

TAKING STOCK & TELLING OUR STORIES



April 30, 2018

Report on the Center for Collaborative
Conservation Research Workshop



BACKGROUND AND PURPOSE

In 2016, CSU's Center for Collaborative Conservation (CCC) created the CCC Research Working Group to leverage CSU's existing research capacity and help guide the CCC's research program. The Research Working Group identified initial research priorities and formed sub-teams to implement these priorities. In April 2018 we organized the Taking Stock and Telling Our Stories Workshop to:

- 1) assess CCC's progress in meeting its research objectives,
- 2) engage a larger group of scholars and practitioners to help CCC reflect on our current research work and identify future directions, and
- 3) develop skills and tools for telling the story of our collaborative conservation research in order to increase our impacts on both science and society.

THE CCC'S RESEARCH APPROACH

The Center for Collaborative Conservation (CCC) at Colorado State University seeks to transform conservation into a force that unites – not divides. We advance a vision of collaborative conservation guided by local knowledge, community participation and science to sustain both people and places. The CCC's research program provides conservation practitioners knowledge they can use to make collaborative conservation more effective. We do this in two ways. First, we distill key lessons from existing science about collaboration and communicate this information to policy-makers and practitioners in ready-to-use formats. Second, we work with communities and conservation practitioners to co-create new knowledge that improves how we do collaborative conservation, and helps communities solve their own problems. We call this way of doing research “transformative science with society.” Our research focuses on two main questions: 1) How does collaborative conservation work and how can we do it better? and 2) How can we transform science so it truly serves communities and practitioners doing conservation on the ground?

WORKSHOP PROCESS AND PARTICIPANTS

The morning session of the workshop provided participants with short summaries of eight CCC research initiatives and projects, in two sets of 4 presentations each (see Appendix I for presentations). Following each set of presentations, participants broke into small groups and each group provided feedback on each research project/presentation. After lunch, participants discussed future directions for research and collaboration/story-telling, building on the CCC's current research work. In each of these areas, future initiatives were categorized as “easy to implement,” “high impact,” and “innovative” (Tables 1 and 2). The theme of story-telling was woven throughout the day. Participants introduced themselves with a 6-word story, and heard from communications and story-telling experts professor Emeritus John Calderazzo, journalist Josh Zaffos, and National Park Service Climate Change Communications lead Larry Perez. The workshop was organized by CCC Research Director María Fernández-Giménez with assistance from CCC staff and was facilitated by Meena Balbopal (Biology) Biology, John Calderazzo (CSU Professor Emeritus, English), and Amanda Cravens (US Geological Survey). Participants included members of the CCC Research Working Group (RWG): Tony Cheng, María Fernández-Giménez, Kathleen Galvin, Ch'aska Huayhuaca, Kelly Jones, Julia Klein, Liba Pejchar, and Robin Reid (CCC RWG member Corrie Knapp was not able to attend), who presented CCC's research in progress. In addition to the working group members and facilitators, participants included 2 communications specialists, 5 conservation practitioners, 10 researchers from CSU and other research institutions (e.g. US Forest Service, USDA Agricultural Research Service), and 2 other CCC staff (see

Appendix II for complete list of participants). Researchers included several graduate students and post-doctoral fellows, most of whom are current or past CCC Fellows.

TAKING STOCK: RESEARCH PROGRESS, FEEDBACK AND EMERGING OR POTENTIAL STORIES

In summer 2016, the CCC Research Working Group identified the following research priorities:

- 1) Synthesize existing research knowledge on collaborative conservation through systematic and thematic reviews,
- 2) Harvest lessons learned from the practice of collaborative conservation via empirical research, including both in-depth case studies and large sample studies, and
- 3) Advance a new model of research with and for communities that leads to conservation action and improves local people's lives.

At the Taking Stock and Telling Our Stories Workshop, CCC Research Working Group members presented the following presentations on research in progress, each of which addresses one or more of these three priorities. Below we briefly summarize the main “take-aways” from each project and presentation, identify the priority that it addresses, highlight key points of feedback from workshop participants, and identify potential emerging story lines.

Transformative Science with Society: CCC's Vision

Robin Reid, CCC and Ecosystem Science and Sustainability

This presentation advanced CCC's vision of science that incorporates multiple ways of knowing, engages non-(western) scientists in every stage of the research process, and uses the resulting knowledge and relationships to create desired transformations in human-environment systems, namely lasting conservation that benefits both people and ecosystems.

Priority 3

Feedback:

Feedback focused on the terminology and meaning of transformation. What is being transformed, science or society? Is research driving transitions or empowering people? Important focus on who is participating, when and how. Is this approach always needed? Does everyone need to be at the table all the time? How do we support continuous engagement, especially when academic researchers have so many other demands and engagement is undervalued? Definitions of other key terms including community, collaboration and conservation should also be considered, and how different participants or stakeholders understand these terms.

Story Ideas:

- Leap forward moments: new constitution in Kenya, new law (potentially) in Mongolia, there is the drama of speed and action in these new developments
- Who has a legitimate claim to speak and act?
- Many other stories to tell, including animal numbers near and not near places where people live

The Long View: Science, Society and Action

Corrie Knapp, Robin Reid, María Fernández-Giménez, Julia Klein, Kathleen Galvin

Motivated by growing interest in “transdisciplinary” research, this thematic review brings together many parallel approaches to merging “knowing” and “doing”, with the aim of placing current research trends in a broader historical context and showing how these approaches can inform one another. Key themes that emerged from this review include: the need to attend to and document the process of learning; the importance of communication (and communication planning and competency); the benefits and roles of different ways of knowing; the challenges and importance of managing power dynamics in the research process; navigating complexity; the limits or alternatives to generalization.

Priorities 1 and 3

Feedback Summary:

Terminology was also a major theme of feedback on this presentation, as well as caution about labelling people and placing them in categories that may reinforce power differences and false dichotomies. Although some did not like the first graph, in particular, others thought that the graphics helped visualize gaps. A systematic review could also identify gaps. Suggestion that it would be good to have two versions, one (with terminology) for an academic audience and one without for other stakeholders.

Story Ideas:

- Examples of indigenous science turning into meaningful action
- Forest communities using local plants for medicine—TB and malaria
- Giving voice to overlooked communities who really want to be heard

Systematic Review of Collaborative Conservation in the US

Kate Wilkins and Liba Pejchar, Dept of Fish, Wildlife and Conservation Biology

This systemic review describes the characteristics, goals, actions and outcomes collaborative conservation groups in the US based on published research. Preliminary findings show that collaborative conservation groups have been researched in all 50 states and the most frequent participants are NGOs, federal and state government representatives.

Priority 1

Feedback:

Participants pointed out that the focus on published literature may bias the groups identified toward those that researchers have studied (rather than the true abundance and distribution of groups across the US), and potentially more “successful” groups. Future analyses could include distinguishing between smaller/local and larger/national NGOs and looking at author affiliations to see which institutions are foci for this research. The systematic review could be paired with the Conservation Atlas for a more in-depth view. Consider how this review can help CC groups draw on lessons learned to be successful, what policy implications may be, and the potential for developing an interactive map that could serve as a resource for CC groups to find others.

Story Ideas:

- Moving from what is the matter to what matters most
- In reviewing CC projects in the US, what happens when a sudden change occurs in a specific case, such as the fracking boom (and bust) in N. Dakota?
- The journey a researcher goes through to crunch big data and tell a story with it (also applies to Collaborative Conservation Atlas of Colorado project)

Collaborative Conservation Atlas of Colorado

Ch'aska Huayhuaca, CCC and Graduate Degree Program in Ecology

This study investigates the status of collaborative conservation in Colorado by creating a spatial inventory and map of collaborative conservation groups in the state, and conducting an in-depth comparative case study analysis of a subset (n=123) of the groups. The Atlas will serve as a resource for collaborative groups and their partners across the state, while the analysis explores how initial conditions that led to group formation, group membership and shared theory of change are interrelated. Preliminary analysis revealed that about half of the groups (46%) are motivated by policy changes, a little more than a third (37%) by conflicting or competing values and 15% are spin-offs of existing collaboratives.

Priority 2

Feedback

Participants saw opportunities to combine this work with the systematic review, as well as many further analyses and follow-on studies. For example, why are groups not emerging in some areas (the geography of collaboration) and in-depth ethnographic analysis of a few cases. Suggestions for story telling include collaborating with the CC groups to tell their stories, which the Atlas project has already begun to do.

Story Ideas:

- The natural story in moving from giant potential sample size to smaller and smaller and more manageable data
- What benefits might come from similar looks at other states?
- Big role of federal agencies, and policy threats and initiatives, in the formation of these groups
- Something interesting about Tamarisk—story potential here
- Drama of working in scales big and small—five river miles vs. 700,000 square miles

African Community-based Conservation: From Kenya to the Continent

Kathleen Galvin, Anthropology

Dr. Galvin reported on two related studies—one large-sample empirical study of community wildlife conservancies in Kenya and the other a systematic review of collaborative conservation across Africa. The number of community conservancies in Kenya has grown dramatically over the past decade leading to significant ecological and social benefits, as well as increased challenges in some areas. Conservancies have led to increased land tenure security for community members, but increased wildlife populations do not necessarily translate into improved livelihoods. In the systematic review, 45 studies of community-based conservation in sub-Saharan Africa reported on social outcomes, with more negative social outcomes reported than positive outcomes. Sixteen cases reported on ecological outcomes, with the majority showing positive ecological outcomes (only 2 showed negative effects). Monetary and non-monetary incentives were necessary

but not sufficient to achieve positive outcomes. Devolution of rights to local communities was significantly associated with positive outcomes.

