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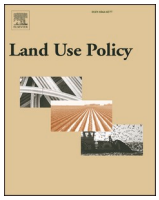

"Why don't landowners just do what they are told?": Potential mismatches of values and objectives between family forest landowners and professionals

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ABSTRACT

An often-heard complaint in the forestry and forest conservation fields is that private forest landowners – especially individuals and families – do not implement the recommended practices of forestry and conservation specialists or experts. Furthermore, it is commonly assumed that this disregard stems from a lack of information and knowledge regarding the "correct" and approved practices. Consequently, attempts to address the situation have historically been predicated on a knowledge transfer model. In this viewpoint commentary, we offer the perspective – informed by self-determination theory – that family forest ownerships (FFOs) may not follow the advice of experts – not because of lack of knowledge or awareness – but because their values, objectives, and needs may not always align with the assumed objectives underlying experts' recommendations. In other words, they may disregard the experts because in many cases this disregard is *reasonable*. We offer future researchers two specific propositions as to where this may be the case: Proposition 1, that landowners' preferences and priorities may be different from what are assumed by experts; and Proposition 2, that forests provide disservices as well as services to landowners and these are not always fully appreciated by experts.

1. Introduction

A common theme in the forestry and forest conservation literatures is that individual and family forest owners (family forest ownerships or FFOs) often do not practice good forest management or silviculture (e.g., Jones et al., 1995; Davis and Fly, 2010; Straka, 2011), participate in landowner assistance programs (Kilgore et al., 2008; Rouleau et al., 2016; Mitani and Lindhjem, 2022), harvest their timber (e.g., Huff et al., 2017), obtain or follow a management plan (Jones et al., 1995; Van-Brakle, 2015, or do what foresters, conservationists, or other scientists and experts think would support ecologically sound stewardship of forest resources (e.g., Andersson et al., 2018; Boag et al., 2018; Ambrose-Oji et al., 2020; Hitchner et al., 2023). The lack of consultation with or adherence to professional, scientific expertise is borne out by the National Woodland Owner Survey (NWOS), a product of the USDA Forest Service, Forest Inventory and Analysis Program (FIA). According to the 2018 NWOS (Butler et al., 2021), only 11 % of FFOs with 10 or more acres have written management plans and even fewer participate in cost-share programs (4 %), have conservation easements (3 %), or have had their land green certified (2 %). Only 4 % of FFOs include a professional forester as their primary decision-maker and only 22 % of FFOs have used the services of a forester in managing a timber sale. Perhaps most telling, only 18 % of FFOs have received advice about their woodland from *anybody* in the previous five years – and this number is declining (Sass et al., 2023)! These statistics show that landowners are not engaging in programs or activities that would result in them interfacing with professional foresters or having direct exposure to their recommendations.

What is the reason for this limited interest in professional forestry advice and even more limited participation in forestry programs? Traditional forest economics presupposes that a) landowners are rational actors interested in maximizing their own economic utility (i.e., benefits), and b) policy incentives and standard forestry practices – such as long-term silviculture, harvest planning, use of a forester, etc. – should increase revenues and values and, therefore, utility. From this perspective, one of the most common explanations for uninterested landowners is lack of knowledge; landowners are unaware that forestry incentives exist or that the forestry profession has service offerings that

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would increase the value of their forest land. In fact, less than 20 % of landowners are at least moderately familiar with forest land tax incentives and less than 12 % with green certification or cost-share programs (Butler et al., 2021). Influenced heavily by this perspective, forestry extension has traditionally been built on a knowledge transfer model (e.g., Brubaker et al., 2006). A related idea is that landowners, in addition to lacking knowledge of what to do with their land, are also lacking the capital resources to engage in recommended practices; to that end, cost-share and other monetary incentives are commonly proposed or offered in addition to (and often in conjunction with) extension services. A second, alternative explanation is that landowners are *not* necessarily rational (in the way that forest economists posit); an explanation which we will not entertain further in this paper, but that many other scholarly works have explored to various degrees (e.g., Kahneman and Tversky, 1979; Villamor et al., 2022).

