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ANALYSIS

The roles of ownership, ecology, and economics in public wetland-conservation decisions

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Abstract

Scholars have studied the problem of optimal reserve-site selection. However, the actual conservation choices made by government decision makers may yield reserve networks that are far from optimal. This paper uses data on patterns of wetland conservation in Austria in order to identify patterns in government decisions regarding which wetlands to protect. We find that conservation decisions are guided at least in part by variation in ecological value and economic cost. However, there is also a marked bias against conserving lands that happen to be privately owned. This bias against protecting private land is likely to be cost-ineffective, driven by asymmetric information and political pressure.

Keywords: Wetland; Conservation; Ecosystem services; Ownership; Priorities; Reserve-site selection

JEL classification: Q2; D73

1. Introduction

In the quest to preserve biodiversity and ecosystem services, nations and international bodies have devoted increasing attention and resources to land conservation programs. Environmental groups have stepped up conservation efforts (e.g. the World Wildlife Fund's "Global 200" initiative) and countries have put in place new conservation policies such as the Wetland Reserve Program in the U.S. and the Natura 2000 program in the European Union.

Conservation is costly, since land preservation requires society to forego disruptive economic activity on protected lands. Scholars (e.g. Ando et al., 1998; Parks et al., 1995; Polasky et al., 2001; Costello and Polasky, 2004) have studied the problem of how to choose networks of conservation reserves to minimize the cost of accomplishing a conservation goal (or

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maximize the conservation benefits that can be attained for a given level of cost). However, as Wu and Boggess (1999) point out in their article on threshold and cumulative effects of conservation activity, observed patterns of conservation activity may be far from optimal.

Wetlands are particularly important and productive ecosystems. Thus, we use data on patterns of wetland conservation in order to discern patterns in government decisions regarding which wetlands to protect. Our analysis explores the roles played by variation in the costs of conservation (such as disruption of economic activity) and socio-economic sources of variation in the benefits of conservation (such as the number of people nearby to enjoy a protected reserve). We identify correlations between conservation choices and the ecological characteristics of wetlands, to evaluate the likelihood that conservation activities are being targeted to provide high levels of environmental services. Finally, we investigate the role that land ownership plays in conservation-site choices. Specifically, we explore the possibility that the network of wetland reserves is biased toward publicly owned lands. This might occur because asymmetric information complicates the task of designing a compensation system and increases the cost of conserving private lands relative to public, or because compensation for takings is inadequate and private landowners exert political pressure against decisions to protect their lands. In the Austrian context, it is important to bear in mind that public land is not necessarily more likely to become protected than private, since the incentives surrounding protection decisions are similar for private and public landowners.

The paper is structured as follows. Section 2 describes the institutional background for our study. Section 3 lays out the literature review and conceptual framework on which the paper rests. Section 4 describes the data we use from Austria and the econometric models that we estimate. Section 5 presents and discusses the empirical results. Section 6 concludes.

2. Background

Austria is an interesting nation in which to study conservation choices, for there are several characteristics of the conservation policies and institutions in that nation that facilitate our efforts to ascertain the impact of ownership and ecological characteristics on conservation choices. First, private landowners in Austria are supposed to be compensated for takings of their property in the name of conservation. Austrian conservation policy is in the realm of provincial governments, and each of the nine federal provinces has its own nature conservation act. Nonetheless, all nine provincial acts require that landowners be fully compensated for the reduction of the market value of their property due to conservation policies. If administrators achieve this goal of full compensation, there is relatively little incentive for private property owners in Austria to consciously deteriorate the ecology quality of the area or to lobby conservation officials in order to prevent more stringent regulations regarding the use of the property (Getzner, 2000).[2] In fact, there might even be incentives to add one's land to a nature reserve due to above-market compensation for takings or payments for certain activities on protected lands (e.g. organic farming, tourism development). The system of compensation is not unique among nations; the new Wetland Reserve Program in the U.S., for example, is voluntary and compensates farmers for restoring marginal farmland to wetland status. Lessons learned from Austria may thus be relevant to new conservation programs in other countries.

Second, land owned by the Austrian government is not dedicated to conservation in the same manner as U.S. government land. The public lands of Austria are largely lands that were historically owned by monarchs and later seized for public use; these areas were certainly not chosen with conservation benefits in mind. All publicly owned land was, by law, transferred to the Austrian Federal Forests by law in 1925, and in the 1990s the Austrian Federal Forests was transformed into a for-profit publicly owned company. This entity holds about 10% of Austria's total area (making it one of the nation's largest landowners) and has a strong interest in economic success in the fields of forestry, fishing, hunting, tourism, real estate management and consulting. Thus, conservation projects might involve conflicts with the Austrian Federal

[2] This is a striking contrast to the perverse incentives established by the Endangered Species Act (ESA) in the U.S.