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Estate planning as a forest stewardship tool: A study of family land ownerships in the northeastern U.S.

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ABSTRACT

Forested lands produce a multitude of societal benefits, and landowner decisions influence the provision of these benefits over space and time. The fate of over half of the 330 million hectares of forestland in the United States (U.S.) rests in the hands of private ownerships, and over 35% of U.S. forestland is owned by families. Landowner estate planning offers a means for families to make critical decisions about the future stewardship of their land, including whether and how to split up lands or to take steps to ensure lands remain forested. Yet, decision-making regarding ownership transition and formal estate planning remains poorly understood. Our research provides foundational knowledge of the current status of family landowners' formal estate planning in four northeastern U.S. states. Using a mail survey in Massachusetts, Maine, New York and Vermont, we compiled information on owners' current management, future intentions, estate planning, and demographics. Approximately 66% of respondents have made use of a will for estate planning; 25% have combined the use of a will with a tool that may control use; and 34% have not employed any formal planning tools. Findings from a multinomial logit model of estate planning actions suggest that landowner and land characteristics, barriers to the planning process, and intentions to pass to heirs, recreational and financial investment objectives, and landscape area differences explain variation in the extent and type of planning by owners. Our results underscore the importance of additional research on estate planning, including the conservation intent of these plans, and offer guidance to practitioners interested in bolstering engagement with these planning tools.

1. Introduction

Forested lands provide a multitude of societal benefits, including timber markets, recreational opportunities, water quality, biodiversity, and carbon sequestration (Barrio and Loureiro, 2010; Millennium Ecosystem Assessment, 2005; Stein et al., 2009). Provision of these benefits depends partly on the management and tenure decisions of numerous forest ownerships. In fact, many of these benefits are best ensured through land that will not only remain forested, but in parcels large enough to realize the benefit from the land (e.g., habitat, forest management) (Hatcher et al., 2013; McDonald et al., 2006).

Of the 330 million hectares of forest in the U.S., the fate of an estimated 58% is held and managed by 11.5 million private ownerships, and of these, 10.7 million ownerships are families (i.e., families, individuals, trusts, estates, and family partnerships), reflecting 117 million hectares of forest or 36% of all U.S. forest area (Butler et al., 2016b; Butler et al., 2016a), each making their own decisions about the future of their forests. These family-forest ownerships contribute a non-trivial amount of social and economic benefit of all forests; in 2015, they produced close to 50% of the timber removals nationally (Butler, 2016).

Landowner estate planning offers a means for owners to make critical decisions about the future stewardship of their land, including whether and how to split up lands or to take steps to ensure lands remain forested. Yet, decision-making of private forest ownerships regarding transition and formal estate planning remains poorly understood. Although much work has been done engaging landowners in

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active forest management to achieve stewardship goals, less research and fewer programs address the connections between ownership transition and formal estate plans and the stewardship or conservation of these private forest ownerships (Broderick et al., 1994). Landowner estate planning has been identified as important for preserving both farm and forestland (Broderick et al., 1994; Salamon and Lockhart, 1980; Tyson and Broderick, 1999). Estate plans can ensure that assets (e.g., land, house, financial accounts) are distributed in a way that will meet the financial needs and personal goals of the owner and the owner's family; conservation-based estate plans are those that directly formalize plans to keep some or all of landowner's land in its natural, undeveloped state (Catanzaro et al., 2014). Estate planning for forest owners is sometimes considered a form of woodland management (Dennis, 1981).

Research on estate planning for forest ownerships has been limited to only a few aspects of the process. For example, the literature has covered subjects related to legacy – finding inheritance an important factor in wanting to provide heirs a legacy (Majumdar et al., 2009); forestland concerns/interests of the next generation owners (Mater et al., 2005), estate planning statistics (AARP Research Group, 2000) and financial structures (Howard, 1985). One study assessed attitudes and decisions surrounding estate planning in Connecticut, finding age and education related to interest in keeping forest protected from development (Broderick et al., 1994). Catanzaro et al.'s (2014) preliminary Massachusetts analysis reports that cost and family-related issues were the most common barriers to estate planning for forest ownerships.

The literature on farm succession is extensive and indicates that legacy issues are also important to farm ownerships (Grubbstrom and Soovali-Sepping, 2012; Steiger et al., 2012). Several studies of farm ownerships indicate that having a farm succession plan is shown to be positively associated with several characteristics, including age, education, government support, farm size, farm wealth, and geographical region (Calus et al., 2008; Lange, 2012; Lobley et al., 2010; Mishra et al., 2010; Mishra and El-Osta, 2007; Remble, 2010). Farm transfer issues were found to be related to such things as family-related conflicts, lack of time, and ability to find the right professional (Anderson and Rosenblatt, 1985; Hachfeld et al., 2009; Kaplan et al., 2009; McGonigal, 1991; Pitts et al., 2009; Taylor and Norris, 2000; Waters, 2013).