A third possible explanation is that landowners are indeed rational, but have different objectives, values, and conceptions of management and stewardship from forestry and conservation experts and are choosing not to avail themselves of the professional advice and programs being offered (Bliss and Martin, 1989; Andrejczyk et al., 2016; Davis and Fly, 2010). This is the premise of this paper. Landowners are subject to a wide range of conditions and factors when considering forest and/or land management options. These factors include social, cultural, institutional, and psychological factors beyond just economic or ecological ones (Schelhas et al., 2024). This is not a new idea. Most famously, perhaps, it was formulated among traditional forest economists by Hartman (1976); the resulting Faustmann-Hartmann formula is still an active research framework (e.g., Tahvonen et al., 2019). In addition, non-economic social scientists have further emphasized the importance of non-production motivations such as promoting health outcomes or conforming to social norms (e.g., Clarke et al., 2021; Holmgren and Arora-Jonsson, 2015; Ma et al., 2012). These factors interact to influence considerations in complex ways; landowners make decisions within a context defined by the aggregate of their needs and wants, which are shaped by their personal values, personal and social identities, social / cultural norms, and epistemologies (i.e. ways of knowing) as well as intrahousehold dynamics (e.g. Caputo et al., 2019).

Self-Determination Theory (SDT) is a psychological theory positing that human beings have three basic, universal psychological needs – for autonomy, competence, and relatedness (Ryan and Deci, 2000, 2017). External events, actors, or motivators that satisfy and support these needs have been empirically shown to lead to increased *intrinsic* motivation and more effective, longer-lasting *extrinsic* motivation. Where these needs are not met, motivation is more likely to be weak or absent. Complete *amotivation* can result where a person fundamentally does not value an activity or does not feel that they are competent to succeed at it (Ryan and Deci, 2000). This framework suggests a plausible explanation for FFOs' lack of engagement. Having different objectives from experts, they do not adequately value and are therefore not strongly motivated by the experts' advice and service offerings. In addition, services and programs may not emphasize the autonomy, competence, or relatedness of the landowners. Accordingly, where landowners do follow experts' advice or join forestry programs, it is likely to be out of a sense of compliance, social norms, or because of rewards or penalties (i.e., external or introjected regulation) and not because the experts' goals or values have become internalized by the landowners (i.e., integrated regulation). These represent less efficacious and more transient forms of motivation.

This paper is constructed as a pair of propositions backed up by case studies from the literature. Our intention is to make the case that FFOs may have rational, justifiable reasons to *not* do what forestry and conservation experts advise them to do with their land. We draw from multiple literatures to bear insights on FFOs. This is partly a reflection of gaps in the FFO literature. It is also a reflection of the fact that any distinction between forest landowners and other types of landowners is somewhat arbitrary (Huff et al., 2019). It is not straightforward even for experts to draw a distinction between forest and non-forest land (Nelson et al., 2020; Butler et al., 2021), and the distinction may have even less meaning for landowners themselves (Andrejczyk et al., 2016). Owners of urban, suburban, or mixed-use land likely share many of the same perspectives, values, or concerns regarding the trees on their land as do forest landowners. In making the case that our propositions are plausible and worth exploring, we consider this a valid line of argumentation. In this paper, we emphasize arguments why landowners may disagree with professional forestry and conservation experts. We offer these propositions as an important area for future consideration and research.

2. Proposition 1

Private landowners have different preferences and different priorities other than those assumed by experts and standard management approaches.

SDT suggests that people who do not identify with the values and intentions underlying a suggested activity will lack intrinsic or effective extrinsic motivation to undertake that activity. They *may* be motivated by some of the less effective forms of extrinsic motivation (i.e., guilt, society pressure, or material rewards) or they may express a more complete amotivation. Here we provide two cases where landowners have different preferences and priorities than those assumed by experts (as well as those held by the experts themselves) and we suggest that this dissonance may be responsible for landowners' lack of motivation to follow forestry and conservation experts' advice.

