

**NAVIGATING THE POWER DYNAMICS OF LEARNING AND COMMUNICATION
IN COLLABORATIVE RESOURCE MANAGEMENT:
RESEARCH TO INFORM PRACTICE**

By

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To my family and Glenn for their love and inspiration,
especially to the memory of my dad
who would have been excited to have another doctor in the family

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Abstract of Dissertation Presented to the Graduate School
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This dissertation introduces and applies new theoretical approaches to the study of participation and collaboration in natural resource management to contribute to the theory and practice of sustainability. Sustainable management of common pool resources, such as the grazing lands, watersheds and riparian areas discussed here, requires collaboration, or at least coordination, among the diverse stakeholders who have influence over the use of those resources. Various formalized participatory processes have evolved to encourage stakeholder collaboration in this context, yet there is a lack of critical research on how these formalized structures contribute to the learning and empowerment goals of collaborative resource management. This research uses critical discourse analysis and participatory action research to examine three different aspects of collaboration: 1) adaptive management, with a focus on how diverse stakeholders engaged with each other in learning, communication and decision-making to support adaptive management of riparian areas on a US National Forest, 2) civic engagement with a focus on how different communication strategies used in a series of participatory workshops relate to the learning and empowerment goals of formalized

participatory processes, and 3) collaboration in research with a focus on the emergent qualities of complex partnerships that can lead to transformative social change and/or co-option by powerful interests. Findings from the first study suggest that consensus-based participatory processes in adaptive management may privilege the expert knowledge of those leading the process, while marginalizing other incompatible perspectives. Findings from the second study build on this to suggest that formalized participatory processes designed with dialog as the goal, instead of the conventional focus on consensus, can more effectively promote empowerment, creative thinking and civic engagement. Findings from the third study indicate that PAR requires institutional support that is flexible, supportive of critical reflection linked to action and responsive to the emergent qualities of complex partnerships. Overall, findings from this qualitative dissertation address important gaps in the theory and practice of collaborative resource management, suggesting ways that critical constructivist research can advance the science and practice of sustainability in creative new directions.

CHAPTER 1 INTRODUCTION

This dissertation introduces and applies new theoretical approaches to the study of participation and collaboration in natural resource management. Specifically, I used a critical constructivist theoretical perspective to examine how people manage differences in worldviews, knowledge, language and power as they learn about and manage for sustainability. Sustainability is an approach to development that aims to “meet the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987). This concept further includes explicit recognition of interdependencies between social and ecological systems and linkages between global and local processes of change (Kates et al., 2001; Walker et al., 2006). I examine these interdependencies and cross-scale linkages by interpreting micro level participant interactions, such as conversations in participatory workshops and partnership building in participatory research, relative to macro level institutional discourses and power structures in those contexts (e.g. Harrell and Bond, 2006; Fairclough, 2008; Wicks and Reason, 2009).

Specifically, this research addresses sustainable livestock grazing, which aims to maintain economically viable livestock operations through sustainable use of native vegetation and available surface water, sometimes supplemented by pumped ground water (Holechek et al., 2004). Sustainable grazing requires that managers adjust the number, kind and class of livestock, the seasonality and duration of grazing and the area of land grazed to prevent livestock from negatively impacting the potential productivity or stability of the ecological system. Sustainable livestock management in this context assumes a watershed focus, recognizing that management actions in any

part of the watershed may affect ecological and hydrologic processes throughout the entire watershed. For example, excessive removal of vegetation by livestock can lead to erosion and loss of topsoil in the upper watershed, which can eventually cause gully formation and downgrading of the stream channel in the lower watershed. The management strategies discussed here integrate concepts and practices from natural resource management and agricultural development, as government agencies, university extension and non-governmental organizations fund education and/or incentive programs to promote sustainable agricultural practices based on a scientific understanding of how natural resource systems function.

