Integrating Collaboration, Adaptive Management, and Scenario Planning: Experiences at Las Cienegas National

This abstract is from an upcoming publication in Ecology and Society, Special Feature: Exploring Opportunities for Advancing Collaborative Adaptive Management (CAM): Integrating Experience and Practice. It's part of a special feature spearheaded by folks involved in the 2010 CAMNet gathering that featured Las Cienegas.

Contract any of the authors for more information about the process, the paper and CAM. Check out http://www.ecologyandsociety.org/

Jeremy Caves[1], Gita Bodner[2,*], Karen Simms[3], Larry Fisher[4] and Tahnee Robertson[5]

[1]Department of Environmental Earth System Science, Stanford University, Stanford, CA
[2]The Nature Conservancy, Tucson AZ
[3]U.S. Department of the Interior, Bureau of Land Management, Tucson Field Office, Tucson, AZ
[4]School of Natural Resources and the Environment, University of Arizona
[5]Southwest Decision Resources, Tucson, AZ

ABSTRACT

There is growing recognition that public lands cannot be managed as islands; rather, land management must address the ecological, social, and temporal complexity that often spans jurisdictions and traditional planning horizons. Collaborative decision-making and adaptive management (CAM) have been promoted as methods to reconcile competing societal demands and respond to complex ecosystem dynamics. This paper details the experiences of land managers and stakeholders in using CAM at Las Cienegas National Conservation Area (LCNCA), a highly valued site under the jurisdiction of the Bureau of Land Management (BLM).

The CAM process at Las Cienegas is marked by strong stakeholder engagement, with four core elements: 1) shared watershed goals with measurable resource objectives; 2) relevant and reliable scientific information; 3) mechanisms to incorporate new information into decision-making; and 4) shared learning to improve both the process and management actions. The combination of stakeholder engagement and adaptive management has led to agreement on contentious issues, more innovative solutions, and more effective land management. Yet the region is now experiencing rapid changes outside managers' control—including climate change, human population growth, and reduced federal budgets—with large but unpredictable impacts on natural resources.

While CAM experience provides a strong foundation for making the difficult and contentious management decisions that such changes are likely to require, neither collaboration nor adaptive management provides a sufficient structure for addressing the externalities that drive uncontrollable and unpredictable change. As a result, LCNCA is exploring two specific modifications to CAM that may better address emerging challenges, including: 1) Creating nested resource objectives to distinguish between those objectives which may be crucial to maintaining ecological resilience from those which may hinder a flexible response to climate change, and 2) Incorporating scenario planning into CAM to explore how climate change may interact with other drivers and alter options for the future, to identify robust management actions, and to prioritize ecological monitoring efforts.

The experiences at LCNCA demonstrate how collaboration and adaptive management can be used to improve social and environmental outcomes and, with modifications, may help address the full range of complexity and change that threatens to overwhelm even the best efforts to sustain public lands.

Summary:

Las Cienegas National Conservation Area is a spectacular parcel of public land that protects a high-grassland valley in southeast Arizona, including rare species and habitats, water sources vital to human and wildlife communities, and renowned archaeological and western cultural sites. Since 1995, BLM has worked with stakeholders—local ranchers, environmental organizations, state and local agencies, recreation groups, and others—to establish watershed goals with measurable objectives, gather reliable scientific information about these objectives, create mechanisms that bring new information into decisions, and learn together what works. This adaptive management process has improved scientific thinking at Las Cienegas, while collaboration has increased both the expertise available and stakeholder support for contentious decisions. As a result, this collaborative effort has generated over 15 years of sustained commitment and has attracted stakeholder investments into projects such as improved monitoring and research, grassland and riparian restoration, educational programs, protection of historic sites, and recovery of endangered species.

However, like many public lands, Las Cienegas is facing changes that threaten to overwhelm even the best management efforts. Most prominently, changes in climate and in agency policies and budgets are difficult to predict or control yet can have huge impacts. To tackle these changes, we have begun adding innovative tools to build upon collaborative adaptive management.

First, we propose that nesting the agreed-upon management objectives using core and conditional categories could improve the flexibility of these objectives in responding to climate and other changes.

Second, we are using scenario planning to help anticipate and prepare for unpredictable and uncontrollable changes.

These additional tools will help collaborative adaptive management efforts incorporate the uncertainty of rapid, external, and uncontrollable changes into planning efforts. Combined, these tools—collaboration, adaptive management, and scenario planning—allow land managers and stakeholders to more fully address the range of complexity that faces public lands.

Key words: Implementing adaptive management; climate adaptation; collaboration; public lands management; biological planning; scenario planning; nested objectives; ecological monitoring; desert Southwest; Bureau of Land Management

Cienega Watershed: Some Collaborative Efforts

Heritage Technical Team 2010, State of the Watershed 2011, Science on the Sonoita Plain 2012