suggest a role for collective bidding processes that enable landholders to work across property boundaries and at larger ecological scales (Cooke and Moon 2015). Encountering uncertainty and working through problems with others was a key part of the reason landholders wanted ongoing social networks that were not facilitated by EcoTender. This desire echoes the promoted benefits of Landcare in Australia, which centres on social learning benefits, given the emphasis on collective, community-based responses to land management challenges, rather than individual, property-centric responses (Tennent and Lockie 2012). Trade-offs like collaboration versus competition that are associated with MBIs must be better thought through, so the apparent cost efficiency benefits of a blind, competitive funding model are weighed against the value of social learning and collaboration (Sorice and Donlan 2015; Muradian et al. 2013). An enduring network of participants can offer a point of contact and support for conservation efforts once the connection with the environment department or direct extension officer is lost (Selinske et al. 2016).

5. Conclusion

Conservation pursued through programs like EcoTender will not entrain all practices to the logic of market instruments or private property ownership. As we have shown, private land conservation policy inevitably forms part of a broader entanglement of humans, ecologies, property, incentives, land use legacy and regulation that shape dynamic conservation practices (Gill, Klepeis, and Chisholm 2010; Mansfield et al. 2014). Being attentive to the way neoliberal conservation connects to landscape and land use histories, and environmental change factors, has been an oversight in private land conservation research (Holmes 2015). From a policy perspective, MBIs used for PLC must do more to create room for a diverse trajectory of conservation efforts in dynamic socio-ecological contexts (Roth and Dressler 2012). This means conscious and careful reflection on the validity of assumptions embedded in MBIs, an honest critique of the trade-offs that come with applying market logic to conservation efforts, and a discussion of the socio-ecological implications of these initiatives over the long term (Lockie 2013). To ignore this imperative is to risk being “lulled into complacency” (Muradian et al. 2013, p277) regarding the effectiveness of market instruments, as conservation becomes further entrained by capital and private ownership (Fletcher et al. 2016).

The ongoing experimentation with the use of reverse-auctions and tenders for allocating conservation funding (Jindal et al. 2013) underlines the value of assessing their structural and practical implications. EcoTender payments enabled positive conservation outcomes for many landholders. Yet, the need for MBIs to pursue context-specific policy design and implementation was clearly evidenced by landholders’ expressions of stewardship values and a collaborative ethics that clashed with a market framing of their conservation work. Moreover, the flourishing of novel ecologies in ways that challenged the logic of MBIs showed how policy must countenance abundance and diversity goals that include local knowledge, especially in the context of highly modified landscapes subject to substantial environmental change. Private land conservation challenges will require more collective, contingent and adaptive policy that better reflects the “diverse relations” (Fletcher and Büscher 2017, p230) between and amongst people and ecologies – a task that may be incompatible with reverse-auction MBIs in the long term.

References

- Blackmore, Louise, and Graeme J. Doole. 2013. "Drivers of Landholder Participation in Tender Programs for Australian Biodiversity Conservation." *Environmental Science & Policy* 33 (November). Elsevier Ltd: 143–53. doi:10.1016/j.envsci.2013.05.010.
- Büscher, Bram, Sian Sullivan, Katja Neves, Jim Igoe, and Dan Brockington. 2012. "Towards a Synthesized Critique of Neoliberal Conservation." *Capitalism Nature Socialism* 23 (May): 4–30. doi:10.1080/10455752.2012.674149.
- Clements, Hayley S., Graeme S. Cumming, and Graham I H Kerley. 2016. "Predators on Private Land: Broad-Scale Socioeconomic Interactions Influence Large Predator Management." *Ecology and Society* 21 (2). doi:10.5751/ES-08607-210245.
- Collard, Rosemary-Claire, Jessica Dempsey, and Juanita Sundberg. 2014. "A Manifesto for Abundant Futures." *Annals of the Association of American Geographers* 105 (2): 322–30. doi:10.1080/00045608.2014.973007.
- Cooke, Benjamin, and Ruth Lane. 2015. "How Do Amenity Migrants Learn to Be Environmental Stewards of Rural Landscapes?" *Landscape and Urban Planning* 134 (February). Elsevier B.V.: 43–52. doi:10.1016/j.landurbplan.2014.10.006.
- Cooke, Benjamin, William T. Langford, Ascelin Gordon, and Sarah Bekessy. 2012. "Social Context and the Role of Collaborative Policy Making for Private Land Conservation." *Journal of Environmental Planning and Management*. doi:10.1080/09640568.2011.608549.
- Cooke, Benjamin, and Katie Moon. 2015. "Aligning 'public Good' Environmental Stewardship with the Landscape-Scale: Adapting MBIs for Private Land Conservation Policy." *Ecological Economics* 114: 152–58. doi:10.1016/j.ecolecon.2015.03.027.
- DELWP. (2017). Department of Environment, Land, Water and Planning. Accessed 17 August 2017. <https://www.environment.vic.gov.au/innovative-market-approaches/ecotender>
- Engel, Stefanie, Stefano Pagiola, and Sven Wunder. 2008. "Designing Payments for Environmental Services in Theory and Practice: An Overview of the Issues." *Ecological Economics* 65 (4): 663–74. doi:10.1016/j.ecolecon.2008.03.011.
- Farmer, James R., Charles Chancellor, and Burnell C. Fischer. 2011. "Motivations for Using Conservation Easements as a Land Protection Mechanism: A Mixed Methods Analysis." *Natural Areas Journal* 31 (1): 80–87. doi/abs/10.3375/043.031.0109.
- Fischer, Paige, and John Bliss. 2009. "Framing Conservation on Private Lands:

