



# Report on Research

College of Agricultural, Consumer and Environmental Sciences

## Private and Public Land Conservation

Public conservation areas in Illinois appear to discourage private conservation efforts in adjacent areas, according to a research project involving a University of Illinois environmental economist.

“In areas like Illinois and Massachusetts, we found that established public reserves seem to repel private conservation from nearby lands,” explained Amy Ando, an associate professor in the Department of Agricultural and Consumer Economics. “This repulsion does not necessarily reflect a bad outcome if the public reserves successfully meet the benefit thresholds in those areas and if private activities simply shift to conservation efforts not targeted by the government.”

Ando and Heidi J. Albers of Oregon State University co-authored two papers — “Patterns of Multi-Agent Land Conservation: Crowding In/Out, Agglomeration, and Policy” and “A Spatial-Econometric Analysis of Attraction and Repulsion of Private Conservation by Public Conservation” — under a grant from the National Science Foundation.

Both papers examine facets of the interactions between government and private conservation efforts in given areas. The second paper examined the spatial relationships among reserves in California, Illinois, and Massachusetts. The first paper developed a model of interacting conservation agents to determine which land conservation patterns develop in different settings and to compare those patterns with the pattern that is best for society as a whole.

The network of protected areas in the United States, Ando noted, arises from conservation investments made by a mix of public and private agents. Data from the Land Trust Alliance shows that 1,500 non-national land trusts exist and that the acreage protected by such groups doubled from 1998 to 2002.

Private groups may not coordinate conservation decisions with other agents. “And it is difficult for public agencies to choose where to locate new public reserves without knowing how they might influence the configuration of private conservation,” she said.

Ando’s and Albers’s study found that in places like California, where even private conservation agents consider the value of having connected networks of public reserves, public reserves might spatially attract private conservation by increasing the benefits associated with protecting nearby lands.

However, the tendency in Illinois and Massachusetts was in the other direction.

“Agency planners in states like Illinois and Massachusetts should recognize that public reserves can repel private reserves like the north poles of two magnets,” she said.

In California, private conservation areas seem to focus in areas with high-valued resources that are under high levels of threat.



“Private reserves in Illinois seem to locate in townships where conservation yields large ecological and recreational benefits,” she said. “In Massachusetts, however, ecological characteristics seem to play little or no role.”

Ando said that land conservation provides a wide range of environmental benefits, some of which are better provided by particular configurations of conserved land. However, because of the potential for decisions by uncoordinated government agencies and private groups, socially preferred patterns of conservation may not arise.

The first paper’s examination of land conservation patterns when public and private agents interact produced a number of policy implications and suggestions for land trusts.

“A private conservation group that is focused on a particular territory can induce government conservation in its territory with land purchases that are strategic in location,” Ando related. “And government programs to promote coordination between land trusts can be cost-effective tools to encourage socially preferred patterns of conservation.

“When conservation benefits contain important thresholds, public conservation encourages private conservation.”

However, she noted, governments can encourage private conservation by leaving some high-benefit areas for private organizations to conserve.