2.1. Invasive species are not always problematic for FFOs

It has been well-documented that invasive and non-native species can cause a host of real and perceived negative impacts to human well-being. These impacts include loss of native species and biodiversity, adverse impacts to ecosystem functions that support healthy water and soil, impacts to scenic beauty, loss of economic value and cultural services, impacts to human health, and increased wildfire risk (Millennium Ecosystem Assessment..,2005; Pyšek and Richardson, 2010; Schlaepfer et al., 2011; Shackleton et al., 2016; Vaz et al., 2017; Fusco et al., 2019). These negatives do not always or necessarily warrant management, however. For example, Atallah et al. (2023) found that the ecosystem services benefits of invasive plant management do not outweigh the costs without substantial government subsidy. In other words, in the absence of payments, it would be irrational for self-interested landowners to manage invasives.

Additionally, invasive and non-native species can also provide important benefits, real and perceived, to ecosystems and human well-being (e.g., Pejchar and Mooney, 2009; Rejmánek et al., 2014, Tassin and Kull, 2015; Vaz et al., 2017; Schelhas et al., 2021). Examples include provisioning benefits such as food for human consumption (Hurley et al., 2015; Dickie et al., 2021); firewood and building materials (Shackleton et al., 2007); pulp and industrial goods (Kull et al., 2011); medicines (Rana and Akhter, 2010); supporting benefits such as soil stabilization, nitrogen fixation (Rana and Akhter, 2010) and carbon sequestration (Qiu, 2015); increased local biodiversity (Chalker-Scott, 2015); and cultural services such as a contribution to sense of place or cultural identity (Dickie et al. 2021). In spite of the many papers suggesting that invasives can support human well-being or produce beneficial ecosystem services (e.g., Nuñez et al., 2012; Niemiec et al., 2017; Potgieter et al., 2019), there is a dearth of literature on landowner perceptions, attitudes and behaviors around benefits associated with invasive species. In contrast, there is a growing body of literature on FFO perceptions and attitudes (e.g., Steele et al., 2006; Fischer and Charnley, 2012; Clarke et al., 2019), as well as control and management behaviors (e.g., Howle et al., 2010; Fischer and Charnley, 2012; Snyder et al., 2020; Holt et al., 2021), around the *disservices* of invasive plants.

We suggest a significant information and understanding gap exists around whether and how FFO behaviors may be motivated by the

various benefits, perceived or real, derived from invasive species, rather than the negative impacts of invasive species on particular aspects of the ecosystems. We are only aware of one paper that has empirically examined whether or how FFO perceptions of ecosystem services influence behaviors around invasive plants. In a study of FFOs in Indiana, Ma et al. (2018) documented that perceived ecosystem services of invasive plants (e.g., the ability of Amur honeysuckle (*Lonicera maackii*) to provide a privacy screen) can serve as a deterrent to cooperative invasive plant management among FFOs. Clarke et al. (2021) further underscored the need for additional research that explores FFO perceptions and behaviors around potential benefits associated with invasive plants.

Beyond FFOs in the U.S., benefits of non-native and/or invasive species have been explored across a diversity of other habitat and landowner types, including coastal ecosystems (Ramus et al., 2017), wetlands (García-Llorente et al., 2008), urban environments (Potgieter et al., 2019), and aquatic ecosystems (Drake et al., 2015). Findings from such studies may suggest that FFO perceptions and attitudes about the benefits associated with invasive species would reduce their invasive species control behaviors or support for public efforts and outreach to control invasives. Examples like these have implications for FFO perceptions, attitudes, and behaviors around invasive species, but research is needed to identify the issues specific to FFOs in the context of invasive species management.

We argue that researcher bias towards focusing on the negatives associated with invasive species has hampered our ability to fully understand the range of potential services and disservices that FFOs associate with invasive species, and in turn, what factors may be motivating FFO behaviors around invasive species introduction, control, and eradication. Related to this, Kapitza et al. (2019) found that research methods have influenced whether benefits associated with invasive species are identified. Specifically, in a meta-analysis, Kapitza et al. (2019) found that research studies that used quantitative methods were much less likely to have identified benefits associated with invasive species.