Priorities 1, 2 and 3

Feedback:

Key messages that participants discussed from this presentation included that community-based research is a process rather than an outcome and researchers need to be flexible. Most conservancies rarely publish their outcomes. Paying attention to diverse world views is most successful.

Story Ideas:

- Running against conventional thinking (“stranger comes to town” story), more animals in a place are not necessarily better for the animals or the people nearby
- Wow statements: elephants like maize, lions love cows
- Impact of new roads (stranger comes to town...)
- Coke wants clean water in Kenya—what are the consequences?
- Many potential stories about the roles of women

Community-based Rangeland Management in Mongolia

María Fernández-Giménez, Robin Reid, et. al.

The Mongolian Rangelands and Resilience (MOR2) project compared social, ecological and livelihood outcomes of 77 formally organized community-based rangeland management (CBRM) groups with 65 traditional herder communities. Formal CBRM had clear social benefits but livelihood and ecological outcomes are harder or take longer to reach. Technical and organizational support are key investments (not just money), and access to information, strong local leadership, and opportunities for knowledge exchange positively influenced social capital, cooperation and behavior change. The MOR2 project engaged diverse stakeholders in defining the research issues, questions and study design, and returned results to most of the 36 study communities located across 4 ecological zones. Long-term research-practice partnerships with communities are key to implementing transformative science.

Priorities 2 and 3

Feedback:

Discussion focused on how to provide research back to communities when they are so numerous and spread out. This presentation highlighted the tension between the incentive for researchers to publish high-impact science vs. to seek a broader social impact from their science. How did the funding source and requirements influence how the project was carried out, the metrics used, etc. How may cognitive bias have affected participants responses and researchers interpretations? Is the science at the right time-scale if there are lag effects in observing CC outcomes?

Story Ideas:

- One of the world’s largest unbroken rangelands now under threat of being broken
- Crazy animal population bumps: big growth in numbers, big die offs—why? What can be done to stop this if that’s needed, or to adapt?

- Photovoice project and its aftermath—what was learned from this, what behavior change in local folks?
- Using stories to communicate community-based social outcomes, which are otherwise hard to measure with numbers.

What is the Legacy? The Role of the Ford Foundation's Community-based Collaborative Forestry Program

Kathie Mattor, Tony Cheng, María Fernández-Giménez

In 2000 the Ford Foundation supported 13 community forestry groups in the US and in 2004 invited CSU faculty Cheng and Fernández-Giménez to lead a research team to study the impacts of this investment. Over 10 years later, several groups approached Cheng again to see if CSU could investigate the impacts of their groups 10 years after the end of the Ford funding. Working with 4 of the 13 groups the team identified key research questions and methods, and ultimately implemented the study with 3 groups, all located in rural Western counties with large public land holdings. This qualitative and participatory research study highlighted how the Ford investment fostered risk-taking and organizational learning, while also supporting the formation of cross-group networks, and long-term researcher-practitioner partnerships built on trust and transparency.

Priorities 2 and 3

Feedback:

This presentation inspired discussion about the importance of trust, leadership and the virtuous cycle of collaborative learning, risk-taking, and trust-building. Further research opportunities include follow-up on the community-based organizations that failed. Participants saw story-telling potentials in this work, such as, rural America is different than what people think, and leadership must be shared among the group.

Story Ideas:

- When people tell stories you can see yourself in their narratives
- Good and continued funding helped local folks not have to reinvent the wheel for each project. Important to move with a way and a state of mind forward, not just funding each time.
- Role of crisis (natural story and drama here) in getting folks together and moving toward action
- Collaboration is a constant state of becoming—what are the implications of this very big and intriguing idea?

Considering: Collaborative Adaptive Rangeland Management (CARM)

Hailey Wilmer, María Fernández-Giménez, et al

This unusual research project turned over grazing management decisions for a 240 steer herd on 10 320-acre pastures to a diverse 11-member stakeholder group and compared the process and results to 10 paired pastures grazed by the same number of steers using the traditional approach common in the local area. Using a collaborative adaptive management process that drew on monitoring data and managers' expertise, the stakeholders made management decisions for 5 years with the overall goal of "managing the land for future generations," and specific objectives for beef production, wildlife and rangeland vegetation. Social scientists documented the process and social outcomes of CARM and ecologists monitored the ecological outcomes.

Figure 1. A word cloud of text from all feedback documents on research presentations illustrates some of the prominent themes of synergies and tensions among community and research; science and people; project process and outcomes; with issues of power underlying these dynamics.

The Concept and Language of Transformative Science with Society—Questions and Critiques

Participants offered various concerns and suggestions on the presentations that focused on the process of doing research with and for communities and combining multiple knowledge systems (Transformative Science with Society (Reid) and Science and Action (Transdisciplinary Research) (Knapp, Klein et al)). Questions focused on what is being transformed (science or society or both), by whom and to what end. The importance of engaging diverse world views and ways of knowing was affirmed multiple times by participants. However, the way in which the Science and Action presentation categorized types of people and approaches was problematic for some, who pointed out that the axes on the graphs tended to reinforce false dichotomies between scientists and non-scientists, and did not acknowledge indigenous science. The “Nature of Science” was proposed as an alternative framing to the scientific method. Participants also requested clarity on the definitions of community, collaboration and conservation, and pointed out the need to acknowledge or include multiple perspectives on the meanings of these key concepts.

Challenges of Doing Transformative Science with Society—Working with and for Communities to Create Real Impacts While also Publishing Good Science

Much discussion revolved around the broad theme of the challenges and tensions of doing transformative science with society or participatory/community-based research with collaborative conservation organizations. The major themes that emerged here included: 1) The importance of issue framing/problem definition early on and the involvement of diverse stakeholders in this process. 2) When, how and at what scale should researchers engage with communities, what are the barriers to (continuous) engagement, and what are the incentives for academic researchers to do so? 3) What are the metrics of “success,” who determines them (researchers, communities), and how can we balance generalizability with context-specific metrics? What are the trade-offs or synergies between social/livelihood and ecological/conservation outcomes? 4) Is it feasible to achieve both scientific quality/impact and “broader” social impacts or is there an inevitable trade-off here, too? 5) Community-based/participatory research is as much about the process as the outcomes. The processes of social learning and knowledge co-production are outcomes, that lead to a virtuous cycle of learning and trust-building (as described in the presentation by Cheng and Mattor).

Humanizing Science, the Land Grant Mission, and Advice for Young Scholars

Discussions about how to do transformative science/participatory research led into conversations about the incentives and rewards for researchers to do this. For junior scholars, like many CCC Fellows at the workshop, seeking both scientific and social/conservation impacts simultaneously appears daunting and exhausting. There was a sense that many academic researchers, and perhaps the institution itself, do not fully grasp the 3-part Land Grant Mission of education, research and engagement/extension. Thus, they may not perceive how Transformative Science with Society is an approach ideally suited to pursuing all three “legs” of the mission in a seamlessly integrated fashion that can benefit researchers, communities and the land grant institution. Participants discussed that when researchers engage with communities through outreach activities, or through participatory research like the Transformative Science with Society approach, this helps to “humanize” scientists in the public eye, building relationships of mutual respect and trust with diverse community members. This respect and trust in individual scientists may ultimately lead to greater credibility and legitimacy for the

academic institution and the knowledge it produces, and greater likelihood that this knowledge will lead to actions that help communities and ecosystems thrive.

Questions and Opportunities for Future Research and Communication on Collaborative Conservation

Some of the specific suggestions for further research that emerged from the feedback sessions included the following. 1) Link research conducted at different scales—systematic reviews (e.g. Wilkens and Pejchar), large-sample empirical studies (e.g. Huayhuaca), and in-depth place-based case studies (e.g. Cheng and Mattor, Wilmer). The case studies, and specifically the stories that illustrate them, provide context and a “hook” to engage people in the more quantitative large-sample studies and reviews. For example, if you tell a compelling story of how learning led to trust which catalyzed conservation action that repaired landscapes and improved livelihoods, then it sets you up to ask—but how often does this happen across the country? What do we know about the conditions and practices that foster success and can help other communities succeed? CCC’s larger empirical studies and systematic reviews are poised to answer these questions. 2) What do we know about how the scale of collaborative conservation initiatives relates to their outcomes? For example, how to outcomes differ between small vs. large groups and groups that focus on small areas vs. vast territories? 3) What can we learn from “failed” collaboration? 4) Importance of maintaining a critical perspective and recognizing the trade-offs among social/livelihood and ecological/conservation outcomes. Who values which outcomes and how do these values and the power differentials among participants influence which outcomes are prioritized in collaborative conservation and in research?