Livestock grazing, especially on public lands, can be controversial because people have competing interests in watershed management and also various interpretations of sustainability. Scientific approaches to management do not necessarily simplify decision-making since it is difficult to statistically assess the ecological effects of livestock grazing at the watershed scale. Results of monitoring studies are often difficult to interpret due to high spatial and temporal variability in climate and landscape productivity and complex interactions between livestock, wildlife, fire, invasive species and recreation. Thus, sustainable livestock management requires a focus on communication and coordination among a diversity of people who have power to influence and interpret watershed conditions. The term diversity is used throughout this dissertation to refer to various dimensions of social difference around which individuals and groups orient themselves. Aspects of diversity discussed here include perspectives on sustainability, interests in natural resource management, livelihood or professional affiliation, educational background and worldview, to name a few. Worldview is a term

that holistically refers an individual's orientation or positionality in the world based on integrated aspects of identity, social relations, culture, values, knowledge and socio-political history.

This dissertation is presented as three separate manuscripts prepared for submission to academic journals and written as stand-alone documents. While all three papers maintain a critical focus on power and diversity in formalized participatory processes, each paper takes an increasingly broader geographic and temporal focus to examine patterns of participation and interaction at different scales (See Table 1-1). The first manuscript, "Power and conflict in adaptive management: analyzing the discourse of riparian management on public lands" examines participant interactions in one field day from a series of participatory workshops on a National Forest in the southwestern US. This study compared workshop discussions, where participants considered different interpretations of site conditions, to subsequent management decisions about livestock use at those sites. The focus on riparian management within a specific drainage highlights the social process of how participants make sense of their social-ecological world—emphasizing this is neither a wholly subjective nor a wholly objective process, but that participants interact with each other *and* the physical world to negotiate their interpretations of sustainability. This paper targets an audience of natural resource managers and researchers interested in how participatory processes can enhance learning and decision-making in adaptive management. The second manuscript, "Revealing the power of dialog in formalized spaces for public participation: Implications for civic engagement" interprets patterns in communication and social relations found throughout the series of participatory workshops relative to a multi-year effort to

promote collaborative resource management on the National Forest. I chose this focus to highlight structural aspects of these participatory workshops and the leadership role that key participants played, which together influenced what was possible within the larger collaborative effort on the National Forest. This paper targets an audience of discourse theorists, political scientists, facilitators and civics educators, interested in how the design and implementation of these formalized participatory processes can contribute to civic engagement on controversial issues. Shifting from a focus on participation in resource management to participation in research, the third manuscript, "Strategic considerations for managing complex partnerships for participatory action research" examines how to adaptively manage complex partnerships so that diverse stakeholders can negotiate how to promote social change through integrated action and research. Social change, in this study, refers to a shift toward management strategies that recognize the linked social-ecological aspects of sustainable watershed management. However, these findings are also relevant to participatory action research (PAR) studies addressing social change in other aspects of public life. Although I was not able to reach the potential I envisioned for some of the PAR initiatives discussed here, the challenges I experienced illuminated core considerations for how to build and maintain PAR partnerships. My goal with this paper is to encourage others to realistically consider how to facilitate this type of integrated action and research. This paper targets an audience of action researchers with implications for how to build the capacity of novice researchers and how to institutionally support PAR practice.

The qualitative methods used in this research, specifically critical discourse analysis and PAR, are grounded in a critical constructivist theoretical perspective

(Kincheloe, 2005; Crotty, 2006). The philosophical basis for this research is that meaning is constructed as individuals subjectively experience the social and physical world. There is no objective reality that can be measured or described. Rather, there are multiple realities and interpretations of the social-physical world based on the unique perspectives of each individual, their social interactions with others and their historical, social and political context. Critical constructivist research seeks to illuminate multiple perspectives of reality to challenge assumptions of universal truth and objectivity, which may eclipse alternative or minority views. Some critical constructivist researchers solely aim to raise awareness by revealing differences in power and perspective, while others, following the traditions of critical pedagogy and participatory action research, take their work a step further and expressly seek to promote social change, as in Paulo Freire's conscientization (Kincheloe, 2005; Crotty, 2006). This latter approach provides the foundation for the research presented here.