Schelhas et al. (2021) argue that public perceptions around invasive species are often at odds with those of scientists and managers, which complicates policy, outreach, and regulatory approaches to manage them or to entice homeowners and landowners to undertake actions to address them. Research is needed to further our understanding of how ecosystem services derived from invasive species can influence and inform management and stewardship actions by FFOs, as well as how this understanding may influence outreach and assistance efforts by forestry professionals.

2.2. *High-grading can be advantageous to FFOs*

High-grading or diameter-limit cutting describes any harvesting that removes only the most valuable trees, often based on species and volume, and is universally seen by foresters as destructive, shortsighted, exploitative, unethical, and counter to sustainable, long-term management (Nyland, 1992; Ford, 2005) This opinion is so firmly entrenched among forestry researchers that the question of why this practice occurs at all is seen as "fundamental" (Kenefic Nyland, 2006). Jones et al. 1995 posited that high-grading occurs because most FFOs do not have a forest management plan or employ a forester when conducting a harvest; therefore, their forest management decisions are made in an “information vacuum.” However, some reasonable alternative explanations may be offered, simply by considering what FFOs want from their land. Individual FFOs in much of the U.S. own their own land over relatively short time frames (median = 18 years, Butler et al., 2021) and are unlikely to personally see more than one or maybe two rotations. Over these short time frames, landowners are unlikely to witness long-term declines in stand productivity, growing stock quality, or financial returns. For instance, Nyland 2005 demonstrated that diameter-limit harvesting had lower net present value as compared to a suite of standard silvicultural practices, but this disadvantage played out over a window of 90–100 years. Other researchers found that, compared to these alternative silvicultural practices, diameter-limit cutting produced a greater amount of total sawtimber (Bohn et al., 2011) or was more productive in value (Niese et al., 1995, Kenefic et al., 2005; Granstrom et al., 2022) over shorter time frames. These considerations might be sufficient reason for a landowner to high-grade especially if the landowner was self-interested financially and had no other non-financial considerations, but such landowners are not in the majority (e.g., Kuuluvainen et al., 1996). FFOs in the U.S. place significant importance on resource protection and land stewardship; a substantial majority also hope to leave their land to children or other family members as a family legacy (Butler et al., 2021). These attributes would be expected to contribute to more long-term and altruistic perspectives, suggesting that there must be additional reasons why high-grading is so pervasive (Fajvan et al., 1998; Munsell et al., 2009).

One such reason may be that high-grading – by removing only the "best" and most valuable trees – results in a high ratio of returns to removals over a single cutting. This may allow for landowners to meet their short-term financial needs while maintaining a continuous tree cover that provides the privacy, recreational, and aesthetic benefits that FFOs primarily value (Butler et al., 2021). Research has shown that diameter-limit harvests may be no worse for bird diversity (Weakland et al., 2002). One of the biggest advantages, however, may be in terms of aesthetics. High-graded forests tend to be of moderate density, contain some large trees (although not the biggest or the “best”), and be visibly complex, all of which are factors associated with common landowner aesthetic preferences (Kaplan, 1985; Ribe, 2005; Gobster et al., 2022). Furthermore, high-grading tends to have minimal impact on canopy cover, which can look relatively consistent before and after high-grading. While even-aged silvicultural practices such as clearcutting and shelterwood harvests, can be done sustainably in ways that conserve soil and water resources, wildlife habitat, and other ecosystem services, they unavoidably result in a sharp transition between a closed canopy state and an early successional state, one that may persist for years. This may be emotionally and cognitively jarring for an FFO and may reduce the aesthetic and recreational value of their forest in their eyes. One obvious alternative to high-grading is uneven-aged management. At face value, these silvicultural systems provide the benefits of financial returns and continuous closed canopy without the degradation of growing stock and loss of productive potential inherent in diameter-limit cutting. That advantage comes at a cost, however; uneven-aged silviculture is logistically challenging and when executed poorly can be indistinguishable from high-grading (the similarity of the terms "selection system", a common form of uneven-aged management, and "selective system", a synonym for diameter-limit cutting, does not help). Uneven-aged silviculture also comes at a financial cost. Kenefic et al. (2005) found that over a 40-year period, diameter-limit cutting produced a higher net present value than uneven-aged silviculture. Ultimately, diameter-limit cutting may simply represent a "sweet spot" in terms of the cost-and-benefit ratio for the landowner – it has the potential to provide large short-term financial returns, using simple techniques that do not necessarily require the services of a forester. In fact, reduced time, complexity, and other transaction costs associated with having to find a forester may be an added benefit for many landowners. The trade-off is a loss of growth potential and lower net-present costs, but only over a time frame that is longer than the period over which most FFOs own their land. Despite the degradation of the growing stock, high-graded forests still provide conservation value (Weakland et al., 2002). In fact, diameter-limit cutting has been historically thought to have less inherent potential for significant damages to soil and water resources as compared to poorly executed clearcuts (Kelty and D’Amato, 2006). Today, diameter-limit cutting is still a common practice; in fact, it is probably the most common form of harvesting among FFOs in the U.S. (Fajvan et al., 1998; Munsell et al., 2009). We cannot – and should not – rule out the possibility that such prevalence is because it is simply better