Role of Funding and Funders in Collaborative Conservation and Research

Several presentations touched on the role of funding or funders in driving research and/or collaborative conservation approaches. For example, community-based rangeland management (CBRM) in Mongolia (Fernandez-Gimenez) came about largely because of donor investments that funded formation of formal CBRM groups, and the MOR2 research project was made possible by a large NSF grant, which also shaped how the researchers interacted with communities and research partners. By the same token, the Ford Foundation’s Community-based Forestry program had a major impact on the evolution of several longstanding collaborative conservation groups in the western US, and also on the long-term participatory research relationship that developed between CSU researchers and these groups (Cheng and Mattor).

TELLING OUR STORIES

Story lines

Communications experts at the workshop both harvested story-telling ideas (see the section on Taking Stock), and shared thoughts on principles and considerations on story telling. John Calderazzo outlined three archetypal story lines into which most stories fall: 1) a stranger comes to town, 2) wow!, and 3) the hero’s journey. The “stranger comes to town” narrative might be applied to collaborative conservation in several ways. For example, collaboration could be the “stranger.” Or, an environmental crisis might be the “stranger” and collaboration the response. The “stranger” could be the scientist/researcher working in a community or a social scientist in a natural resource agency. Examples of the Wow! narrative from the group included Michael Gavin’s example “7,000 languages. Why? We don’t know.” The hero’s journey narrative includes key moments such as the call to action, search for assistance, the trial or hardship, and treasure or gift. According to John, audiences (listeners or readers) are “hard wired” to resonate with this story.

Audiences and Opportunities for Story-telling

Taking Stock & Telling Our Stories

Story-telling can be used to communicate with impact in a variety of contexts and to a range of different audiences. Some key audiences for the CCC and other collaborative conservation researchers may include 1) local collaborators/stakeholders, 2) granting/funding agencies, 3) researchers, 4) managers/practitioners, 5) general public (e.g. Rotary, community groups), 6) policy-makers, and 7) journalists.

Journalist and educator Josh Zaffos shared some of his insights on pitching stories to journalists and editors. Editors care about outcomes and it can be difficult to convince them that the journey is the story. Potential story-worthy ideas and story-telling tips from Josh include the following. 1) Failure. “If it fails, it sails.” 2) Put a “face” on something. Give a concrete tangible example, describe a specific place. 3) Identify big theme. For example, the future of rural America. 4) The superlative. The biggest, smallest, first, last, etc. 5) A place can be a character. For example, “desolate grasslands” are great characters in themselves. Elicit a sense of wonder and singularity.

SYNTHESIS DISCUSSION: FUTURE DIRECTIONS FOR RESEARCH, COLLABORATION & STORY-TELLING

In a synthesis discussion, participants were asked to discuss in groups and identify future directions and opportunities for CCC research, collaboration and story-telling that were 1) easy to implement, 2) high impact, or 3) innovative. Each group offered one priority in each of these categories, which are presented in the tables below.

Table 1. Research directions

Easy to Implement	High Impact	Innovative
Contrast systematic review and collaborative atlas results	Synthesize of outcomes across CCC studies (Mongolia, Kenya, USA)	Identify best practices for interdisciplinary learning
Assess when different levels of collaboration are more or less appropriate (is longevity always a good thing?)	Compare across many cases to examine process dynamics	Research CC failures
Use existing syntheses, reviews etc. to predict continuous engagement	Follow up on (exploring) gaps in CC research	Develop mechanisms for long-term research initiatives
	Investigate role of gender in CBCC (Community-based Collaborative Conservation)	Test the scalability and transferability of CARM (Collaborative Adaptive Rangeland Management)

Table 2. Future directions for collaboration and story-telling

Easy to Implement	High Impact	Innovative
Collaborative framing of research	Outreach to policy makers (from research)	Share experiences and best practices for collaborative research planning

<p>CC Message: Where Hope Finds a Home</p>	<p>Create CBCC Knowledge network</p>	<p>Science of team science role, including encouraging new metrics to measure impact</p>
<p>Researchers collaborate with practitioners to tell their stories through different media</p>	<p>Funding for program, few strings attached</p>	<p>Researchers invite community members to create their own community-based programs with which researchers can collaborate</p>
	<p>Thoughtfully integrate multiple world views into community based projects</p>	

Appendix I List of Participants

Facilitators indicated with an *

Name	Organization
Rich Alper	CSU Center for Collaborative Conservation
Meena Balgopal*	CSU Biology
Adam Beh	Bird Conservancy of the Rockies
Joel Berger	CSU Fish, Wildlife and Conservation Biology
Cini Brown	CSU Bioagricultural Science and Pest Management
John Calderazzo*	CSU English, Emeritus
Patty Champ	US Forest Service Research
Tony Cheng	CSU Forest & Rangeland Stewardship
Amanda Cravens*	US Geological Survey Social Science Unit
Aida Cuni-Sanchez	CSU Ecosystem Science & Sustainability
Maria Fernandez-Gimenez	CSU CCC and Dept. of Forest & Rangeland Stewardship
Kathy Galvin	CSU Anthropology
Michael Gavin	CSU Human Dimensions of Natural Resources
Rebecca Gruby	CSU Human Dimensions of Natural Resources
Ch'aska Huayhuaca	CSU Center for Collaborative Conservation
Mary Huffman	The Nature Conservancy
Kevin Jablonski	CSU Forest & Rangeland Stewardship
Kelly Jones	CSU Human Dimensions of Natural Resources
Julia Klein	CSU Ecosystem Science & Sustainability
Kathie Mattor	CSU Forest & Rangeland Stewardship
Chris Pague	The Nature Conservancy
Liba Pejchar	CSU Fish, Wildlife and Conservation Biology
Larry Perez	National Park Service
Robin Reid	CSU Center for Collaborative Conservation
Cara Steger	CSU Ecosystem Science & Sustainability
Kate Wilkins	CSU Fish, Wildlife and Conservation Biology
Hailey Wilmer	USDA Agricultural Research Service, Northern Plains Climate Hub
Josh Zaffos	Journalist

Appendix II Powerpoint Presentations

**Transformative Science With Society:
CCC's Vision**

Center for Collaborative Conservation
Research Program Meeting
30 April 2018

Robin S. Reid (with ideas from Corrie Knapp, María Fernández-Giménez, Kathleen Galvin, Julia Klein and Tony Cheng)

Where We are Going Today

1. What does Collaborative, Transdisciplinary Science have to do with Collaborative Conservation?
2. Evolving Our Science Towards Transformation
3. What is Missing in Our Collaborative Science? And, How Can This Science have More Impact?
4. Moving Collaborative, Transdisciplinary Science Towards Transformative Science with Society

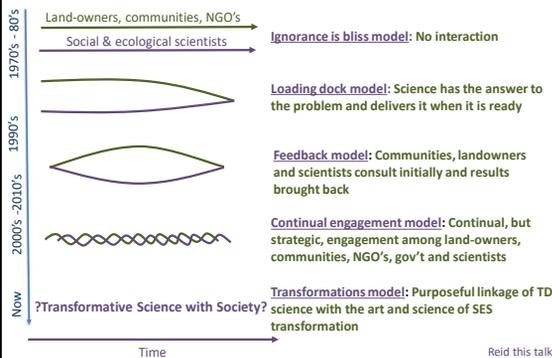
1. What does Collaborative, Transdisciplinary Science have to do with Collaborative Conservation?

- Collaborative science recognizes and respects different ways of knowing
- Collaborative science includes non-scientists in the scientific process, and is partly driven by practitioner needs
- At the CCC, we have seen, over and over, that this approach transforms the usefulness of scientists in conservation

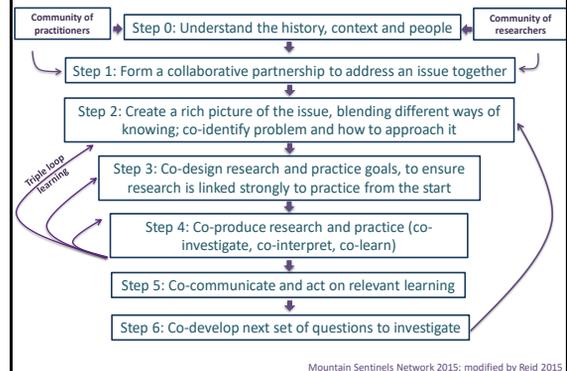
2. Evolving Our Science Towards Transformation



Evolving Our Interdisciplinary Science into Transdisciplinarity



Steps in Transdisciplinary Science



3. What is Missing in Our Current Collaborative, Transdisciplinary Science Approaches?

And, How Can This Science have More Impact?