The language and writing style of each manuscript is quite different since each connects to different bodies of literature and disciplinary traditions to reach different audiences. For example, Chapter 2 discusses sustainability using the language of adaptive management with its emphasis on uncertainty, risk and systems theory; whereas, Chapter 3 uses the language of deliberative democracy and discourse theory to discuss how language is used to exert power and to influence public issues. Scholarly articles written for natural resource audiences typically attempt to characterize a social-ecological process in its entirety attempting to make explicit connections between social processes and ecological outcomes in the ideal, with expectations of generalizability across many contexts. In contrast, scholarly articles written for discourse

journals tend to highlight a few in-depth examples of how discourse functions in specific social and/or political contexts with expectations that readers will draw their own conclusions for how to apply these insights to other contexts. Although I conducted similar types of critical discourse analysis for Chapters 2 and 3, I structured my findings in Chapter 2 to emphasize connections between social and ecological issues for the natural resource audience and in Chapter 3 to emphasize patterns in discursive practice using a few in-depth examples for an audience of discourse theorists. Discourse theorists following a critical constructivist theoretical perspective believe that language use and interpretation are inherently subjective, and so any data can be analyzed and interpreted in multiple, equally valid ways depending on the researcher's identity, purpose and theoretical perspective. Thus, subjectivity and context are centrally important to communicate to these audiences, while generalizability is de-emphasized. This is similar for action researchers, and thus, Chapter 4 is structured as a critical reflection with a writing style that emphasizes the socio-political context of a study and the researcher's personal experience with participants. Reflecting the interdisciplinary goals of this research, my publication strategy of writing each chapter for different audiences is expected to expand the relevance and impact of this body of work. While this dissertation represents my original work, key individuals will be recognized as co-authors on individual manuscripts as they helped deepen my analyses and situate my writing within the appropriate disciplinary literature. The first person plural 'we' is used in Chapters 2 and 3 to recognize their contributions.

Statement of the Problem

Overwhelming enthusiasm for collaborative and participatory approaches to sustainable resource management and agricultural development has resulted in a

contemporary push to ‘scale up’ participatory approaches to management and research, both in the US and internationally (Reed, 2008). ‘Scaling up’ participation often means development and dissemination of formalized structures and methods to promote participation, yet critics of participatory development have found that many of these structures superficially create the outward appearance of civic engagement and democratic participation, while actually reinforcing the views and decisions of those already in power (Cooke and Kothari, 2001). Since these earlier critiques, research has shifted to emphasize that formalized participatory processes *can* promote empowerment *if and when* participants actively work to shape the process (Hickey and Mohan, 2004). Research in education and public health have reached similar conclusions, emphasizing that institutional structures for empowerment must be flexible, so that participants can adapt these structures according to their needs and interests (Kincheloe, 2005; Cornish, 2006; Mayes, 2010). Despite the extensive body of research on collaborative and participatory processes in natural resource management and agricultural development and an increasing recognition that these processes are highly political, critical research on *how* power is enacted and negotiated in these formalized processes and *how* structural aspects of their design may promote or constrain participant learning and empowerment is lacking (Cornwall, 2004; Innes, 2004; Stringer et al., 2006; Newig et al., 2008).

In large part, these questions have not been investigated because they are not easily addressed by quantitative or qualitative positivist research, which are the research traditions historically supported in agriculture and natural resource disciplines. With these positivist approaches, researchers attempt to measure aspects of the

participatory process and relate it to participatory outcomes (Conley and Moote, 2003). However because collaborative processes and outcomes are highly interdependent, often indistinguishable and uniquely experienced by each participant, positivist research approaches are not well-suited to explore the highly contextualized power dynamics of participation. In contrast, qualitative research methods grounded in critical theoretical perspectives have evolved specifically to address issues of context, diversity and power (Crotty, 2006). Such qualitative research methods have been widely used in education, public health, community psychology and other applied social science disciplines. Yet, there are few examples of this type of critical research in agriculture and natural resources, and those existing studies typically use critical ethnography or Foucauldian analysis rather than a broader range of qualitative methods (Fraser, 1992; Gaventa, 2004). This suggests great potential for expanded use of qualitative methods to enhance our understanding and practice of sustainable resource management.

Power and Conflict in Adaptive Management: Analyzing the Discourse of Riparian Management on Public Lands

The first paper (Chapter 2) focuses on participatory discussions and management decisions relative to livestock grazing in riparian areas on a US National Forest. This study provides a detailed snapshot of participant interactions in one workshop field day relative to a larger multi-year collaborative process, which promoted adaptive livestock management on this Forest. Specifically we asked (1) how did participants interact in workshop discussions to expand their understanding of the social-ecological system, and (2) how did the ideas discussed during this field day compare to subsequent decisions in the published management plan for this area? While the specifics of how participants managed differences in this context are revealing in themselves, this study

suggests more broadly that consensus-based participatory processes may privilege the expert knowledge of those leading the process, while marginalizing other incompatible perspectives.