suited to providing what many FFOs need and want from their woods during the time span of their ownership.

3. Proposition 2

Forest ecosystems – whether managed or not – provide ecosystem disservices as well as ecosystem services, and this is not fully appreciated or acknowledged by experts.

This proposition suggests that woodland is a source of liabilities (i.e., ecosystem disservices) in addition to benefits for landowners and society at large (i.e., ecosystem services). To some extent, this may be seen as a subset or corollary of the first proposition, in that it may stem from landowners and experts having different preferences. This may particularly be the case where landowners are aware of potential disservices, which experts may not be aware or choose not to acknowledge or address. However, it may be more fundamental. SDT suggests that amotivation may result in cases where people actively not desire the expected outcome of a suggested activity (Seligman, 1975), demonstrated by the following case study.

3.1. Disservices from forests and trees

Trees are widely seen as providing multiple ecosystem services, whether it be on forest land, farms, or urban landscapes. Many metropolitan areas are undertaking large-scale tree planting efforts with targets of a million or more newly planted trees, including Los Angeles, CA.; Denver, CO.; New York City, NY; Philadelphia, PA; Sacramento, CA.; Atlanta, GA.; Miami, FL, as well as Shanghai, China; London, England; and Pune, India. The narrative often accompanying these massive tree-planting efforts is that urban trees are universally "good" and beneficial to the environment and people (Roman et al., 2021). Urban trees have been shown to produce a variety of benefits to humans, such as human health and well-being benefits, visual and aesthetic benefits, social, economic benefits, and other ecosystem services (Roy et al., 2012; Wolf et al., 2020). However, research also has shown that some residents, homeowners and stakeholders associate urban trees with *ecosystem disservices* such as undesired shading of homes; leaf litter and associated work to remove fallen leaves, branches and fruits (Guo et al., 2019); human health impacts associated with allergens (Roy et al., 2012); and impacts to the built infrastructure; human health and safety (Dunn, 2010); cultural, aesthetic and social impacts; environmental and energy issues, and management costs (Roman et al., 2021). Ecosystem disservices have been defined as "the ecosystem generated functions, processes and attributes that result in perceived or actual negative impacts on human wellbeing" (Shackleton et al., 2016, p. 590). A failure to recognize and account for disservices, real and perceived, associated with urban tree planting initiatives can produce unintended community consequences, environmental justice impacts, conflict and disagreement among and between the public and managers, and lack of support for public planting and stewardship initiatives (Roman et al., 2021). An information and research need that arises from this recognition of trade-offs between services and disservices associated with urban trees is a deeper understanding of the diversity of attitudes, perceptions, and accounting of benefits and impacts associated with urban trees across communities and stakeholders.