Our Strengths and Weaknesses in Collaborative, Transdisciplinary Science So Far

<ol style="list-style-type: none"> 1. Focus on adaptation 2. Processes to engage stakeholders 3. Global casework engaging communities and other stakeholders 4. Passion for this work! 	<ol style="list-style-type: none"> 1. Integrating different knowledges 2. Understanding when social-ecological systems are at tipping points, about to transform 	<ol style="list-style-type: none"> 1. Methods and processes to catalyze & drive the transformation process 2. Strategic and practical focus on IMPACT, full engagement of actors in practice 3. Measuring impacts
Strong	+ / -	Weak

Reid this talk

Transformation and Windows of Opportunity

- Transformation creates a fundamentally new system when ecological, economic, or social / political conditions make the existing system untenable
- Transformation moves beyond adaptation, which accommodates change, to shifting the underlying structure that led to the need for adaptation
- A window of opportunity is a critical moment in time that occurs between phases in the adaptive cycle that often triggers a transformation of the system

Knapp 2017, Walker et al 2004, Olsson et al 2006

Strategically Intervening as Systems Evolve to Catalyze Transformation

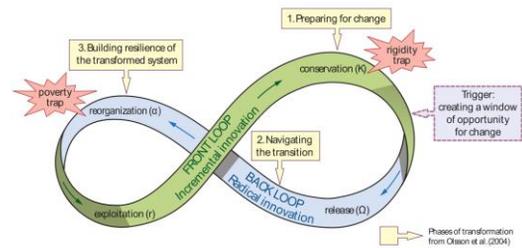
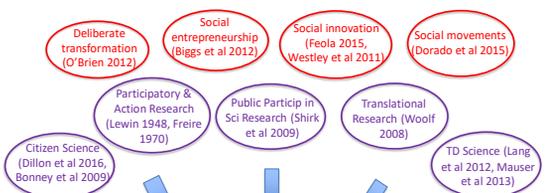


Figure from Biggs et al 2012, based on Holling et al 2002, Olsson et al 2006

4. Moving Collaborative, Transdisciplinary Science Towards Transformative Science with Society



How Do We Get There? Integrate Transformations Ideas and Practice with TD Science



Transformations Thinking and Practice

Reid this talk

The Next Evolution: Transformative Science with Society?

Collab, Trans- (& Inter-) **SES Transformations** **Public Participation in**
Disciplinary Science ↔ (Theory & Practice) ↔ Scientific Research

What is it?

- Discipline integration
- Knowledge integration
- Knowledge with action
- Knowledge co-production
- Boundary organizations bridging science & action

What is it?

- Social movements
- Social innovation
- Transformative learning
- Social, institutional entrepreneurship
- Resilience & transformations thinking

What is it?

- Citizen science
- Community science
- Participatory action res.
- Action research
- Collaborative science
- Civic science

Its power

- Disruptive
- Bridging knowledges, connecting with action
- Often hypothesis-driven

Its power

- Disruptive
- Major system change, social and ecological
- Scaling out, up and deep

Its power

- Disruptive
- Often community-driven, participatory
- Sometimes large data collection and open access

Bonney et al 2009, 2014; Bulzer et al 2010; Shirk et al 2012; Moore et al 2014; O'Brien et al 2013; Knapp & Trainor 2013; Cornell et al 2013; Dillon et al 2016; Jordan et al 2016; Westley et al 2011; Westley et al 2013

Conclusions

- Our collective sense of urgency has never been greater
- Linking TD science & practice with transformations concepts = greater impacts for our work; scaling up, out and deep
- But we must:
 - Have a much better understanding of how transformation happens, what is our theory of (social) change?
 - Focus strategically at times and places with the potential for the most impact to drive transformation farther and faster
 - Attend to power issues: social, environmental & earth justice
 - Assess the outcomes of transformations





The Long View: Science, Society & Action
 CORRINE NOEL KNAPP, ROBIN S. REID, MARIA FERNANDEZ-GIMENEZ, JULIA A. KLEIN & KATHLEEN GALVIN

Motivation



How can we transform science so it truly serves communities and practitioners doing conservation on the ground?

Motivation



- Increase in interest & funding for transdisciplinary approaches
- Critiques: lack of attention to process, power, generalizability
- History of approaches at the confluence of “knowing” & “doing”

Objectives



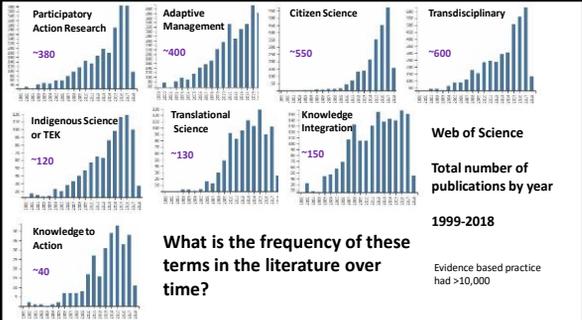
- Learn from prior efforts & how they might inform current efforts
- Attempt to re-historicize transdisciplinary research
- Transform science so it better serves conservation

Literature Review

Fields focused on creating more useful/applied science:

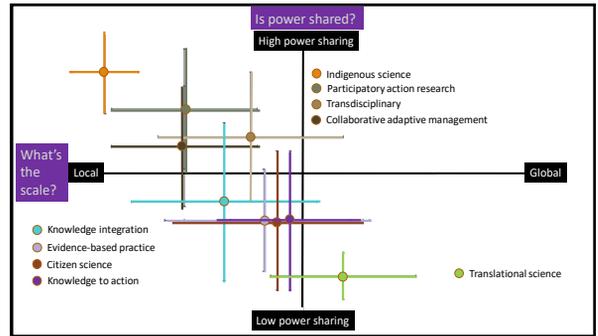
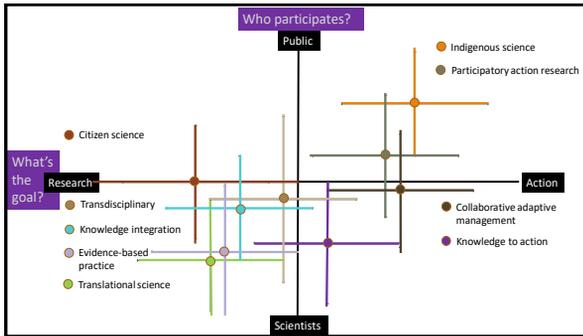
- Participatory Action Research
- Indigenous Science
- Knowledge Integration
- Translational Science
- Evidence-Based Practice
- Citizen Science
- Knowledge to Action
- Collaborative Adaptive Management
- Transdisciplinary Science

Goals
 Methods
 Outcomes
 Scales
 Who Participates



What is the frequency of these terms in the literature over time?

Web of Science
 Total number of publications by year
 1999-2018
 Evidence based practice had >10,000



Common Themes



Processes of Learning

- Process is critical, but isn't always documented or studied.

Communication

- All pay more attention to communication needs in planning and implementation

Different Ways of Knowing

- Many question how we know and who are the experts
- Many bring in other forms of knowing to complement science

Common Themes



Power

- Attention is varied, but there are some good examples (e.g. PAR)
- The closer the goal is to action, the more important to pay attention to and navigate issues of power

Navigation of Complexity

- Research occurs in dynamic and complex environments

Value of Generalization

- New approaches or interpretations of generalization

Emerging Questions



- Should science be primary?
- Is scaling up useful?
- How do we know?
- What should scientists do? What should stakeholders do?
- Is this "science"?

Conclusions



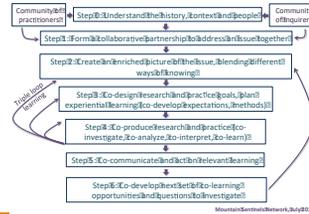
- These approaches, although grounded in science and scientific approaches, reach beyond it and suggest something new.
- There is a long history of sub-currents within science and their confluence suggests a new paradigm in how we do science for applied problem-solving.
- Current approaches, such as transdisciplinarity, have a lot to learn from previous approaches, especially in terms of effective process and power sharing.