Revealing the Power of Dialog in Formalized Spaces for Public Participation: Implications for Civic Engagement

The second paper (Chapter 3) identifies patterns in facilitator and participant discourse as they manage differences relative to the controversial issue of livestock grazing in riparian areas on public lands. This work examines participant interactions from a series of participatory workshops as part of a larger multi-year collaborative process, which sought to empower livestock ranchers to become more involved in management of the National Forest. Specifically, we asked how the discursive strategies of monolog and dialog were used to stabilize or transform meanings and social relations that had been polarized relative to this historically controversial issue. Theoretically this paper suggests that formalized participatory processes could more effectively support civic engagement by focusing on dialog rather than consensus.

Strategic Considerations for Managing Complex Partnerships for Participatory Action Research

The third paper (Chapter 4) contrasts my experiences attempting to facilitate integrated action and research in three PAR initiatives: the National Forest study, which is highlighted in the previous chapters, and two earlier studies, which include my preliminary dissertation research in northwestern Mexico and my master's research on a Native American reservation in the southwestern USA. While I used a similar PAR approach in all three studies, these initiatives resulted in different forms of partnerships and varying levels of transformation and co-option. Thus, their comparison provides insight into how to manage complex partnerships to work toward learning,

empowerment and social change. Publishing critical reflections of one's research practice promotes an integrated understanding of the theory and practice of PAR (Pini, 2003; Bond and Harrell, 2006; Smith et al. 2010).

Importance of the Study

Together these papers contribute to a theoretical and practical understanding of power dynamics and diversity in collaborative resource management and participatory action research. Each paper elaborates implications for the design and facilitation of participatory processes to support participant empowerment and creativity, along with practical suggestions to build participant and researcher capacity to more productively manage diversity issues. Beyond natural resource management, this work makes relevant contributions to other fields that similarly use participatory and collaborative approaches to improve public life, for example health, education and community development. Further, this dissertation expands the possibilities for research in agriculture and natural resource management by illustrating how critical constructivist research approaches—specifically critical discourse analysis and participatory action research—can be used to examine questions of power, knowledge, decision-making and civic engagement that are not well addressed with positivist qualitative and quantitative research. This dissertation suggests that qualitative research in this vein can advance the science and practice of sustainability in creative new directions.

Table 1-1. Overview of the three studies presented in this dissertation.

Study	Research focus on collaboration	Practical implications	Temporal scale	Geographic scale
Chapter 2	Negotiating interpretations of sustainable riparian management	Leading, convening and facilitating adaptive management	Single field day	Riparian areas in a single drainage
Chapter 3	Transforming historic conflicts and encouraging civic engagement	Process design, facilitation and capacity building for civic engagement	Series of workshops in 2009 (9 days)	A National Forest in the southwestern USA
Chapter 4	Managing complex partnerships for transformative PAR	Institutional support, capacity building for action researchers	Three PAR efforts from 6 months to 2 years each (2002-2009)	A Geographic region spanning the southwestern USA and northwestern Mexico

CHAPTER 2

POWER AND CONFLICT IN ADAPTIVE MANAGEMENT: ANALYZING THE DISCOURSE OF RIPARIAN MANAGEMENT ON PUBLIC LANDS

Adaptive management recognizes that coupled social-ecological systems are characterized by high levels of complexity, change and unpredictability, leading to environmental problems that have no simple resolution (Liu et al., 2007). Since complex, dynamic systems can never be fully understood, learning and adaptation take a central role in maintaining the resilience of social-ecological systems, which is the ability of a system to withstand disturbance and still maintain its fundamental character (Walker et al., 2006). Increasingly the engagement of diverse stakeholders is valued in adaptive management, with expectations that collaboration will lead to increased learning, social legitimacy for decision-making, and relationships that reinforce personal and institutional commitments to learning and adaptation (Stringer et al., 2006; Pahl-Wostl et al., 2007; Jacobson et al., 2009).