Research has found that perceptions and attitudes about disservices associated with urban trees can influence resident behaviors around tree planting, maintenance and removal. Conway and Yip (2016) examined whether and how urban residents who had experienced damage to yards, property and infrastructure from trees as a result of ice storm events (i.e., a disservice associated with trees) changed their tree management practices. The authors found these negative experiences promoted some residents to preemptively remove healthy trees to avoid potential future damage/disservices, as well as altered plans to plant new trees. Guo et al. (2019) found a positive association between resident attitudes towards disservices with urban trees and a decision to remove trees. Kloster et al. (2021) explored how urban resident perceptions of tree amenities and dis-amenities influenced their decision to allow tree removal by utility companies along powerlines on their properties, finding that those who allowed tree removal were motivated to do so by perceptions of dis-amenities with the trees. The tree dis-amenities that study participants most frequently identified were hazards to personal safety and property and threats to infrastructure. Examples such as these underscore the need for the professional forestry community and municipal planning bodies to recognize that urban dwellers can experience negative impacts and disservices associated with trees in yards, boulevards and public spaces, and that these experiences, attitudes and perceptions may shape their vegetation management, planting and removal decisions as well as support for municipal tree management activities and programs.

A related literature that has explored ecosystem disservices related to trees has focused on farmers and agricultural lands and the trade-offs that trees in and around managed agricultural lands can bring (e.g. Morford et al., 2022). Ango et al. (2014) examined farmers' behaviors related to the management of ecosystem disservices associated with trees on agricultural lands, finding that farmers' actions are resulting in a restructuring of the land cover mosaic contributing to a loss of tree cover in the agricultural landscape. Blanco et al. (2019) examined how farmers' perceptions related to ecosystem services and disservices of rural forests, groves and scattered trees on their properties influenced land cover dynamics and forest practices. Respondents identified services associated with trees, including provisioning services (firewood, food for human consumption, timber, game habitat), regulating services (windbreaks, erosion control, shelter and shade for farm animals), and cultural services (scenic value, biodiversity conservation, and aesthetics). Disservices associated with trees were also identified, largely related to conflicts with farming activities (e.g., interference with farming equipment and activities, additional work, damage to fences, obstruction of drains) as well as societal pressures. A key outcome of this study is that the perceptions of disservices from trees had a negative influence on farmers' interest in maintaining remnant trees or planting new trees. Fortier et al. (2016) examined the ecosystem service and disservices that are associated with the adoption of the agroforestry practice of planting of riparian buffers in agricultural fields, finding that a disservice associated with the trees (e.g., the tree root system clogging agricultural drainage tile systems) could be a deterrent to adoption of this agroforestry practice.

We suggest that family forest owners – like urban landowners and agricultural landowners – also perceive some disservices associated with trees, or the management or stewardship of them in certain ways, which could influence planting and stewardship behaviors, support of and participation in conservation programs, willingness to undertake activities recommended in forest management plans by forestry professionals, and adoption of agroforestry practices. These disservices to family forest owners could include, among other things, reduced or non-preferable viewsheds, high concentrations of tree pollen, or low quality / quantity of livestock forage.

4. Conclusions and Implications

In this paper, we have attempted to draw attention to the fact that landowner values and objectives do not always align with those of forestry and conservation experts. We suggest that this value misalignment – and not a simple lack of knowledge – may be at the heart of why FFOs do not always do "what they are told" or what the forestry and conservation experts view as beneficial or optimal. The solution may not be, therefore, trying to educate or persuade landowners to "do the right thing". It may be, instead, to begin asking how forestry and forest conservation – if they are to be successful on private lands – might acknowledge and be more responsive to what landowners need and want. This is not a new idea. In 1966, Behan drew our attention to the "Myth of the Omnipotent Forester," suggesting that the proper role of

