



INTERMOUNTAIN WEST
JOINT VENTURE

INTERMOUNTAIN INSIGHTS:

Inspiring Conservation Action Through Science

A CASE STUDY OF BI-STATE PEOPLE AND SAGE GROUSE



INTRODUCTION

As pressures on at-risk species mount, finding ways to balance societal and ecological needs is an increasingly urgent conservation priority. Conservation scholars suggest the **social-ecological systems (SES) approach** as a framework for navigating conservation tradeoffs. Thankfully, there are now a few real-world examples of how to apply the framework.

Research led by the Intermountain West Joint Venture examines how a successful conservation collaborative known as the Bi-State Collaborative used the SES approach to prevent Endangered Species Act (ESA) listing of Greater Sage-grouse in California and Nevada. Three main ingredients for conservation success emerged.

First, while the threat of a sage grouse ESA listing provided an initial driver for conservation, the Bi-State Collaborative's motivations evolved into greater concern for the overall sagebrush ecosystem. This means that rather than focusing on their individual needs or differences, collaborative members championed a common challenge. Second, diverse, local partnerships helped the collaborative function on multiple scales, but there were also essential, galvanizing individuals that ensured that the group's efforts were complementary and coordinated. Finally, including

local knowledge in a science-based adaptive management plan created diverse buy-in to sagebrush ecosystem conservation actions, and helped prevent an ESA listing.

KEY TERM: SOCIAL-ECOLOGICAL SYSTEMS (SES) APPROACH

- Addresses conserving a system at multiple scales in time and space;
- Employs systems thinking and is continuously adapting; and,
- Seeks to enhance system resilience or the capacity to endure disturbance while retaining critical system structures, processes, and feedbacks.

While no single case study can provide an exact formula for conservation success, this is a practical example of how the SES approach can help groups navigate tradeoffs between ecological and societal needs.

A FOUNDATION FOR LASTING RECOVERY

From wolves, to spotted owls, there are many stories of conflict related to at-risk species. Examples of groups successfully balancing social and ecological goals to reach conservation consensus can be rare, but they do exist. By recognizing their methods and achievements, they can serve as models to help others across the country.

The Intermountain West Joint Venture's Assistant Coordinator, Ali Duvall, saw an opportunity to help highlight these effective community-based endeavors by studying how a long-standing conservation collaborative was a key component that resulted in preventing an Endangered Species Act (ESA) listing of sage grouse in California and Nevada. With the collaboration of Alex Metcalf of the W.A. Franke College of Forestry and Conservation at the University of Montana and Peter Coates of the Western Ecological Research Center of the USGS, the three teamed up on an opportunity to understand the human dimensions of this high-profile flagship species.



“When we talk about the recipe for proactive conservation for at-risk species we’re always asking, ‘What does that look like, what are the ingredients?’” said Ali Duvall, lead author on the Rangeland Ecology and Management paper, *Conserving the Greater Sage-Grouse: A Social-Ecological Systems Case Study from the California-Nevada Region* (2017). “This was a real-life example of some of the ingredients that make for success.”

The SES framework can help conservationists balance trade offs between what people want and what at-risk ecosystems need. It also has potential to help address criticism that the ESA process is reactive rather than proactive, single-species focused rather than ecosystem wide, and doesn’t encourage meaningful recovery. Yet, there are few examples of how the SES approach works on the ground.

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FORMULATING A SHARED VISION FOR A HEALTHY LANDSCAPE

Sage grouse in California and Nevada are geographically and genetically on the edge of the bird’s range. Pinyon pine and juniper encroachment into sagebrush ecosystems are their primary threat in that region. Other threats include wildfire, spreading cheatgrass, urbanization, intensive grazing, resource extraction, and recreation. Since 2002, Bi-State sage grouse, as they are informally known, have been petitioned for ESA listing several times. Although concerned for the species, many in the region feared the economic consequences of a listing for the mining, agriculture, energy, and recreation industries in Nevada.

Hoping to improve sage grouse habitat and populations, working groups began looking at landscape-level conservation and management. By 2004, several local working groups formed the first plan for Bi-State sage grouse, which was updated in 2012 and is currently in implementation. That Action Plan led to 68 habitat-based conservation projects, with more implemented since the publishing of the Duvall et al. study in early 2017. These include pinyon-juniper removal from sagebrush habitat, grazing modifications, road mitigation, and fence removal. Local partners have dedicated significant funding to ensure implementation. Managers are tracking and adapting the projects through long-term vegetation and sage grouse population monitoring.

The strength and success of the Action Plan also demonstrated to the U.S. Fish and Wildlife Service that state-level and community-based conservation efforts would be effective in preventing the continued decrease of Bi-State sage grouse populations. In April 2015, the U.S. Fish and Wildlife Service determined that Bi-State sage grouse were not warranted for ESA listing.

“It’s the type of conservation that most of us on the resource management end of things went to college hoping to do, where we’re all working together to make a difference for the community and the species on that landscape,” said Thad Heater, who entered the collaborative as a Natural Resources Conservation Service state wildlife biologist for Nevada, and now coordinates the Sage Grouse Initiative.