777 Conserving Oak in Oregon's Willamette Valley." *Society & Natural Resources* 22
778 (10): 884–900. doi:10.1080/08941920802314926.

779 Fitzsimons, James, Ian Pulsford and Geoff Wescott. 2013. Linking Australia's
780 landscapes: an introduction. In: Fitzsimons, James, Ian Pulsford and Geoff Wescott.
781 (Eds.), *Linking Australia's Landscapes: Lessons and Opportunities from Large-Scale*
782 *Conservation Networks*. CSIRO Publishing, Melbourne: 3–6.

783 Fletcher, Robert. 2010. "Neoliberal Environmentality: Towards a Poststructuralist
784 Political Ecology of the Conservation Debate." *Conservation and Society* 8 (3): 171.
785 doi:10.4103/0972-4923.73806.

786 Fletcher, Robert, and Jan Breitling. 2012. "Market Mechanism or Subsidy in Disguise?
787 Governing Payment for Environmental Services in Costa Rica." *Geoforum* 43 (3):
788 402–11. doi:10.1016/j.geoforum.2011.11.008.

789 Fletcher, Robert, and Bram Büscher. 2017. "The PES Conceit: Revisiting the Relationship
790 between Payments for Environmental Services and Neoliberal Conservation."
791 *Ecological Economics* 132. Elsevier B.V.: 224–31.
792 doi:10.1016/j.ecolecon.2016.11.002.

793 Fletcher, Robert, Wolfram Dressler, Bram Büscher, and Zachary Anderson. 2016.
794 "Questioning REDD+ and the Future of Market-Based Conservation." *Conservation*
795 *Biology*. doi:10.1017/CBO9781107415324.004.

796 Gill, Nicholas, Peter Klepeis, and Laurie Chisholm. 2010. "Stewardship among Lifestyle
797 Oriented Rural Landowners." *Journal of Environmental Planning and Management*
798 53 (3): 317–34. doi:10.1080/09640561003612890.

799 Hajkowicz, S. 2009. "The Evolution of Australia's Natural Resource Management
800 Programs: Towards Improved Targeting and Evaluation of Investments." *Land Use*
801 *Policy* 26 (2): 471–78. doi:10.1016/j.landusepol.2008.06.004.

802 Head, Lesley, Brendon Larson, Richard J Hobbs, Jennifer Atchison, Nick Gill, Christian
803 Kull, and Haripriya Rangan. 2015. "Living with Invasive Plants in the
804 Anthropocene: The Importance of Understanding Practice and Experience."
805 *Conservation and Society*. doi:10.4103/0972-4923.170411.

806 Higgins, Vaughan, Jacqui Dibden, and Chris Cocklin. 2012. "Market Instruments and the
807 Neoliberalisation of Land Management in Rural Australia." *Geoforum* 43 (3).
808 Elsevier Ltd: 377–86. doi:10.1016/j.geoforum.2010.10.002.

809 Higgins, Vaughan, Jacqui Dibden, Clive Potter, Katie Moon, and Chris Cocklin. 2014.
810 "Payments for Ecosystem Services, Neoliberalisation, and the Hybrid Governance of

811 Land Management in Australia." *Journal of Rural Studies* 36: 463–74.
 812 doi:10.1016/j.jrurstud.2014.10.003.

813 Holmes, George. 2015. "Markets, Nature, Neoliberalism, and Conservation through
 814 Private Protected Areas in Southern Chile." *Environment and Planning A* 47 (4):
 815 850–66. doi:10.1068/a140194p.