Next Steps

From the Long View to the Wide View



Steps in Knowledge Co-Production

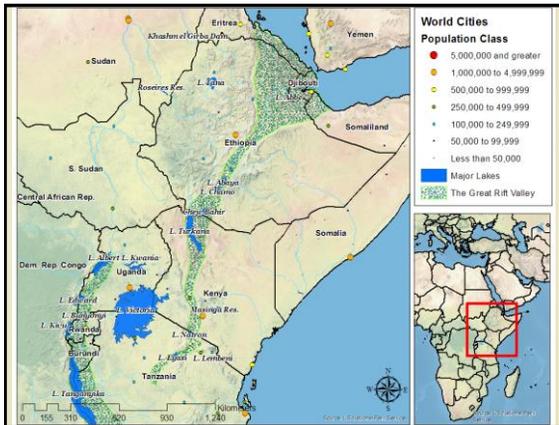


- Global Survey
- Researchers & Practitioners





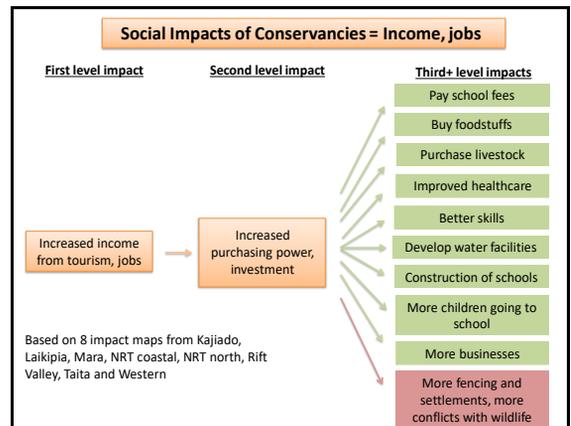
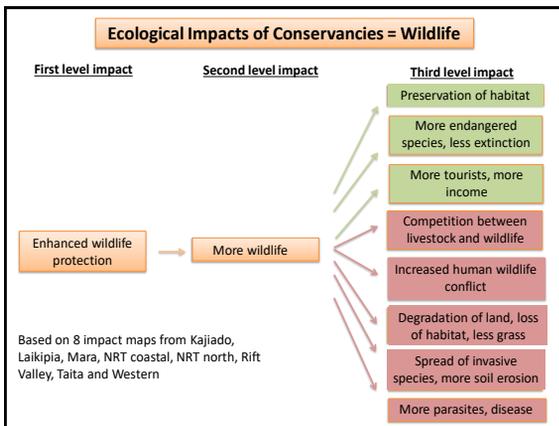
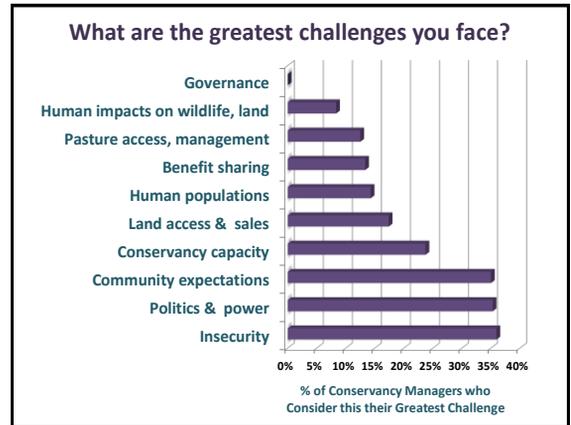
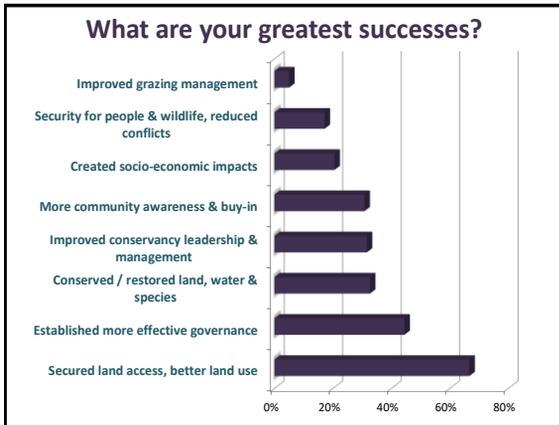
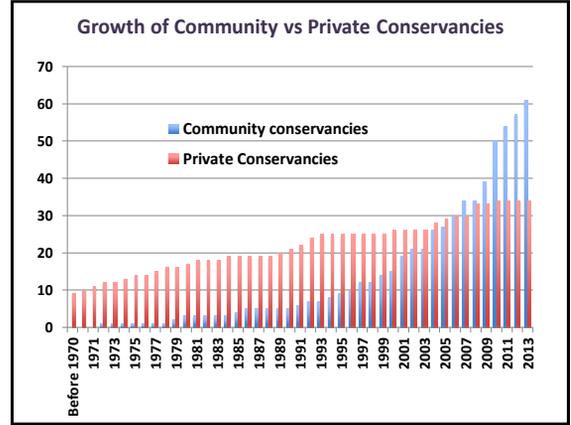
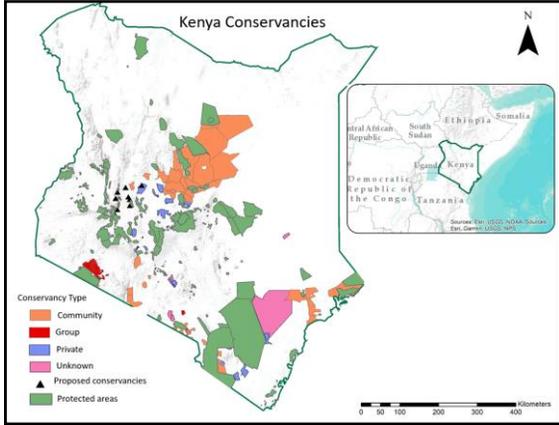
Part 1.
Kenyan Pastoral Systems and Change



Community Based Conservation

- Promoted as solutions to the large-scale changes that are occurring in savannas
- Goals: to simultaneously enhance human livelihoods and conserve biodiversity through conservation-development initiatives
- Income from both
- Usually on multiple parcels of land private
- Sometimes public-private or private-private partnerships
- Outcomes not well measured

Reid, Fernandez-Gimenez and Galvin 2014

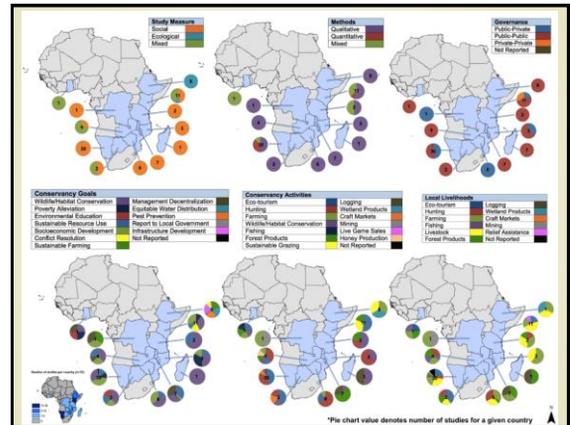
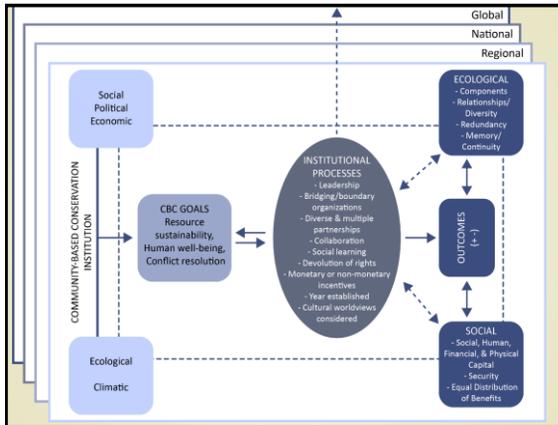


Conclusions and Implications

- Conservancy numbers have grown fast and are largely driven from the ground up
- Conservancies deliver major social and ecological outcomes
- Recently, this 'revolution' is mostly occurring in community conservancies, not private conservancies
- Importantly, conservancies deliver more land security and ownership for local communities
- More wildlife does not always mean better livelihoods
- All manager's recognize the fragility of their conservancies and are worried about security and politics, and how to sustain their work

Part 3.

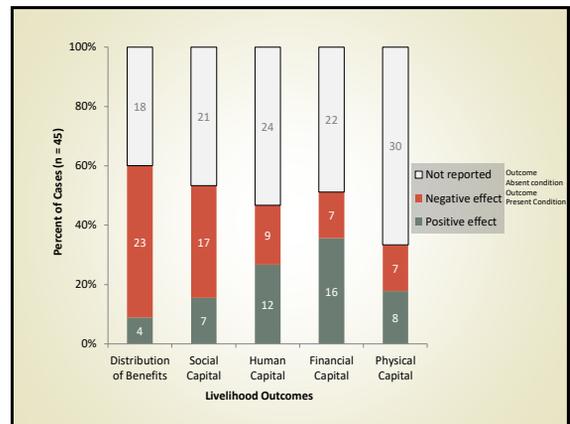
Community Based conservation in sub-Saharan Africa



Social Outcomes/Human Wellbeing Codes (+/-)

(From the Sustainable Livelihoods Framework- DFID - Ashley and Carney 1999)

Social Capital	Networks, connections, trust, shared values, leadership, etc
Human Capital	Health, education, capacity to work, gain new skills, security, etc.
Physical Capital	Infrastructure, tools, technology, water, communications, etc
Financial Capital	Savings, wages, economic diversification, etc
Distribution of Benefits	Equal distribution

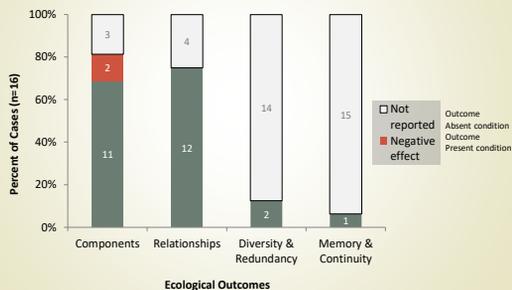


Ecological Outcomes/Natural Capital (+/-)

(Plummer and Armitage 2007; Cummings et al. 2005)

