

Demystifying the human dimension of ecological research

Scholars increasingly recognize the world as a collection of complex, integrated, socioecological systems. The increasing popularity of interdisciplinary research and training across North America, as well as funding structures requiring socially relevant outcomes, reflects a growing appreciation that current ecological conditions are inextricably linked to human socioeconomic and cultural systems, and are affected by human decisions. This realization necessitates an ever-wider variety of perspectives to understand and act wisely within the world. One outcome of this recognition is that “human dimensions” specialists, often known as social scientists, are sometimes included on projects to provide the social perspective. Unfortunately, this inclusion too often happens without understanding the range of human dimensions specialties, what type of social information or approach is needed, or how the skills of human dimensions colleagues can help. The result can be frustration on all sides, the perpetuation of existing academic silos, and work that is less imaginative and less important than it should or could be.

To alleviate this frustration, and forge more successful collaborations, we offer a brief description of human dimensions research. It is important to acknowledge that the term “human dimensions” has even less specificity than the category of “natural sciences”. In fact, “human dimensions of the environment” is an overarching construct and not a field unto itself but rather a conglomerate of diverse, environmentally oriented social disciplines.

Based on our experiences as human dimensions scholars and professionals, we define human dimensions as the complex web of human processes as they relate to non-human, natural resources, broadly encapsulated within the social sciences and humanities. This includes studies that range from an exploration of the psychological factors that influence decision making, and their moral underpinnings, to applied efforts of science communication and policy development. The term “social science” specifically refers to disciplines (including psychology, anthropology, political science, economics, and others) that are “scientific” in that they describe and analyze trends in and determinants of human behavior, using approaches based on established theories, methods, and philosophies on the nature of knowledge. On the other hand, the humanities (such as history, philosophy, and the arts) apply analytical, critical, creative, and speculative thinking and expression to the study of how humans understand, make meaning of, and document the human experience.

Both the social sciences and the humanities can be explored on a spectrum ranging from theoretical to empirical to applied, where the lattermost engages specifically with the *practice* of human–environment relations. Just as a theoretical ecologist may use mathematical formulas to describe population dynamics, a theoretical economist might employ a model to predict social responses to wildlife trade policies, and a theoretical ethicist might present a coherent set of reasons to justify a given action or policy. Similarly, as an empirical ornithologist might collect observational data to test hypotheses about the influence of habitat on avian life-history patterns, an anthropologist might collect data to test a hypothesis about cultural consensus associated with plant collection practices. Finally, as applied ecologists use knowledge from theoretical and empirical ecology to evaluate natural resource management strategies, applied human dimensions specialists might also integrate theoretical and empirical studies in the ecological and social sciences, as well as the humanities, to assess and more effectively communicate with stakeholders to generate support for management programs or stimulate behavior change.

The Ecological Society of America promotes the development and communication of ecological science, as well as its use in making effective decisions about environmental problems. We believe that to increase the effectiveness of science for environmental decision-making, ecologists must draw on the diversity of perspectives contained within the various disciplinary traditions to understand and solve pressing global challenges. Understanding the range of human dimensions approaches, the disciplinary lenses of each, and what both of these can contribute to our knowledge about the world are critical first steps toward supporting a healthy and productive dialogue among researchers and practitioners interested in interdisciplinary environmental research and its global applications. We also recognize that the distinctions between many of these fields are already blurred and may become obsolete in the future, as solutions to complex environmental problems become increasingly interdisciplinary. It is our hope that by clarifying these concepts now, natural scientists will be better equipped to seek out and successfully collaborate with relevant human dimensions scholars. Similarly, we expect human dimensions specialists to better articulate their disciplinary skills and expertise, and thus become empowered to speak about their theoretical and/or methodological contributions to collaborative social–ecological projects.



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