However, the implementation of adaptive collaborative management often falls short of this ideal. Stakeholders draw from different values and bodies of knowledge to define problems and propose solutions. These differences can be a source of innovation, but they can also lead to increased conflict, especially when attempting to collaborate on contentious issues (Lipscomb and O'Connor, 2002; Healy, 2009; Larson et al., 2009). For example, powerful stakeholders may attempt to dominate a collaborative process by overshadowing competing ideas, or less powerful stakeholders may lack the capacity to participate effectively (Armitage et al., 2008; Reed, 2008). The field of facilitation has evolved to address this need to help groups productively manage their differences. Facilitators are expected to establish ground rules and lead group activities to create a safe space for balanced participation, empathic listening, dialog,

and collective decision-making, as appropriate (Hogan, 2002). When individuals open up to one another through respectful personal communication, destructive conflicts can be transformed into productive opportunities for learning and integrative problem-solving (Putnam and Wondolleck, 2003; Kahane, 2007).

Despite the practical challenges of engaging diverse stakeholders, many complex resource problems, especially those that impact common pool resources, require a collaborative—or at least a coordinated—approach to planning and management (Ostrom, 2008). For this reason, many researchers indicate the need for more critical research on how collaborative processes function, with special consideration to issues of power and marginality (Leeuwis, 2000) to establish more realistic expectations of adaptive collaborative management (Innes and Booher, 1999; Armitage et al., 2008; Muro and Jeffrey, 2008).

This study is situated in the context of a multi-year collaborative effort to support adaptive management of livestock grazing on a National Forest in the southwestern USA. A series of professionally-facilitated workshops brought together diverse stakeholders to discuss the controversial issue of livestock grazing in riparian areas. While we researched this collaborative process more broadly, this study focuses specifically on one field day from the series of workshops to address the following research questions: (1) How did participants interact in workshop discussions to expand their understanding of the social-ecological system, and (2) How did the ideas discussed during this field day compare to subsequent decisions in the published management plan for this area? Using critical discourse analysis, we examined transcripts of workshop discussions and text from the management plan to understand

how participants of adaptive collaborative management negotiate learning and decision-making at the level of inter-personal communication.

To establish context, we describe two competing perspectives of riparian management that have historically framed conflicts over riparian grazing, recognizing that participants draw from the distinct language and meanings associated with each of these perspectives to communicate with each other. We then present our analysis of workshop discussions and the management plan by examining how workshop participants made claims about the social-ecological system and how they considered claims made by others. Our findings highlight topics where differences in stakeholder perspectives most clearly surface. In particular, we focus on the power of facilitators, who guided participant interactions in the workshop, and the power of US Forest Service (FS) staff, who wrote the management plan. We conclude with suggestions for how facilitators and participants of adaptive collaborative management can critically reflect on their own practice to more effectively manage power dynamics and stakeholder diversity.

Adaptive Capacity and Conflict Management

Recognizing that stakeholders have different capacities to participate, many adaptive management efforts incorporate some capacity building activities, including the workshop analyzed in this study. Capacities considered central to adaptive management include adaptive capacity for individuals and groups to critically reflect on experiences and adapt their actions (Armitage et al., 2008), governance capacity to internalize learning within institutions (Folke et al., 2005; Fabricius et al., 2007), and technical capacity for participants to engage in scientific problem-solving and ecological monitoring (Fernandez-Gimenez et al., 2008). Whereas the concepts of adaptive and

governance capacity emphasize the autonomy of the individual or organization to critically reflect on their own observations and experiences to interpret change, the concept of technical capacity tends to privilege expert scientific thinking above other ways of knowing as a means to measure and interpret change. While some authors have demonstrated that adaptive management can effectively integrate both scientific and local or indigenous knowledge (e.g. Fernandez-Gimenez et al., 2006), others discuss the political challenges of including and respecting non-scientific knowledge when collaborative resource management implicitly prioritizes science (Fischer, 2000; Wollenberg et al., 2008; Healy, 2009). This tension suggests we must consider the political aspects of how science and expert knowledge are used in the context of learning and capacity building.