816 Igoe, Jim, and Dan Brockington. 2007. "Neoliberal Conservation: A Brief Introduction."
 817 *Conservation and Society* 5 (4): 432–49.

818 Jackson, S., and L. R. Palmer. 2014. "Reconceptualizing Ecosystem Services: Possibilities
 819 for Cultivating and Valuing the Ethics and Practices of Care." *Progress in Human*
 820 *Geography* 39 (2): 122–45. doi:10.1177/0309132514540016.

821 Jindal, Rohit, John M. Kerr, Paul J. Ferraro, and Brent M. Swallow. 2013. "Social
 822 Dimensions of Procurement Auctions for Environmental Service Contracts:
 823 Evaluating Tradeoffs between Cost-Effectiveness and Participation by the Poor in
 824 Rural Tanzania." *Land Use Policy* 31 (March). Elsevier Ltd: 71–80.
 825 doi:10.1016/j.landusepol.2011.11.008.

826 Lemos, Maria Carmen, and Arun Agrawal. 2006. "Environmental Governance." *Annual*
 827 *Review of Environment and Resources* 31 (1): 297–325.
 828 doi:10.1146/annurev.energy.31.042605.135621.

829 Lockie, S, and V Higgins. 2007. "Roll-out Neoliberalism and Hybrid Practices of
 830 Regulation in Australian Agri-Environmental Governance." *Journal of Rural Studies*
 831 23 (1): 1–11. doi:10.1016/j.jrurstud.2006.09.011.

832 Lockie, Stewart. 2013. "Market Instruments, Ecosystem Services, and Property Rights:
 833 Assumptions and Conditions for Sustained Social and Ecological Benefits." *Land Use*
 834 *Policy* 31 (March). Elsevier Ltd: 90–98. doi:10.1016/j.landusepol.2011.08.010.

835 Logan, Shannon, and Gerda R Wekerle. 2008. "Neoliberalizing Environmental
 836 Governance? Land Trusts, Private Conservation and Nature on the Oak Ridges
 837 Moraine." *Environmental Studies* 39: 2097–2108.
 838 doi:10.1016/j.geoforum.2008.08.009.

839 Lokocz, Elizabeth, Robert L. Ryan, and Anna Jarita Sadler. 2011. "Motivations for Land
 840 Protection and Stewardship: Exploring Place Attachment and Rural Landscape
 841 Character in Massachusetts." *Landscape and Urban Planning* 99 (2). Elsevier B.V.:
 842 65–76. doi:10.1016/j.landurbplan.2010.08.015.

843 Mansfield, Becky. 2009. Property and the remaking of nature-society relations. In:
 844 Mansfield, B (Ed.). *Privatization: property and the remaking of nature-society Relations*.

845 Malden: Blackwell: 1-13.

846 Mansfield, Becky, Christine Biermann, Kendra McSweeney, Justine Law, Caleb
847 Gallemore, Leslie Horner, and Darla K Munroe. 2014. "Environmental Politics After
848 Nature: Conflicting Socioecological Futures." *Annals of the Association of American*
849 *Geographers* 105 (2): 284–93. doi:10.1080/00045608.2014.973802.

850 McElwee, Pamela D. 2012. "Payments for Environmental Services as Neoliberal Market-
851 Based Forest Conservation in Vietnam: Panacea or Problem?" *Geoforum* 43 (3).
852 Elsevier Ltd: 412–26. doi:10.1016/j.geoforum.2011.04.010.

853 McElwee, Pamela, Tuyen Nghiem, Hue Le, Huong Vu, and Nghi Tran. 2014. "Payments
854 for Environmental Services and Contested Neoliberalisation in Developing
855 Countries: A Case Study from Vietnam." *Journal of Rural Studies* 36. Elsevier Ltd:
856 423–40. doi:10.1016/j.jrurstud.2014.08.003.

857 Moon, Katie, Nadine Marshall, and Chris Cocklin. 2012. "Personal Circumstances and
858 Social Characteristics as Determinants of Landholder Participation in Biodiversity
859 Conservation Programs." *Journal of Environmental Management* 113 (December):
860 292–300. doi:10.1016/j.jenvman.2012.09.003.

861 Morris, Amy Wilson. 2008. "Easing Conservation? Conservation Easements, Public
862 Accountability and Neoliberalism." *Geoforum* 39 (3): 1215–27.
863 doi:10.1016/j.geoforum.2006.10.004.

