Identifying social-ecological regime shifts: Challenges and insights from the Regime Shifts Database

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Abstract

[Note to organizers: This talk is part of the proposed session "Analysing and managing social-ecological regime shifts"] This talk briefly introduces the Regime Shifts Database as one approach to analysing social-ecological regime shifts. The database focuses on regime shifts that "matter to people" in terms of having substantial impacts on ecosystem services and associated aspects of human well-being. Since all the regime shifts in the database involve drivers and coupled impacts on both nature and society, in one sense they can all be regarded as social-ecological regime shifts. However, our approach also points to an alternative definition of social-ecological regime shifts. For each regime shift we have developed a simple systems model based on the literature, and based on these models we are able to distinguish regime shifts that arise from purely social or purely ecological feedback processes, from those that arise from feedbacks created by the interaction of social and ecological variables. This could form the basis for an alternative definition of social-ecological regime shifts, focused on the nature of the internal variables and processes that give rise to the regime shift. In this talk we contrast these two ways of thinking about social-ecological regime shifts and briefly discuss the research and policy implications of these alternate conceptualizations. Using the systems models we are also able to identify key leverage points (including both drivers and feedbacks) that can be manipulated to change the dynamics of the system in ways that enhance resilience or enable restoration or transformation towards more desirable regimes.

Keywords: Ecosystem services, Global change, Long term dynamics, Feedback, Regime shift, Resilience, Social, ecological systems, Trade, offs, Trajectories, Trap, Transformation

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sciencesconf.org:resilience2014:25197