Power, Learning, and Institutions in Early Stages of an Adaptive Management Collaboration

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ABSTRACT

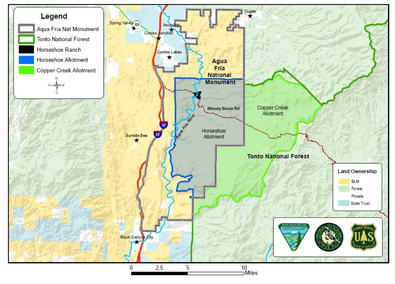
Collaborative management techniques are emerging to address complex socio-ecological problems that cut across boundaries. One such approach is adaptive co-management which emphasizes learning-by-doing and broad stakeholder participation. This paper presents an institutional analysis of an emerging co-management case in Arizona. Three government agencies and multiple non-government stakeholders agreed to develop a coordinated resource management plan for two grazing allotments (70,000 acres) north of Phoenix. Stakeholder interactions were documented throughout first phase of the collaboration (establishment, stakeholder engagement, and goal setting) in order to analyze how institutional rigidity, power, and learning influence the process. Cooperation, learning, and power play important roles in any team setting. These insights may be applied to other collaborations working to address multifaceted problems in social-ecological systems.

THE CASE AND INSTITUTIONAL ARENA

In June 2011 three government agencies and two NGOs formed a new configuration to co-manage a small area of land.

Core Team:

Organization/Agency	Type
AZ Game and Fish Dept	State Agency
Bureau of Land Mgmt	Federal Agency
The Nature Conservancy	Conservation NGO
Southwest Decision Resources	Facilitation
US Forest Service	Federal Agency



Goal: Develop a coordinated resource management plan (CRMP) for managing two allotments totaling 70,000 acres in the Agua Fria National Monument: Copper Creek (USFS) and Horseshoe (BLM), using adaptive management and broad stakeholder participation.

Institutional Arena: Existing requirements define the institutional arena in which the CRMP process can develop.

Agency	Year	Side Board (Institution or Rule)	Specific Requirements
BLM	2000	Proclamation of the Agua Fria National Monument	Maintain grazing
	2010	Resource Management Plan	Maintain grazing
	2011	National Landscape Conservation System	Youth and Community Engagement
AGFD	2007	Arizona Revised Statues - Title 17 Definitions of Authority	Wildlife management
	2010	National Fish and Wildlife "Bring Back the Natives" Grant	Complete CRMP Manage Gila Chub Restore Silver Creek Watershed
USFS	1985	Forest Plan	Maintain grazing

UNIFYING OBJECTIVES

Objectives: Guided by existing institutions, the convening agencies signed a Memorandum of Understanding to solidify commitment and outline four broad objectives prior to non-state stakeholder engagement:

	Objectives
1	Protect native fishes and their habitats, including designated critical habitat for the Gila chub, an endangered native fish species.
2	Manage native grassland and scrubland communities which are the essential habitats for jeopardized grassland bird communities, pronghorn and other wildlife.
3	Conserve terrestrial and emergent riparian habitat communities which serve as the foundation for numerous species of wildlife such as Neotropical Migratory Birds.
4	Maintain the tradition of ranching and livestock grazing as a historically admired utilization of these lands and a contributor to local economies.
	Note: These allotments are also home to rich cultural resources and outdoor recreation activities that will be considered when selecting preliminary projects to implement.

Though non-agency stakeholders did not have a say in drafting these, the objectives are broad which allows flexibility and stakeholder participation at the project-level.

POWER AND LEARNING DEFINITIONS

Knowledge and power-sharing dynamics unfold between actors in this predefined decision space.

Power: Imbalances stem from unequal access to *resources* such as time, technology, money, information (Wondolleck and Yaffee 2000, Waddell 2000, Ansell and Gash 2008, Heuer 2010) which influence the ability to force someone to do what you want (York and Schoon 2011 via Dahl 1957).

Learning: In ACM, learning takes places when strategies are assessed and adjusted based on new evidence (Folke et al., 2002). This may occur when actors connect information between social and environmental systems, synthesize diverse knowledge, and reflexively evaluate activities (Plummer and Fitzgibbon, 2007). This is done via intentional mechanisms to capture and utilize diverse knowledge and new evidence (Armitage, 2007).

METHODS

This case is for a non-thesis Sustainability project. I will use institutional analysis to unpack the governance structure and actor network within my case, and analyze interactions between them (Ostrom, 2005; Imperial, 1999).

Qualitative methods: observation, interviews, and two stakeholder workshops led by agencies.

Analysis: Interviews will be coded using MAXQDA software to identify themes related to adaptive co-management, learning, and power.

PRELIMINARY INSIGHTS

- Institutional Arena: Agency requirements are the most rigid institutions at play in the early stages. Also, individuals with decision-making authority are in meetings, not just supporting the collaborative. This allows the most flexibility in decision-making and cuts down on transaction costs of getting approval.
- Resources: Temporal resources appear to be the most important resource in early phases of ACM to allow appropriate time for information synthesis, stakeholder inclusion, and co-planning. Those with more time have greatest influence on development of collaborative process, such as deciding level of stakeholder involvement. Expertise and financial resources become more important in the later phases (ex. monitoring).
- Facilitation: If the facilitator controls information flow, knowledge-sharing and learning are more evenly distributed between all parties (Webster, 1995). This has not yet happened. Conflict resolution is also important to keep momentum moving forward in early stages.
- Mechanism for Adaptive Learning: The core convening group must build in mechanisms to capture and loop new information back into the process, though best practices for executing this have not been identified in the literature. This is an area of uncertainty expressed by multiple core stakeholders.
- Institutionalize Collaboration: In order to structure adaptive management during implementation stage, collaboration will need to be institutionalized by incorporating increased resource needs (time, staff, monitoring) into agency job descriptions and annual reviews, creating a coordinator position or independent NGO to facilitate the process, mechanizing learning and information synthesis, and establishing a stable funding base that is resilient to political shifts in government policy.

NEXT STEPS

1. Complete interviews with non-agency stakeholders
2. Code data – MAXQDA
3. Report for agencies and The Nature Conservancy
4. Journal article – publication TBD (suggestions welcome)

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