864 Muradian, R., M. Arsel, L. Pellegrini, F. Adaman, B. Aguilar, B. Agarwal, E. Corbera. 2013.
865 "Payments for Ecosystem Services and the Fatal Attraction of Win-Win Solutions."
866 *Conservation Letters* 6 (4): 274–79. doi:10.1111/j.1755-263X.2012.00309.x.

867 Muradian, R, and L Rival. 2012. "Between Markets and hierarchies:The Challenge of
868 Governing Ecosystem Services." *Ecosystem Services* 1: 93–100.

869 Ogden, Laura, Nik Heynen, Ulrich Oslender, Paige West, Karim-Aly Kassam, and Paul
870 Robbins. 2013. "Global Assemblages, Resilience, and Earth Stewardship in the
871 Anthropocene." *Frontiers in Ecology and the Environment* 11 (7): 341–47.
872 doi:10.1890/120327.

873 Owley, Jessica, and Adena R. Rissman. 2016. "Trends in Private Land Conservation:
874 Increasing Complexity, Shifting Conservation Purposes and Allowable Private Land
875 Uses." *Land Use Policy* 51. Elsevier Ltd: 76–84.
876 doi:10.1016/j.landusepol.2015.10.026.

877 Pattanayak, Subhrendu K., Sven Wunder, and Paul J. Ferraro. 2010. "Show Me the
878 Money: Do Payments Supply Environmental Services in Developing Countries?"

879 *Review of Environmental Economics and Policy* 4 (2): 254–74.
880 doi:10.1093/reep/req006.

881 Peck, Jamie, and Nik Theodore. 2010. “Mobilizing Policy: Models, Methods, and
882 Mutations.” *Geoforum* 41 (2). Elsevier Ltd: 169–74.
883 doi:10.1016/j.geoforum.2010.01.002.

884 Pellizzoni, Luigi. 2011. “Governing through Disorder: Neoliberal Environmental
885 Governance and Social Theory.” *Global Environmental Change* 21 (3). Elsevier Ltd:
886 795–803. doi:10.1016/j.gloenvcha.2011.03.014.

887 Pirard, Romain. 2012. “Market-Based Instruments for Biodiversity and Ecosystem
888 Services: A Lexicon.” *Environmental Science and Policy* 19–20. Elsevier Ltd: 59–68.
889 doi:10.1016/j.envsci.2012.02.001.

890 Rissman, Adena R, Jessica Owley, Andrew W L Roe, Amy Wilson Morris, and Chloe B
891 Wardropper. 2017. “Public Access to Spatial Data on Private-Land Conservation.”
892 *Ecology and Society* 22 (2): 24.

893 Roth, Robin J., and Wolfram Dressler. 2012. “Market-Oriented Conservation
894 Governance: The Particularities of Place.” *Geoforum* 43 (3). Elsevier Ltd: 363–66.
895 doi:10.1016/j.geoforum.2012.01.006.

896 Sandbrook, Chris, William M Adams, Bram Büscher, and Bhaskar Vira. 2013. “Social
897 Research and Biodiversity Conservation.” *Conservation Biology* 27 (6): 1487–1490.
898 doi:10.1111/cobi.12141.

899 Sattler, Claudia, and Bettina Matzdorf. 2013. “PES in a Nutshell: From Definitions and
900 Origins to PES in Practice-Approaches, Design Process and Innovative Aspects.”
901 *Ecosystem Services* 6. Elsevier: 2–11. doi:10.1016/j.ecoser.2013.09.009.

902 Schwartz, Katrina Z S. 2013. “Panther Politics: Neoliberalizing Nature in Southwest
903 Florida.” *Environment and Planning A* 45 (10): 2323–43. doi:10.1068/a45294.

904 Selinske, Matthew J., Jan Coetzee, Kerry Purnell, and Andrew T. Knight. 2015.
905 “Understanding the Motivations, Satisfaction, and Retention of Landowners in
906 Private Land Conservation Programs.” *Conservation Letters* 8 (4): 282–289.
907 doi:10.1111/conl.12154.

908 Selinske, Matthew J, Benjamin Cooke, Nooshin Torabi, Mathew J Hardy, Andrew T
909 Knight, and Sarah A Bekessy. 2016. “Locating Financial Incentives among Diverse
910 Motivations for Long-Term Private Land Conservation.” *Ecology and Society* 22 (2):
911 7.

912 Sorice, Michael G, and C Josh Donlan. 2015. “A Human-Centered Framework for

913 Innovation in Conservation Incentive Programs." *Ambio* 44 (8). Springer
 914 Netherlands: 788–92. doi:10.1007/s13280-015-0650-z.

