

Deeper understanding of environmental values gained through broader collaboration

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It's understood that chemists and geologists come from very different science disciplines, but people tend to file all social scientists under one category—social. But within the social sciences, a psychologist is very different from an anthropologist or an economist. A University of Illinois study illuminates the need to engage social scientists from a specific discipline to solve problems by bringing their distinct disciplinary perspectives.

In social science, one size doesn't fit all, according to Carena van Riper, environmental social scientist and assistant professor in the College of Agricultural, Consumer and Environmental Sciences Department of Natural Resources and Environmental Sciences at the University of Illinois. She participated in a sort of think tank, hosted by the National Science Foundation, to bring different kinds of scientists together to solve complex problems. Van Riper's group focused on cultural ecosystem services—recreation, cultural identity, relationships to places, etc.

"The problem we tackled includes all of the different factors taken into consideration when trying to understand how people put a value on the environment," vVan Riper says. "If you want to effectively solve a problem, researchers should engage multiple [social scientists'](#) perspectives."

The outcome is what van Riper refers to as a roadmap for researchers. "We drew from research in multiple social [science](#) disciplines to think

about how they could enhance the study of ecosystem services. Psychology, sociology, geography..." she says. "We packaged it all together."

After developing a model and showing how different disciplines interfaced with it, the group applied the model to three different cases, using actual research projects in the United States, Colombia, and Australia. "We showed how the studies engaged with the model but in an incomplete way. Adding various [social science](#) perspectives would help researchers identify a more accurate value of nature."

One of the research projects looked at how a community along the Anchicaya River in Colombia was impacted by developments from a hydroelectric dam. After a tremendous amount of sediment was released below the dam, the community united to request compensation for their losses. "How do you put a price tag on that environment? Fortunately, the research team was interdisciplinary and helped the community advocate for their wellbeing."

According to van Riper, a lot of the work in *BioScience* is published by folks in the natural sciences. The goal of her working group was to speak to this audience and show that the social sciences are not a homogeneous field.

"Human beings are complex. In the social sciences, there are lots of pieces, so you have to look at more than one discipline. There are internal processes like values, beliefs, attitudes, emotions. These are things that people process on the inside. And then external factors, like policies, institutions, cultures," she says. "They are all critically important pieces of a puzzle that help us understand how society values the environment."

Van Riper says after the working group examined the three cases, they

developed questions to engage researchers and managers. "If you're doing research, what are the questions you can ask to accommodate different ways of viewing the world?" She goes on to explain that the working group really tried to stir the pot and get people thinking about the intangible and non-material values people associate with nature.

"It's a guide for researchers to engage with social scientists, essentially," van Riper says. "We need to take a more interdisciplinary, if not, transdisciplinary, approach to solving problems. There are benefits that come from engaging with different types of disciplines."

"Researchers need to know this, but also managers in agencies dealing with environmental challenges. It's about embracing multiple forms of knowledge and multiple kinds of methods," van Riper says. "Real innovation lies in research that bridges engineering, the natural and physical sciences, humanities, and the social sciences."

More information: Carena J. van Riper et al. Incorporating Sociocultural Phenomena into Ecosystem-Service Valuation: The Importance of Critical Pluralism, *BioScience* (2017). [DOI: 10.1093/biosci/biw170](https://doi.org/10.1093/biosci/biw170)

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