foresters was not to dictate objectives for forest management, but to be responsive to the objectives of landowners (Behan, 1966). Similarly, Jones et al. (1995, p. 41) wrote, "Perhaps foresters' inability to bring more NIPFs [non-industrial private forests] under sound management is traceable to our failure to truly understand the NIPF owner." Despite these and additional calls in the literature, the idea of a more responsive and less prescriptive approach does not seem to have had wide influence on forest policies and programs, and extension and outreach. For example, several states rely on expert licensing within a non-regulatory framework as the main mechanism for ensuring production of public services (i.e., sustainable management) on private lands (e.g., Goldstein et al., 2023). Will this approach work if landowners do not seek out or follow the advice of the licensed experts? And even if landowners choose (or are compelled) to follow the advice, are there not conflicts of interest if the established advice privileges some values at the expense of other values held by the landowners and not recognized or downplayed by the expert narrative? According to SDT, expertise that supports landowner autonomy and competence is likely to be more effective than expertise that is perceived as controlling or instrumental. In other words, helping landowners determine what they *want* to do and *could* do may be a more effective strategy for increasing engagement than telling them what they *should* do. This cannot be achieved simply by having landowners work with forestry professionals to develop a written forest management plan, because such plans are not widely viewed by landowners as supporting genuine autonomy and competence, evidenced by the fact that, despite decades of effort by forestry professionals, only 11 % of FFOs with 10 or more acres currently have a written management plan.

In addition to autonomy and competence, SDT posits that individuals fundamentally need and respond to "relatedness". Experts, however, might be ill-suited to satisfy that need for many landowners. Research shows that individuals do not always respond to expertise in making pro-environmental decisions (e.g., Savchenko et al., 2023). Furthermore, landowners may judge experts, not based on scientific, but social criteria (e.g., Gootee et al., 2010; Jamison et al., 2023). Experts – to the extent that they are seen as scientists – may be perceived as "low warmth" individuals who cannot relate to the general public (Fiske and Dupree, 2014). Consequently, efforts made to be genuinely open and responsive are likely to result in forestry and conservation experts being perceived more favorable or trustworthy. This is especially true in cases where landowners are fundamentally not conservation-oriented (Tiebel et al., 2024); in these cases, focusing efforts on increasing landowners' basic knowledge and awareness of forest ecology, as well as fostering increased awareness, interest, and connection to the land, may be more fruitful.

An even more successful strategy to fostering relatedness may be to bypass experts altogether, or at least to downplay their roles or visibility. Landowners are traditionally more strongly influenced by peer networks than by experts (Kittredge et al., 2013). Therefore, an extension strategy founded on peer-to-peer learning, with experts taking a primarily facilitative role, may be an especially effective way to blend a genuine recognition of landowner objectives with more traditional forestry and conservation goals (Ma et al., 2012; Catanzaro and Hamunen, 2019). Extension models that heavily feature relationship building between landowners and "trusted brokers" rooted in local communities and cultures, may be similarly effective (Kadykalo et al., 2021; Downey et al., 2022).

Finally, it is worth pointing out that landowners who remain unwilling to do what "they are told" are not necessarily unengaged landowners. In fact, choosing to go their own way on their land, eschewing established programs, policies, services and experts' advice, might in and of itself provide a rich source of autonomy and competence. The NWOS shows that, despite limited participation in forestry programs, a significant majority of FFOs hunt, harvest timber, collect firewood and non-timber forest products, and otherwise actively engage with their land (Butler et al., 2021). Furthermore, landowners' active use of forest appears to have changed very little in the recent or long-term past (Caputo and Sass, 2024). In addition to active use of their land, landowners may have an intentional, principled interest in "doing nothing" (Kittredge and Kittredge, 1998; Foster and Orwig, 2006) or engaging in intentional passive forest management (Denaroso et al., 2025).

CRediT authorship contribution statement

Jesse Caputo: Writing – review & editing, Writing – original draft, Project administration, Funding acquisition, Conceptualization. **Zhao Ma:** Writing – review & editing, Writing – original draft, Project administration, Funding acquisition, Conceptualization. **Stephanie A. Snyder:** Writing – review & editing, Writing – original draft, Project administration, Conceptualization.

Declaration of Competing Interest

The article is original work and has not been submitted for publication elsewhere. The authors declare no conflicts of interest.

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Data Availability

No data was used for the research described in the article.

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