Knowing where private forest and family-forest ownerships are at in terms of their estate planning for their land is the beginning step of the process to help policy and outreach target those who would most benefit. Understanding how this information then matches up with ownerships' goals for the future of their land would be the subsequent step that enables assessment of how policy and education can help these goals be met via estate planning. Directing efforts in this way could help owners make informed decisions about the future of their land, including helping those who wish to have their land maintain the private and public benefits they currently provide.

Gaining such an understanding is important in the U.S., and particularly in the Northeastern U.S. (i.e., New England and New York) where the majority of the land-mass is forest (73%), privately owned (58%) and owned by families (34%) (Butler et al., 2016a; U.S. Census Bureau, 2010). Focusing on “families” (as defined by Butler et al. (2016a)) in this forest-laden region targets both forest and farm ownerships where issues of succession, use and forest stewardship are common to both ownerships. Understanding the estate planning of these family land ownerships (FLOs) has international relevance as well. While strong land use planning, zoning, and land controls designed to limit conversion are found internationally (e.g., Europe and Scandinavia), issues of future use and potential fragmentation still loom large, as indicated by international estate planning research exploring inheritance patterns (e.g., Lidestav (2010) and factors of succession, most frequently related to farms (Calus et al., 2008; Grubbstrom and Soovali-Sepping, 2012; Lobley et al., 2010).

In light of the importance of FLOs, their land and decisions, and research knowledge gaps, our research objectives are to:

1. Understand the extent of formal estate planning that FLOs have undertaken to plan for the future of their land; and
2. Identify factors associated with the type of planning that has been undertaken.

2. Methods

2.1. Study region

The study region encompasses forested areas within Massachusetts, Maine, New York and Vermont. Approximately 73% of the total land-mass in these states is forested, 82% of that is privately owned, and 46% of these roughly 18 million hectares of forest are family-owned (Butler et al., 2016a; U.S. Census Bureau, 2010). We established our study region by selecting two forest landscapes from each state. We used “medium and high change” watersheds as defined by *Forests on the Edge* (Stein et al., 2005) as the basis for selecting landscapes estimated to be threatened by housing density increases. Where watersheds identified by Stein et al. covered a wide geographic area, individual counties within the watersheds were chosen as the landscape. Specific watersheds and counties in our study region include (See Fig. 1):

- Maine: Lower Penobscot River and Saco watersheds
- Massachusetts: Millers and Westfield watersheds
- New York: Cortland and Onondaga counties, and Delaware and Greene counties
- Vermont: Orleans and Rutland counties

2.2. Sample frame

We designated the sample frame as FLOs of 4 or more hectares located within the study region. We constructed the sample frame using property information available from state and municipal agencies. We included ownerships located in municipalities where 50% or more of the town was located within the study region. We did not restrict the sample to designated forest ownerships; in this heavily forested region, most ownerships $>$ 4 ha involve some amount of forested land. In fact, family-forest owners of four or more hectares reflect over 7 million - hectares of forest in these four states and 349,000 ownerships (Butler et al., 2016a). Ownerships of four or more hectares are better-suited for economically viable forests (Hatcher et al., 2013), forest management, and other forestry-based programs (Butler et al., 2016b).

Property tax assessment data provided the raw ownership information for private individual or family ownerships. The sample frame consisted of randomly selected ownerships, and we accounted for multiple-property ownerships when generating the frame. While most data records reflected single-property ownerships, some of the data reflected multiple-property ownerships (i.e., ownerships of separate, unconnected parcels). We designed the sample frame so that each ownership has the same likelihood of being selected: the numerous records of each multiple-property ownership were collapsed into one record. The result was one record per ownership reflecting the property with the largest acreage.

2.2.1. Sample selection

We used a stratified sampling approach to select the sample for survey data collection. Given our interest in mostly forested landscapes that are viable working forests and possess high ecological value, it was important for the sample to contain larger parcels. In the northeastern region of the U.S., the majority of parcels are smaller, averaging 21 ha per ownership for the four states in our study region (Butler et al., 2016a). To ensure that larger parcels are included in the survey sample, we used a stratified sample, selecting half the ownerships to exceed a