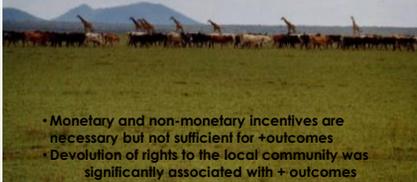
Components	All living and non-living material, eg., keystone species, vegetation communities
Relationships	Underlying processes and interaction to ecological patterns, eg biomass productivity, nutrient cycling, change in vegetation, etc
Diversity/Redundancy	Species richness and diversity
Memory/Continuity	The ways species and processes are linked through space and time; eg. Edge effects, ecosystem/habitat integrity and connectivity, patchiness, fragmentation

Effect (+/-) on Ecological Outcomes

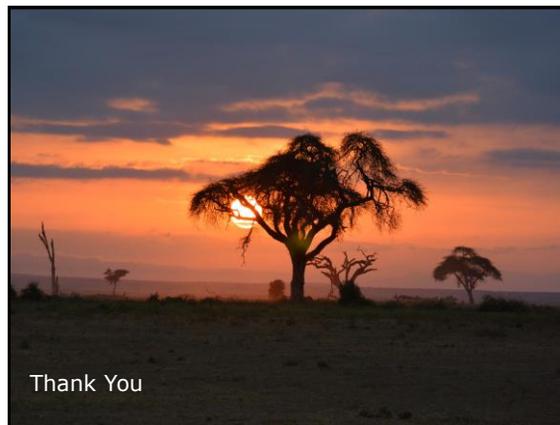


Summary

- Less than half of CBC institutions produced positive outcomes
- Most focused on social outcomes using qualitative methods
- Ecological outcomes were largely positive



- Monetary and non-monetary incentives are necessary but not sufficient for +outcomes
- Devolution of rights to the local community was significantly associated with + outcomes



Thank You

Community-based Rangeland Management in Mongolia



MARÍA E. FERNÁNDEZ-GIMÉNEZ, ROBIN REID, TUNGALAG ULAMBAYAR, CHANTSALLKHAM JAMSRANJAV AND MOR2 TEAM



Rangelands, Wildlife & Pastoral Livelihoods

Rangelands = 80% of Mongolia's land area Support important wildlife populations	Grazed by ~ 100 million sheep units
~ 3 million people, 25-30% depend on livestock for their livelihoods	Agriculture = 15% of GDP Livestock = 80% of ag. production

Rangelands & Livelihoods Threatened by

5) Trend of Annual Mean Maximum Temperature 1963-2012 (°C/decade)

Increasing Temperatures (Venable et al. 2015)

Extreme events: Harsh winters

6) Growing Livestock Populations & Unsustainable Grazing Practices

7) Boom-bust Cycle of Livestock Populations

(Fernandez-Gimenez et al. 2017)

Emergence of Formal Community-based Rangeland Management (CBRM)

Concerns about increasing degradation, poverty & vulnerability
By 2006, ~2000 "herder groups" organized with donor & NGO assistance



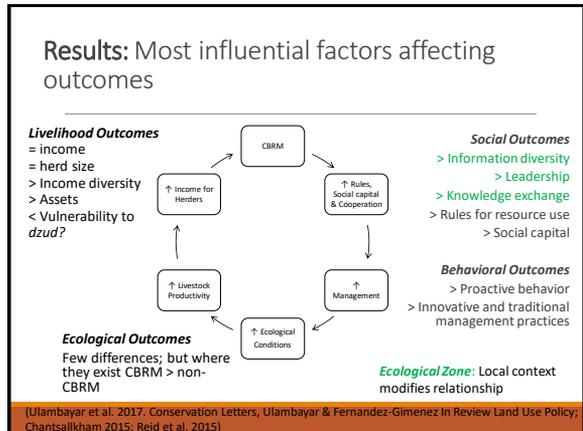
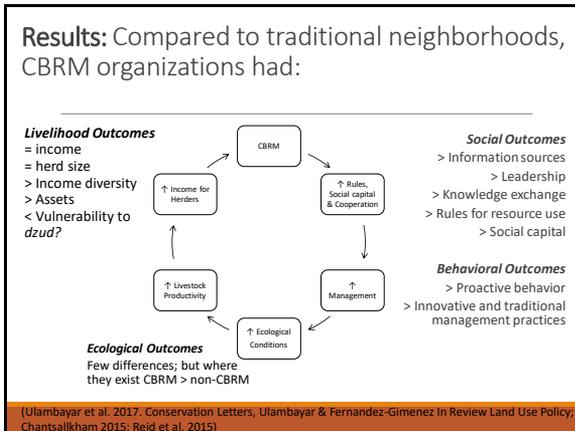
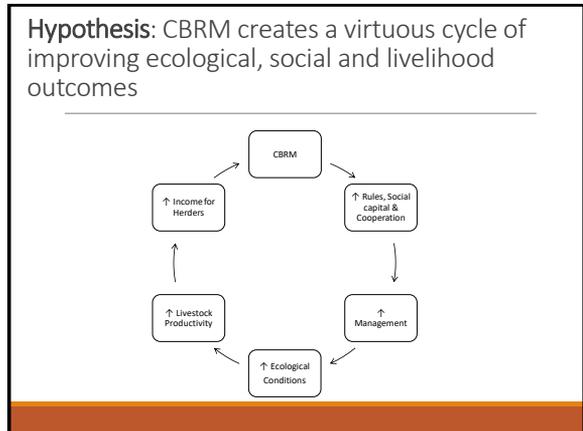
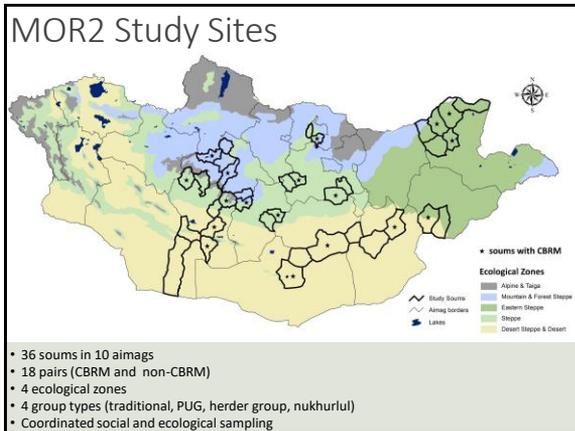
Participatory, Collaborative Design



Research Planning Workshop June 2008

MOR2 Research Questions

- 1) Does CBRM lead to better social, ecological and economic outcomes than traditional management?
- 2) What factors most strongly influence these outcomes?



Returning results to communities: regional workshops

- “Ground-truthing” findings
- Applying results to local planning & management
- Scenario Planning workshops
- Fact sheets tailored to each soum
- ~150 herders, local and regional government participants

- ### How does collaboration work and how can we do it better?
- CBRM in Mongolia has clear social benefits
 - Ecological and livelihood benefits are more difficult or take longer to achieve
 - Technical assistance and organizational support are key investments (not just \$)
 - Access to information, leadership, and knowledge exchange are critical to achieving social capital, cooperation and behavior change

How can we transform science so it serves communities doing conservation?

- Engage conservation practitioners, policy-makers and community members in issue identification and research design
- Get results back to them (communities, practitioners and policy makers)
- Cultivate long-term research—practice partnerships



MOR2 Team Summer 2011

US Partners: Colorado State University, Texas A&M University

Mongolian Partners: Research Institute of Animal Husbandry, Mongolian State University of Agriculture, Institute of Geo-ecology, Institute of Meteorology, Hydrology and Environmental Monitoring, Center for Nomadic Pastoralism Studies, Nutag Action Research Institute, Mongolian Society for Range Management

International Partners: Wildlife Conservation Society, UNDP, Swiss Agency for Development and Cooperation, World Bank



Questions?



Policy and Conservation Impacts

- National rangeland policy discourse in Mongolia
- Mercy Corps: Resilient Communities Program
- The Nature Conservancy Mongolia: Community-based Conservation program
- Sustainable Fibre Alliance: Grassland Stewardship Standards
- Communities: integrating research results into local level planning and management

Systematic Review of Collaborative Conservation in the U.S.

Kate Wilkins and Liba Pejchar



Background on systematic reviews

Most reviews on international groups



Sparse reviews of U.S. groups



Regional focus for reviews of U.S. groups



CCC Literature Review Team



Kate Wilkins, PhD candidate
Ecology
Dept. of Fish, Wildlife, and Conservation Biology



Sarah Carroll, PhD student
Ecology
Dept. of Ecosystem Science and Sustainability



Megan Jones, PhD student
Human Dimensions of Natural Resources



Sarah Walker, PhD student
Human Dimensions of Natural Resources

Objectives

- 1) Understand what drives **group formation**
- 2) Identify the **actions** that groups use to **achieve their goals**
- 3) Understand how groups measure **outcomes and success**
- 4) Characterize **location**, types of **participants**, and **funding sources**

Methods: Database Search

36 Search Terms

“community led collaboration”

“collaborative ecosystem management”

“Place based collaboration”











Methods: Title and Abstract Screening

Initial screenings on 10,518 documents:

- Duplicate deletion
- **Title screening** on 7,644 documents
 - Eliminated family, medical, and health journals

Abstract screening on 4,800 documents:

- Intercooder reliability (0.80, $p=0.46$).

