Understanding Boundaries in Social-Ecological Systems

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Abstract

Beginning with Ostrom’s Design Principles for Long-enduring Institutional Arrangements and continuing through the Social-Ecological Systems (SES) Framework, social-ecological systems research increasingly acknowledges the role of boundaries to explain collective action and governance for sustainability. However, the notion of "clear boundaries" is not nearly so "clear". Our goals are threefold. First, we critique and build upon past efforts to unpack what types of boundaries affect collective action and the governance of natural resources and how they do so. We also examine multiple ways that researchers have operationalized the term "clear". This work further expands the traditional interdisciplinary approach to institutional analysis, drawing on recent research on boundaries in geography and the sustainability science literature. After laying out a broad typology for understanding the structures (patterns of continuity and discontinuity) and functions of boundaries, we use the changing nature of boundaries and how they spur change in multiple variables seen as important to collective action as a means to add a dynamic element to the oft-perceived static nature of the SES Framework. Finally, we empirically ground this research via three cases of environmental management currently challenged by boundary issues – the Great Limpopo Transfrontier Park of southern Africa, marine protected areas in the Mexican Caribbean, and Coronado National Memorial along the US-Mexico border.

Keywords: social, ecological systems, boundaries, governance

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