

## **Resilience in Riparian Corridors: Understanding Contributions of Ecohydrological Change and Social Process in System Collapse and Reorganization**

Mitchell Pavao-zuckerman

Riparian corridors in arid regions are highly valued for many reasons not the least of which is their relative scarcity. Healthy riparian corridors tend to support high levels of biodiversity, and if carefully managed can also meet human demand for water and support other ecosystem services. Loss of healthy riparian zones is a worldwide problem, one that is acutely problematic particularly in transboundary contexts such as the U.S. southwest and adjacent regions of northern Mexico. A social-ecological systems approach to assessing riparian corridor resilience offers possibilities for addressing this problem in innovative ways. Reflecting the body of existing SES research, we anticipate that, when thresholds are exceeded, riparian systems will collapse and eventually reorganize into any one of numerous possible new states, depending on processes in ecological communities, stream-aquifer interactions, human water use and demand, and legal/regulatory processes. An important control point in riparian SESs are decision making steps that directly and indirectly affect water in the landscape and ultimately system resilience. This panel session will focus on questions, approaches, and findings of research initiatives designed to improve understanding of how and when collapse occurs, what happens during the phases of collapse and reorganization, and what the most likely outcomes of this process are likely to be within different geographical, ecological, and societal contexts. The panel itself is comprised of members of an interdisciplinary team (ecologists, hydrologists, social scientists) from a recently funded project to investigate coupled human-natural systems in semi-arid riparian areas. Following some short introductory presentations from part of the interdisciplinary panel to set the stage, the session will continue with an application of a method employed to characterize how decision makers perceive and respond to thresholds. This approach will take the form of a working or focus group and draw on participation from the audience as 'mock' stakeholders in several different scenarios of regional and global change. The goal of this panel session is to include the broader community in defining approaches to recognize and characterize resilience in riparian social-ecological systems. The conference themes addressed within the session include, 'thresholds and regime shifts in social-ecological systems,' and 'knowledge, innovation, and social-ecological learning.'

Panel participants and papers:

Christopher A. Scott, Barbara J. Morehouse, H. Randal Gimblett, Thomas Meixner, Kevin Lansey

Alejandro Castellanos, Miguel Rangel

José Luis Moreno

Hans Skov-Petersen