915 Stoneham, Gary, Vivek Chaudhri, Arthur Ha, and Loris Strappazzon. 2003. "Auctions for
 916 Conservation Contracts: An Empirical Examination of Victoria's BushTender Trial."
 917 *The Australian Journal of Agricultural and Resource Economics* 47 (4): 477–500.
 918 doi:10.1111/j.1467-8489.2003.t01-1-00224.x.

919 Strang, Veronica. 2010. Mapping histories: cultural landscapes and walkabout methods,
 920 in *Environmental Social Science: Methods and Research Design*, edited by Smith, A &
 921 Aswani, S. Cambridge University Press: 132–156.

922 Stuart, D., E. Benveniste, and L. M. Harris. 2014. "Evaluating the Use of an Environmental
 923 Assurance Program to Address Pollution from United States Cropland." *Land Use*
 924 *Policy* 39. Elsevier Ltd: 34–43. doi:10.1016/j.landusepol.2014.03.009.

925 Tennent, Rebeka, and Stewart Lockie. 2012. "Vale Landcare: The Rise and Decline of
 926 Community-Based Natural Resource Management in Rural Australia." *Journal of*
 927 *Environmental Planning and Management*, no. April 2013 (September): 1–16.
 928 doi:10.1080/09640568.2012.689617.

929 Tickell, Adam, and Jamie Peck. 2002. "Neoliberalizing Space." *Antipode* 34 (3): 380–404.
 930 doi:DOI: 10.1111/1467-8330.00247.

931 Trigger, D, Y Toussaint, and J Mulcock. 2010. "Ecological Restoration in Australia:
 932 Environmental Discourses, Landscape Ideals, and the Significance of Human
 933 Agency." *Society & Natural Resources* 23 (11): 1060–74.
 934 doi:10.1080/08941920903232902.

935 Van Hecken, Gert, and Johan Bastiaensen. 2010. "Payments for Ecosystem Services in
 936 Nicaragua : Do Market-Based Approaches Work ?" *Development and Change* 41 (3):
 937 421–44.

938 Van Hecken, Gert, Johan Bastiaensen, and Catherine Windey. 2015. "Towards a Power-
 939 Sensitive and Socially-Informed Analysis of Payments for Ecosystem Services
 940 (PES): Addressing the Gaps in the Current Debate." *Ecological Economics* 120: 117–
 941 25. doi:10.1016/j.ecolecon.2015.10.012.

942 Vatn, Arild. 2015. "Markets in Environmental Governance. From Theory to Practice."
 943 *Ecological Economics* 117 (1). Elsevier B.V.: 225–33.
 944 doi:10.1016/j.ecolecon.2014.07.017.

945 Whitten, Stuart M., Andrew Reeson, Jill Windle, and John Rolfe. 2013. "Designing
 946 Conservation Tenders to Support Landholder Participation: A Framework and Case

- 947 Study Assessment." *Ecosystem Services*, December. Elsevier, 1–11.
948 doi:10.1016/j.ecoser.2012.11.001.
- 949 Wunder, S, S Engel, and S Pagiola. 2008. "Taking Stock: A Comparative Analysis of
950 Payments for Environmental Services Programs in Developed and Developing
951 Countries." *Ecological Economics* 65 (4): 834–52.
952 doi:10.1016/j.ecolecon.2008.03.010.
- 953 Wunder, Sven. 2015. "Revisiting the Concept of Payments for Environmental Services."
954 *Ecological Economics* 117. Elsevier B.V.: 234–43.
955 doi:10.1016/j.ecolecon.2014.08.016.
- 956 Wynne-Jones, Sophie. 2012. "Negotiating Neoliberalism: Conservationists' Role in the
957 Development of Payments for Ecosystem Services." *Geoforum* 43 (6). Elsevier Ltd:
958 1035–44. doi:10.1016/j.geoforum.2012.07.008.
- 959 Yung, Laurie, and Jill M. Belsky. 2007. "Private Property Rights and Community Goods:
960 Negotiating Landowner Cooperation Amid Changing Ownership on the Rocky
961 Mountain Front." *Society & Natural Resources* 20 (8): 689–703.
962 doi:10.1080/08941920701216586.
- 963 Zammit, Charlie. 2013. "Landowners and Conservation Markets: Social Benefits from
964 Two Australian Government Programs." *Land Use Policy* 31 (March). Elsevier Ltd:
965 11–16. doi:10.1016/j.landusepol.2012.01.011.
- 966