Research recommends compromise when choosing conservation site

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A lot of variables come into play when selecting a site for environmental conservation that yields benefits to people nearby such as wildlife needs, species and vegetation uniqueness, and costs to the government or community. When faced with a choice, University of Illinois researchers found that society and the environment can be better off if conservation agents choose sites that are closer to people because people are more willing to financially support something close to them.

In their study, Environmental Economist Amy Ando and her graduate student Payal Shah developed strategies for land conservation decisions that provide amenities such as song birds, prairie grasses, and other features of the natural landscape that people enjoy. Their work considered conventional conservation-planning concerns like variation among sites in their ecological richness and sensitivity of some ecological functions to habitat fragmentation. Their work also pushed research on conservation preserve design forward by including factors such as the distance between the conservation area and concentrations of human population in the landscape.

"There's an inclination in the conservation community to target conservation activities at the points of the highest ecological value, like the hot spots where there's lots of biodiversity," said Ando. "Depending on how unique and critical those areas of ecological importance are, our analysis shows that if there are places of somewhat lower ecological value that are closer to people, it can be worth shifting a little bit away from the site of highest ecological value to be near human populations

because then you get more human value of the things that you've protected."

Ando and Shah's study entitled "Demand-Side Factors in Optimal Land Conservation Choice" will appear in a special issue of the journal *Resources and Energy Economics*. There's a tension between biological conservationists and economists. The paper is an effort to strike a balance between setting aside land according to natural science objectives and what might be more economically pragmatic.

"What our paper does is to try to address that tension very directly," Ando said. "Suppose you're a wildlife manager and your goal is to maximize the production of water fowl. You are working with a natural production function that has to do with where the lands are and how fragmented the network is. But you're going to be able to raise more money if conservation lands are near where people are, because people are more likely to want to pay for conservation if it's close to them."

Ando said that choosing a site to protect is very case-specific, but outcomes can be improved by knowing when and when not to compromise. "If it's a species that has to live in one place or if it's an ecosystem that truly needs not to be fragmented in order to function, then the reserve should be in that one place and it should not be fragmented," she said. "We're just saying that in places where nature gives you a little bit of flexibility, then go ahead and think about where the people are in the landscape, too. At the end of the day, you'll be able to do more for nature if you get more people buying into it, willing to support it, and wanting to give money to it. "

Protecting grasslands in Illinois is one example. "One of the goals of our statewide Wildlife Action Plan is to have more restored grasslands. We've got a lot of area that's reasonably homogeneous in its restoration potential," Ando said. "So when you have that flexibility ecologically in

the restored grasslands, why not put them a little bit closer to, say, Champaign-Urbana where you have a bunch of people rather than in an area where there aren't many people gaining value from what you've restored?"

Ando recognizes that economists are different from researchers in most other disciplines that study conservation. "For us, value isn't just how many ducks, but who cares about the ducks and how much," she said. "And I think that at the end of the day if you're going to have money to do conservation, people have to want to give you the money or they have to be willing to vote for the tax referendum or the bond issue."

Ando cited the widespread increase in successful referendums in which counties and cities set aside their own money to purchase local lands for open space and conservation. "Increasingly I think that conservation and wildlife managers are running up against this constraint -- they want to protect one area because it has the greatest ecological value but people want to protect land near where they are. There can be a tension there."

The new U of I research builds upon previous empirical research that others have done showing how public willingness to pay for conservation often declines with distance from whatever it is that's being protected. That phenomenon, however, is not universal. "For big charismatic things like polar bears, salmon, and pandas, it doesn't matter where you are," Ando said. "People want to protect polar bears, and it doesn't matter if you're never going to see one. Proximity isn't a big deal because the value people get out of it isn't going to depend on where exactly the polar bears are."

But Ando cautions that willingness to pay can't be the only deciding factor. "If you were to maximize the willingness that people have to pay for conservation areas, then you would put all of them near the wealthy communities. I think that a lot of us are pretty uncomfortable with that.

There are social justice issues with that. Everybody ought to have some access to wildlife so there may be some leveraging that you can do - put some of the preserved areas near the wealthy communities to build support."

One other dilemma that surfaced in the research concerned the fact that well-being and ecological service potential is always lower when people's preferences are really localized. "If people only care about things that are really close to them, you're often just doomed because it gets very hard to do the balancing act. If the area of greatest ecological potential doesn't happen to be close to people, and if people's preferences are very localized, then there's not going to be much that you can do to make things better."

Ando says that more wildlife conservation education is needed to encourage people to appreciate not just the nature that's in their backyard but also what might be a little farther away.

"If you can broaden that - the range of space over which people value nature -- all of your outcomes are better. You're better able to raise the money you need for effective conservation efforts."

Source: University of Illinois at Urbana-Champaign (news : web)