Criteria:

- U.S.-based
- Focused on environmental conservation
- Peer-reviewed paper, published report, or book chapter

Screened for groups in 1,200 documents:

- Intercooder reliability (0.78, $p=0.98$)

Understanding the Context of Health for Persons With Multiple Chronic Conditions: Moving From What Is the Matter to What Matters

ABSTRACT

OBJECTIVE: ...

CONCLUSIONS: ...

KEY WORDS: ...

INTRODUCTION: ...

Methods: Criteria for Groups (1,200 papers)

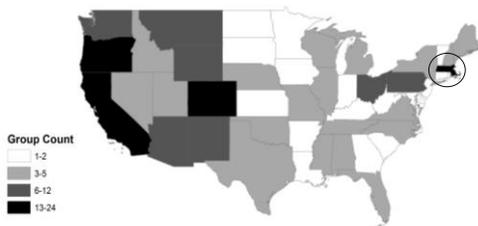
- 1) U.S.-based collaborative
- 2) Stakeholder diversity (3+ participants)
- 3) At least one non-governmental participant
- 4) Duration (2+ years)
- 5) Purpose (must be environmentally-related)
- 6) Collaborative group itself is not a public entity (no special districts)

Preliminary Results

- 16% of papers accepted (154 papers of 978)
- 82% of papers reviewed (200 more to review)
- Total groups accepted (thus far): 250 groups

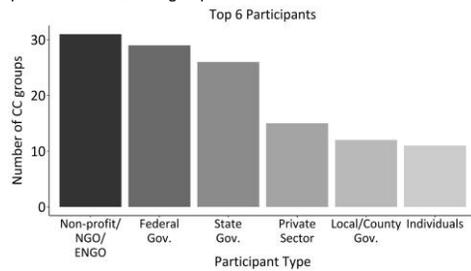
Preliminary Results: Location

- Collaborative groups in ALL 50 states!



Preliminary Results: Participants

- Participants listed for 28% of groups



Next Steps

DATA TO COLLECT

- Motivations
- Actions
- Outcomes

PRODUCTS

- Chapter in dissertation
- Submit manuscript to Conservation Biology
- Provide information for the CCC to share online
- Suggestions?

ATLAS OF COLLABORATIVE CONSERVATION

Ch'aska Huayhuaca
PhD Candidate & Program Coordinator



HOW DOES COLLABORATIVE CONSERVATION WORK? CASES FROM COLORADO

- Initial Conditions**
 - Where are they and when did they form?
 - What issues and catalysts drive formation?
 - What kinds of entities initiate collaboration?
- Membership Characteristics**
 - What kinds of entities participate as core members and as partners?
 - Composition and diversity of entities
- Shared Purpose**
 - How do they define their boundaries, and what scales to they work at?
 - What issues and targets are they addressing through their actions, and how many?
 - What is the scope of their strategies and primary strategic level?



RESEARCH QUESTIONS

- What initial conditions explain variation in membership characteristics?
- What membership characteristics explain variation in elements of shared purpose?
- What initial conditions explain variation in shared purpose?

Variables

Primary Catalyst

Primary Issue

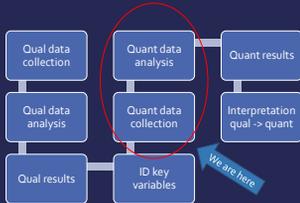
Hypothesis

Direct/ indirect policy incentives

Water quality, water supply, wildlife

MIXED METHODS, EXPLORATORY RESEARCH DESIGN

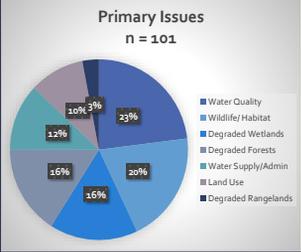
- Currently wrapping up closed-ended content analysis (Krippendorff, 2013) and quantitative data analysis (n=108)
- Plans, shared agreements when available
- Websites and presentations
- Case studies
- News articles, blogposts, references to initiatives in other plans



EARLY INSIGHTS

- 46% of initiatives are policy-driven (n=95)
- 83% water supply groups (n=12)
- 75% wildlife/habitat groups (n=20)
- 50% water quality groups (n=24)
- Conflicting/competing values was a motivating factor for 37% of initiatives (n=88)
- 92% water supply groups
- 70% land use groups (n=10)
- 55% wildlife/habitat groups
- 24% are spinoffs of other collaboratives (n=95)

Primary Issues
n = 101



Issue Category	Percentage
Water Quality	23%
Wildlife/Habitat	20%
Degraded Wetlands	16%
Degraded Forests	16%
Water Supply/Admin	12%
Land Use	10%
Degraded Rangelands	3%

THE POTENTIAL STORY



What is the Legacy?

The Role of the Ford Foundation's Support of Community-based Collaborative Forestry

Ford Foundation program

- Rise of U.S. collaborative, community-based organizations (CBOs) in the early 1990s
- In 2000, the Ford Foundation built off of its international CBO support to develop a U.S. program, The Community-Based Forestry Demonstration Project
 - To support local organizations working to
 - improve livelihoods and revive forest-reliant communities
 - restore and maintain ecosystem health
 - reduce conflict over forest management across the U.S.
 - 13 CBOs across the U.S.
 - Five year program @ \$13 million
 - Organizational capacity development and networking
 - Participatory research

Participatory research...

FORD FOUNDATION COMMUNITY-BASED FORESTRY DEMONSTRATION PROGRAM RESEARCH COMPONENT



FINAL REPORT
DECEMBER 11, 2006

Anthony S. Chang, Co-ordinator, Colorado State University
Marta Fernandez-Galiano, Co-ordinator, Colorado State University

Research Team

Heidi Bullock, University of California - Davis
Shirley Brumback, Nevada University
Cecilia Chaves, University of Vermont
Thomas C. Daniels, Utah State University
Mikaela H. DeWaal, Oregon University
Andrew P. Good, Colorado State University
Victoria Shaverston, Southern Oregon University

Part of original program design

CSU-led team in beginning of 4th year (out of 5 years)

- Ecological
- Economic
- Equity
- Social-political

What is the legacy?

- Members of three western Ford CBOs contacted Tony interested in the legacy of the Ford Project
 - How has Ford affected us and other organizations?
 - How have we adapted and evolved over the past 10 years?
 - What are the key lessons learned by all western groups?
- Rare opportunity to conduct longitudinal research
- We sought to understand
 - The outcomes of the Ford Project
 - Effects of Ford project on adaptive capacity
 - Other factors affecting adaptive capacity

Adaptive capacity

1. reflects learning and an ability to experiment and foster innovative solutions in complex social and ecological circumstances.
2. is the ability of actors, individuals and groups to prepare for, respond to, create and shape variability and change in a system.
3. is characterized by preconditions necessary to enable adaptation, both proactive and reactive, including social and physical elements, and the ability to mobilize these elements.

Walker and others 2002; Folke and others 2003; Gunderson, 2002; cited in Amilage, 2005
Chapin et al. 2009; cited in Olanis Engle 2010; Hill, 2013
Clarvis Engle 2010; Engle, 2011; Hill, 2013; Nelson et al. 2007

"Adaptive Capacity Wheel"



Gupta et al. framework

Participatory self-assessment of AC characteristics

In response to a crisis/disruptive event since 2005

Trace characteristics back to Ford project

Gupta et al. 2010 (Environmental Science & Policy 13:459-471)

What is the legacy?

- Methods
 1. Reached out to Ford Project participants
 2. Identified a range of assessment approaches
 3. January 2017 – Ford Legacy Assessment workshop
 4. Developed assessment tool with participants
 5. Spring 2017 – Conducted 3 focus group meetings
 - Public Lands Partnership, Delta, Colorado
 - Watershed Research and Training Center, Hayfork, CA
 - Wallowa Resources, Enterprise, OR
 6. 2017-18 – Analysis and participant review

Outcomes of the Ford Foundation Program

- **Relatively unrestricted funds over a 5 year time span promoted flexibility and the ability to experiment and be opportunistic**
- **Built upon the CBOs existing foundations of learning and trust**
- Enabled a **programmatic approach** to work toward their objectives, rather than a project-by-project approach
- **Enabled entrepreneurial capacities and allowed groups to take risks**
- **Emphasized learning and capacity-building for the long-run** rather than specific outputs and projects
- Participation with other Ford grantees developed a **national network of rural community groups – increased legitimacy and relevancy**
- **Increased credibility** with local government, state and federal agencies, NGO's, private sector, and other foundations.

Adaptive capacity Findings

1. Leadership
 - Strong leadership – collaborative, long-term vision, entrepreneurial; transitions across leaders varied
2. Variety
 - Groups are collaborative, inclusive of perspectives, interests, knowledge; broad networks supported groups during events
3. Learning
 - An essential ingredient to cultivate trust; Developed through cross-CBO learning and academic connections
4. Resources
 - All struggled with sufficient resources but effectively addressed challenges
5. Fair Governance
 - Reputation for integrity, being transparent and inclusive; Limitations during events
6. Room for autonomous change -
 - Ability to improvise and self-organize; provide opportunities within community

What does this tell us?