The concept of social learning draws from various theories of learning, communication and organizational change to explain the social process of how people learn from each other and build support for collective action (Keen et al., 2005; Reed et al., 2010). Critics suggest that social learning lacks theoretical consistency and overemphasizes the need for stakeholders to achieve a shared mental model of the system (Leeuwis, 2000; Muro and Jeffrey, 2008). This view of social learning simplistically assumes that a shared understanding of the system will result in predictable changes in actions and behaviors, underestimating fundamental differences in stakeholder interests, values, and worldviews (Leeuwis, 2000; Muro and Jeffrey, 2008). Especially when dealing with contentious issues, any shared understanding of the system may be better understood as a socially situated, temporary resting point where individual perspectives may overlap and interact (see e.g. Dewulf et al., 2004).

Following Leeuwis' (2000) framing of participation as a negotiation process, we focus on stakeholder interests throughout this study as a means to understand their positions and actions.

Similarly, the conflict management literature recognizes the plurality of stakeholder interests and the power issues underlying participatory and consensus-based approaches to decision-making (Susskind et al., 1999; Kaner, 2006). According to interest-based negotiation, powerful stakeholders may choose not to participate if they feel it is in their best interest to act individually or if the situation is framed in a way that does not correspond with their interests (Fisher et al., 1991; Elliott et al., 2003). Conflict situations can become polarized and destructive, even intractable, when issues in conflict are closely related to stakeholders' sense of identity; however, specialists in conflict management stress that even the most intractable conflicts can transition into productive relations (Putnam and Wondolleck, 2003). Transformative approaches to conflict management, which stress empathic listening and open dialog, aim to reach beyond agreement on a specific issue to affect personal and societal transformation (Kahane, 2007). Social learning, similarly emphasizes the transformational potential of learning and relationship building (Keen et al., 2005). Transformation is attributed to a growing awareness of others' perspectives, an appreciation of interdependencies, and a level of mutual trust that allows individuals to open themselves up to other interpretations of the world (Putnam and Wondolleck, 2003; Bush and Folger, 2005).

With situations characterized by conflict or misunderstanding, facilitators who have no direct interest in the situation can help establish the trust needed for stakeholders to work together productively by establishing a fair process that does not favor any

stakeholder group, nor influence the content of a group's conclusions (Heron, 2002; Kaner, 2006). In the context of training and technical capacity building, it is common for facilitators to also act as instructors, directing participants to incorporate specific concepts into their thinking (Heron, 2002). For example, in agricultural extension and international development, experiential learning models that rely on facilitated instruction are considered highly effective (Chambers, 1994). However, this dual role can become problematic if the instructional concepts presented by facilitators dismiss or reject ideas shared by participants, thus undermining their trust in a fair process (Rixon et al., 2007).

Powerful stakeholders, especially leaders of collaborative processes, also tend to have substantial influence over a group's process and outcomes; they often establish the forum, define the purpose and scope of the process, hire the facilitator, set the agenda and invite participants (Connelly and Richardson, 2004). Unlike facilitators, these stakeholders generally do not have the training to recognize the subtle influences that their actions may have on group dynamics and outcomes. In practice, leaders of collaborative efforts—whether consciously or unconsciously—may be more interested in *strategic action*, where the process is used to secure their own interests, rather than *communicative action*, where the process is genuinely used to encourage learning and negotiate decisions collectively (Habermas, 2000). A collaborative or participatory process can ironically become oppressive when powerful stakeholders influence the process to such a degree that participants must either agree with pre-determined conclusions or abandon the process (Cooke and Kothari, 2001; Bush and Folger, 2005).

Competing Discourses of Riparian Management

While we recognize there are many, often overlapping perspectives of riparian management, we focus here on two competing perspectives, or social discourses—which for the purposes of this study we named the *environmentalist* and *agricultural science* discourses. The meanings, words, stories, and references that define these social discourses represent a familiar dichotomy that study participants referenced as they negotiated their individual views with others.

The *agricultural science* discourse originated in the early 1900s as the federal government pushed for sustainable agricultural practices that would prevent over-exploitation of the nation's resources (Baker et al., 1988; Quigley, 2005). However, the issue of riparian management was not raised until the 1960s when the *environmentalist* discourse drew public attention to the problem of riparian degradation on public lands. Before that time, public land managers prioritized livestock production above riparian protection, and heavy livestock impacts to riparian areas, commonly called “sacrifice areas,” were more or less accepted as part of the cost of doing business (Quigley, 2005: 40). According to the *environmentalist* discourse, less than twenty percent of riparian areas remained intact in the western USA, and livestock grazing was one of the principal causes of this loss (Fleischner, 1994; Belsky et al., 1999). *Environmentalist* activist groups launched media campaigns and legal actions to remove livestock from riparian areas, especially those on public lands (e.g. Matteson and Wuerthner, 2002).

