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Forest owners' willingness to accept compensation for voluntary conservation: A contingent valuation approach

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ABSTRACT

To avoid conflicts often associated with mandatory regulations, it is crucial to motivate and incentivize forest owners to participate in voluntary conservation programs. To investigate forest owner preferences and willingness to accept compensation (WTA) to participate, we conduct a contingent valuation survey of non-industrial private forest owners in Norway. We find that WTA is negatively related to the size of the forest holding and absentee ownership, and positively related to the share of the forest classified as productive. The overall mean WTA per year per hectare is estimated at NOK 1800. Costs of reaching conservation goals can be saved by targeting small and relatively less productive forests and absentee owners first, before considering increasingly expensive forest areas. However, this recommendation only holds if desirable biological characteristics are not substantially less likely to be found in such areas. Results are potentially important both for our understanding of forest owner preferences and the costs of voluntary forest conservation schemes currently in use in many countries.

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Introduction

There is growing concern in the environmental economics literature that public benefits from forests are underprovided in current forest management regimes and need to be increased through

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policy measures that stimulate conservation. Forest economists, on the other hand, have traditionally been more concerned about understanding harvesting decisions in light of the (perceived) shortages of timber and the decline of traditional family forestry in the western world (Vokoun et al., 2006), hence proposing various government support programs to increase forestry activity (Fischer et al., 2010). The non-industrial private forest (NIPF) owners are in the midst of these partly opposing foci of forest and environmental economics. They have always been important for forestry and provision of non-timber benefits in the Scandinavian countries as well as in the USA and are at the receiving end of a number of environmental and forestry motivated programs (see e.g. forest economics reviews by Amacher et al., 2003; Beach et al., 2005).

While increased conservation on private lands were originally done through mandatory regulation, i.e. land restrictions or relinquishment of property and user rights, large conflicts erupted between NIPF owners and the government over this approach in many countries. Instead, more emphasis is now put on voluntary programs to incentivize forest owners either to set aside land as reserves or to promote more environmentally sensitive forestry, i.e. various forms of payment for ecosystem service (PES) schemes. There is a growing literature that analyzes what motivates forest owners to participate in such programs, based on either hypothetical survey (contingent participation) data or on actual enrollment data (see e.g. Suter et al., 2008 and Langpap, 2004 for overviews). More recently, both strands of environmental and forest economics have adopted the stated preference techniques of contingent valuation (CV) and choice experiments (CE) to analyze forest owners' minimum willingness to accept (WTA) compensation to participate in various programs.

As NIPF owners¹ typically have broader motivations than maximizing profits and therefore would not require full compensation for lost income due to conservation activities (Raunikaar and Buongiorno, 2006), knowledge about WTA is important in the cost-effective targeting of conservation programs. Authorities with knowledge of the factors that determine WTA can utilize this to conserve more or biologically better forest land for the same, scarce conservation budget. Knowledge of mean WTA per hectare is also useful as a basis for deriving ballpark measures of the costs of various conservation targets (e.g. percentage conserved), which in turn can be compared with willingness to pay for conservation benefits.

The aim of this paper is to contribute to this emerging literature by investigating NIPF owners' WTA for participating in the nationwide voluntary conservation program in Norway, using a CV approach. Related studies using CV include Bateman et al. (1996) and Buckley et al. (2009) who investigate landowners' WTA to establish recreational woodlands or provide public access in England and Ireland, respectively, Amigues et al.'s (2002) and Kline et al.'s (2000) studies of landowners' WTA for protection of riparian habitat in France and the USA, respectively, and finally, Kilgore et al.'s (2008) and Sullivan et al.'s (2005) investigation of WTA and enrollment in forest stewardship and banking programs in the USA.² In Scandinavia, the only study we are aware of is Layton and Siikimäki's (2009) analysis of forest owner enrollment in a Finnish conservation program.³ Compared to these studies, we attempt to link WTA more directly to welfare measurement in environmental economics, include a richer set of variables in our empirical analysis, and make a novel contribution to the analysis of Scandinavian NIPF owners' preferences and WTA for conservation. In the next section we give a brief explanation of the voluntary forest conservation program, before clarifying theoretically how WTA can be defined. We then report the analysis and results of a CV survey of NIPF owners in the 10 counties of the Southern part of Norway, the main area of future expansion of forest conservation. In the final section we offer some conclusions.

¹ A closely related literature investigates the motivations of farmers beyond profit maximization, starting with the pioneering work by Gasson (1973).

² A few recent papers have used CE instead of CV to investigate forest owner preferences and WTA for different forest conservation programs (see e.g. Horne, 2006; Matta et al., 2009; Sorice et al., 2011).

³ Another Finnish study by Mäntymaa et al. (2009) investigates factors influencing actual compensation claims, combined with some information, other than WTA, from survey data.

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