

# Risks and rewards of quantifying nature's 'ecosystem services'

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How much is a stream worth? Can we put a dollar value on a wetland? Some conservation proponents have moved to establish the economic value of "ecosystem services," the benefits that nature provides to people. The approach translates the beauty and utility of a wetland into pounds of phosphorus removed from agricultural runoff, Joules of heat pulled out of urban wastewater, and inches of floodwater absorbed upstream of riverside communities.

The idea of trading [ecosystem services](#) has surged in popularity since the 2005 United Nations Millennium Ecosystem Assessment. But not all ecologists are enthusiastic about ecosystem services markets. In a half day symposium at the Ecological Society of America's annual meeting this August, experts will discuss the science underlying ecosystem services and the benefits and pitfalls for conservation.

"If you don't put a dollar on it, decision makers are not going to take it seriously," says symposium speaker Bobby Cochran, Executive Director of the [Willamette Partnership](#). He says framing a natural system as an economic good puts it into a context where decision makers recognize its value. Reframing conservation in terms of benefits to people helps break down old stalemates between conservation advocates and other economic interests.

"Natural ecosystems provide us with numerous services, not all of which are easily quantified," says symposium organizer Emily Bernhardt of Duke University. "A challenge inherent in new ecosystem service

markets is ensuring that commodifying one or more services doesn't lead to unintended consequences for non-target ecosystem attributes." Critics would prefer to invest comprehensively in the maintenance of ecosystems, with the understanding that people extract benefits from these resources that may not be easily captured by economic instruments.

Bernhardt has recruited a slate of speakers with opposing views on the effectiveness of compartmentalizing nature into economic services with monetary values. To stir debate, she will push speakers to address tendentious questions, including:

- What variables have you measured as proxies for ecosystem services? How well do they match? Where are the uncertainties?
- How do you choose which ecosystem services to include in your analyses, and which to leave out?
- How does maximizing the profitability or effectiveness of one aspect of an ecosystem affect other essential ecosystem properties – particularly those that are more difficult to quantify?

Cochran has run into these hard choices on projects for the Willamette Partnership, where he has to balance the complexity of ecosystems against clarity of implementation. "Our biggest enemy in the conservation field is lack of trust and credibility," he says. "The more complicated a program is to implement, the harder it is to breed trust and credibility."

Trust and credibility also grows from good experiences with programs that produce what they promise. Successful development of markets in ecosystem services, says Cochran, requires a sound understanding of the ecological systems in play, and the research that can provide that understanding. "There's just so much about ecosystems that we do not

know. Ecosystems are changing dynamically, and the pace of change is increasing," he says. "If we don't have good science, none of this stuff works."

**More information:** [eco.confex.com/eco/2012/webpro...  
ary/Session7837.html](http://eco.confex.com/eco/2012/webpro...ary/Session7837.html)

Provided by Ecological Society of America

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