Enduring adaptive capacity characteristics

- Variety: diversity of perspectives, problem frames, participants
- Learning: within-group and across-group learning – perhaps the most enduring legacy
- Autonomy to change: Self-empowered to self-organize
- Leadership: WR and WRTC managed leadership transitions
- Resources: social capital and trust, and legitimacy vis-à-vis other organizations
- Fair governance: emphasis on transparency, inclusion

What does this tell us?

Weak adaptive capacity characteristics

- Variety: diversity of options; 'only game in town'
- Learning: new participants (esp PLP) haven't adopted learning ethos
- Autonomy to change: constrained by law, policy, agency preferences, and other venues RE: federal public land mgmt.
- Leadership: limited in small rural communities; recruiting and mentoring next generation
- Resources: financial resources – back to project-by-project funding; lack programmatic funding for risk taking
- Fair governance: questions of legitimacy by non-local interests

What does this tell us?

How does collaborative conservation work and how can we do it better?

- Innovation and risk-taking is a programmatic investment – not tied to specific project deliverables
- Collaboration is an organizational process – pay attention to mundanities of organizational development and capacity – planning, budgeting, staffing, etc.
- Cross-group learning fosters sense of unity (not doing this alone) and inspires new ideas

How can we transform science so it truly serves communities and practitioners doing conservation on the ground?

- Recognize long-term investment in trust relationships
- Framing questions, and analyzing and interpreting results together, recognizing "positionality" of each



What are the “big stories”?

Collaborative conservation is not a 'project', but a long-term commitment

- ▶ Taking risks to try new out-of-the-box, risky initiatives – and willingness to fail in order to learn – is part of the program
 - Challenge for academic researchers to invest many years in CBCC without publications to show; incentive is to be conservative...
- ▶ Virtuous cycle of: shared commitment to learning begets trust begets willingness to share in risks
- ▶ Outcomes are observable over many years, not just after one project effort – does anything innovative “succeed” after one try?



Questions?

Thank you!

Considering: Collaborative Adaptive Rangeland Management

Hailey Wilmer - Northern Plains Climate Hub
 Collaborators: Maria Fernandez-Gimenez, Justin Derner (ARS), David Augustine (ARS), Lauren Porensky (ARS), David Briske, Michelle Olsgard Stewart



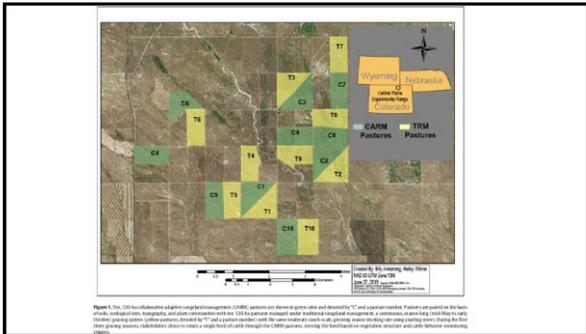
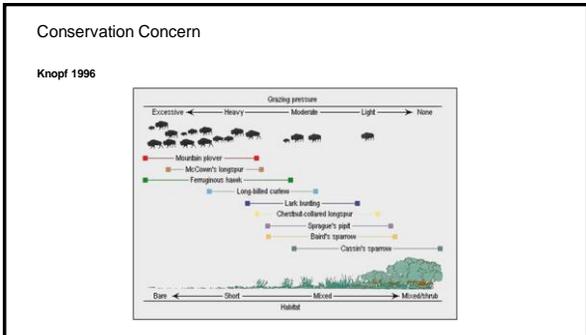
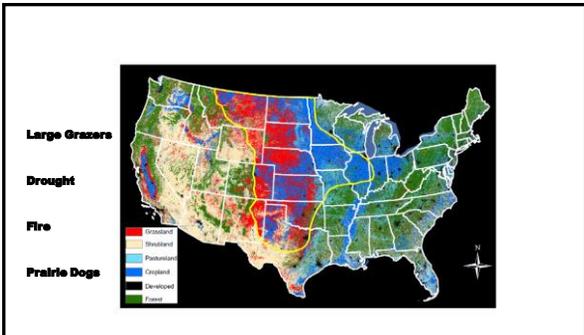
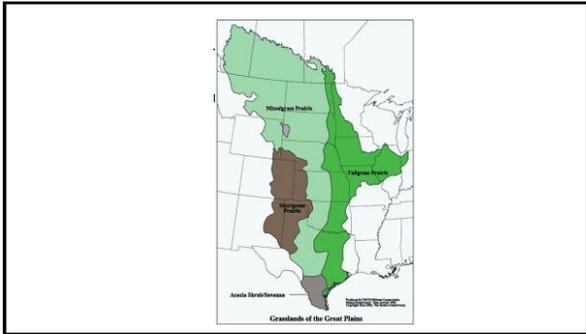
USDA Northern Plains Climate Hub
U.S. DEPARTMENT OF AGRICULTURE

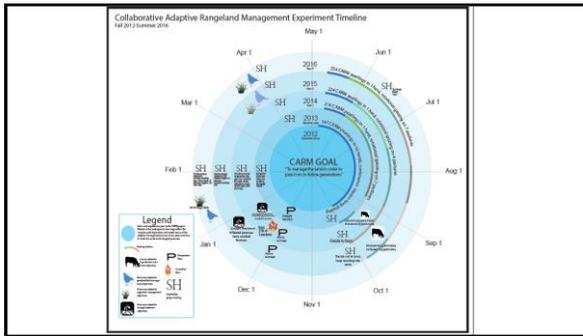


WARNER COLLEGE OF
NATURAL RESOURCES

Hailey.wilmer@ars.usda.gov





How can we manage public and private land for multiple rangeland objectives (production and conservation) in an uncertain and dynamic system?

CARM engages science in management: A collaborative management project using adaptive management in a formal experimental design.

How can research serve as a tool to empower decision-makers with conservation and production?

CARM engages stakeholders in knowledge co-production: A participatory grazing experiment where one treatment is determined by a collaborative group of stakeholders.



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journal homepage: <http://www.elsevier.com/locate/rmg>

Original Research

Collaborative Adaptive Rangeland Management Fosters Management-Science Partnerships^{1,2,3,4,5}

Hailey Willmer^{1,*}, Justin D. Derner¹, María E. Fernández-Giménez¹, David D. Briske⁴, David J. Augustine⁵, Lauren M. Porensky², the CARM Stakeholder Group¹

¹ US Department of Agriculture (USDA), Northern Plains District Office, Fort Collins, CO 80526, USA

² Public Agricultural Research Service (PARSA), Public Area Rangeland Research and Science Research Unit, Cheyenne, WY 82001, USA

³ Department of Energy and Ecological Interactions, Colorado State University, Fort Collins, CO 80523-1472, USA

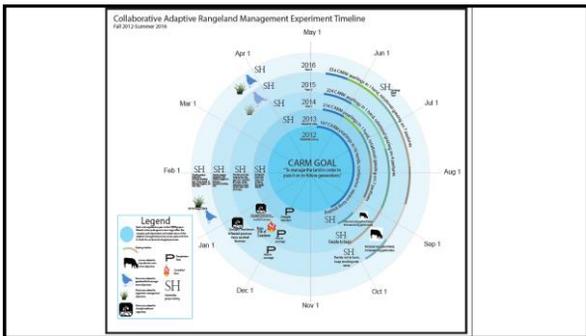
⁴ Department of Environmental and Natural Resources, Texas A&M University, College Station, TX 77843-3159, USA

⁵ USDA ARS Northern Plains Rangeland Research and Science Research Unit, Fort Collins, CO 80526, USA

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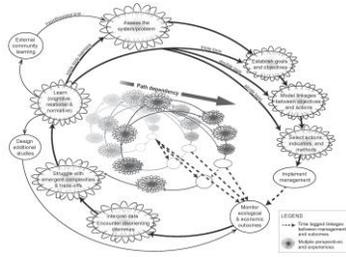
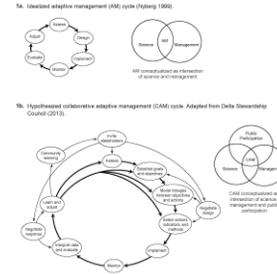
ABSTRACT

Background: In the western Great Plains of North America, an emerging social-ecological problem is that rangeland management objectives for livestock production, grassland conservation, and vegetation structure and composition diverge. The Collaborative Adaptive Rangeland Management (CARM) experiment is a 50-year collaborative adaptive management (CAM) project initiated in 2012 that is aimed at testing science-management partnerships and data-driven adaptive management through a participatory, interdisciplinary approach. This study



Complexities foster learning

- Trade offs between objectives
- Time lags
- Spatial and temporal trade offs among objectives
- Learning opportunity costs
- Diverse social worlds



What if research is a tool for action?



What if research could be one of the best tools we have?

To face the challenges of the **new** New West



To create the world we want to live in