IDENTIFYING ESSENTIAL INGREDIENTS

To identify some of the key factors that contributed to conservation of the Bi-State sage grouse, Duvall and her collaborators interviewed 15 key stakeholders involved in working groups. Interviews were designed to capture the diversity of perspectives of those involved in the Bi-State Collaborative's conservation effort including federal agencies, state fish and wildlife agencies, county agencies, nongovernmental organizations, sportsmen, and private landowners. Responses were analyzed and evaluated to determine how their work fit into a social science framework called the social-ecological systems (SES) approach. Three overarching themes came from those interviews:

1. ENDANGERED LISTING THREAT

All interviewees in the study mentioned the ESA as the initial driver for sage grouse conservation. The potential losses of income or way of life, along with burdensome regulations that would occur with a listing, were galvanizing. But over time a shift took place among working group members as they became collectively interested in advancing sagebrush ecosystem conservation for the good of people and wildlife, developing local solutions to avoid conflict over divisive issues, and taking sustainable, cooperative conservation actions.

"Our vision morphed over time," said Steven Lewis, a University of Nevada Cooperative Extension educator who has been facilitating the Bi-State Collaborative since 2000. "When the Fish and Wildlife Service decided not to list, people really understood, 'Wow, we have given our natural resources such attention that we now can see a benefit to this and we are making difference.' So our focus shouldn't be just on sage grouse, it should be on the health and wellness of our sagebrush landscape."

The systems perspective -- looking at an entire operation in relationship to its environment -- is inherent to the SES approach. This approach permeated the Bi-State conservation efforts, the Action Plan, and seems to have become second nature or intuitive to interviewees in this study.

2. MULTI-SCALE, DIVERSE, AND LOCAL PARTNERSHIPS

Participants noted the importance of involving a variety of stakeholders committed to making the group successful. At the same time, they emphasized how certain central individuals supported that approach financially, philosophically, and technically. That took place at multiple scales, from the engagement of conservation-minded landowners, to a federal agency committing \$12 million to ensure work on private land would happen in the best areas for sage grouse. This leadership and the mindset of pooling everyone's diverse skills, resources, and expertise resulted in outcomes everyone could support.

"Regardless of state borders, people took sage grouse on as their issue since day one," said Heater. "Everybody bought into it with the attitude that it's our bird, our issue, and we're going to work together to solve it. They've continued to do that since the no-list decision."

One of the key factors in sustaining the diversity of partners and their buy-in over time was the central, galvanizing role of State Extension, who provided a dedicated, trusted, and seasoned natural resource management facilitator to coordinate the effort and provide "the glue" that helped sustain the collaborative over time.

Equitable involvement from a diversity of stakeholders contributed to several characteristics of an SES approach: commitment to inclusivity, meaningful stakeholder engagement, power sharing, building trust, and working at multiple scales.

3. BEST SCIENCE PAIRED WITH LOCAL KNOWLEDGE

Many interviewees felt it was important that the Action Plan took an adaptive approach that fused science and management. Commitments by agencies and institutional leaders to modify land use plans based on continued local input and monitoring helped bolster the resilience of the ecosystem as well as the communities inside this system. Those SES elements of adaptive governance helped achieve the "certainty of effectiveness and implementation" that the U.S. Fish and Wildlife Service required to preclude an ESA listing. This provided the authority and gravitas that their collective work would be recognized and considered.

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Local knowledge stood out as a crucial component that made the Action Plan effective. This helped the group move beyond a top-down regulatory approach that is often criticized and contentious. People expressed ownership in the plan they helped create and developed trust in their fellow work group members.

"There's always a degree of art that goes into natural resource management," said Lewis. "This is where the local landowner perspectives are very important. They act as eyes and ears necessary for the art of managing natural resources."

SES approaches to conservation must be transdisciplinary, considering the roles and interrelationships among humans and natural systems. Locally-based and -rooted relationships linked to science and policy created a trustworthy process resulting in an adaptive and resilient system.



LESSONS LEARNED

Sometimes “win-win” conservation solutions can be elusive or challenging to achieve when it comes to meeting biological and social goals at the landscape scale. However, examples do exist where communities, agencies, and other private, tribal, and public stakeholders are achieving balance from a social-ecological perspective. The Bi-State sage grouse collaborative is achieving system-wide conservation. Duvall et al.’s evaluation of this partnership model illuminates the following components that can help lead to success:



- Be proactive and create a system-wide framework before species listing or other regulatory actions are required (i.e., harness the power of local and influential stakeholders around potentially divisive conservation issues; the Action Plan);
- Develop a trustworthy process with inclusivity, meaningful stakeholder engagement, and a coordinating entity that helps to sustain the collaborative; and, create an adaptive governance approach with substantial technical and financial commitments that help to ensure the effort is durable and lasting.
- While the threat of ESA listing brought everyone to the table, the partners adopted a systems approach because they saw those elements as the best way to maintain a healthy sagebrush ecosystem.

“That’s the kind of magic that happens when people catch on to a shared vision,” said Duvall. “My hope is that this study will continue to spur collaborative action, based on science, diverse perspectives, and shared vision to address at-risk species. That’s how we can have success in addressing these massive challenges we’re facing.”



CURRENT INFORMATION

As of the printing of this article, the bi-state sage grouse status is under judicial review. The observations of this case study will be tested as partners seek to demonstrate sufficient certainty of effectiveness and partnership support into the future. For current information visit bistatesagegrouse.com.

SOURCE

Duvall, A.L., A. Metcalf, and P. Coates. 2017. [Conserving the Greater Sage-Grouse: A Social-Ecological Systems Case Study from the California-Nevada Region](#). *Rangeland Ecology & Management* 70:129-140.