Responding to *environmentalist* concerns, leaders of the *agricultural science* discourse, who included agricultural researchers, extension specialists and agency land managers, agreed that the livestock practices commonly used at that time negatively impacted riparian areas (Elmore and Beschta, 1987). Starting in the 1970s, these

leaders invested their efforts in research and education to identify and promote best management practices for “proper grazing” that would result in little to no impact on riparian function (e.g. Winward, 2000; Wyman et al., 2008). These agricultural professionals who have dedicated their careers to sustainable ranching view livestock exclusion as a last resort for riparian management (e.g. Perry, 2005).

While the Forest Service and other public land agencies are regularly challenged in court by proponents of the *environmentalist* discourse, the research and best management practices outlined by the *agricultural science* discourse provide them with the justification for continuing livestock grazing in riparian areas as long as they can meet resource objectives. Thus, the development and dissemination of these social discourses have political consequences for public land management, and stakeholders interested in these issues are well-versed in the language of both discourses.

Methods

Riparian Workshops on the Sprucedale National Forest

The Sprucedale¹ National Forest (800,000+ ha) in the southwestern USA is known for its high density of riparian areas, including seeps, springs, wetland meadows, lakes, streams and the headwaters of several regionally important rivers. Because of its large number of endangered species, mostly associated with riparian areas, Sprucedale has been the focus for environmental activism and litigation for several decades. Like all National Forests, Sprucedale is managed for “multiple uses” including recreation, fishing, hunting, and livestock grazing although planning guidelines emphasize that multiple uses will be permitted only when resource conditions allow.

¹ All proper names have been changed to protect confidentiality.

In the mid-1990s, the Forest Service (FS) conducted Environmental Assessments of grazing activities on Sprucedale and decided to fence out livestock from many streams and wetlands, especially those designated as critical habitat for endangered species. In other riparian areas, they enforced stricter guidelines and shorter time periods for livestock grazing. These actions precipitated great tensions between ranchers with grazing permits on the Sprucedale and FS staff, especially Resource Specialists.

Frustrated by years of unproductive conflict, a group of stakeholders associated with Sprucedale organized a series of workshops to open discussion on the controversial topic of riparian grazing. Workshop organizers included a university extension specialist, proactive Sprucedale ranchers, Sprucedale FS staff, and the lead author, who was a doctoral student at the time. Organizers invited an inter-agency facilitation team, who specialized in managing conflicts over riparian grazing on public lands, to lead the series of workshops. The informal slogan of the workshops used in publicity materials was “transforming conflict into collaboration for improved stewardship of riparian resources.” Organizers hoped the workshops would attract a diversity of stakeholders, especially wildlife biologists and skeptical Sprucedale ranchers, so that conflicts over riparian grazing could be worked out through presentations of scientific concepts and group discussions interpreting conditions in the field. Funding for the workshops came from university extension, the state cattle growers’ association, the FS regional office, and a regional non-profit organization dedicated to sustainable ranching.

Reflecting their program’s objective to integrate the social and ecological dimensions of public land management, the facilitation team took on the dual roles of

facilitating discussion and collaborative problem-solving *and* teaching riparian concepts and communication skills. The team included facilitation experts, who had extensive conflict management experience, and riparian experts, who represented some of the early innovators and contemporary leaders of the *agricultural science* discourse of riparian management. For example, one of the facilitators, Steve, worked with researchers who gathered extensive data on riparian conditions and grazing practices throughout the western USA in the 1970s; he testified on this issue in Congress; and he helped develop the riparian assessment protocol taught in the workshops and used by the Forest Service today. The team frequently referenced their goal to build ranchers' capacity, referencing both adaptive and technical capacity, to effectively participate with FS staff in adaptive management. Facilitators led the series of workshops using pre-existing workshop formats, including a two-day workshop on consensus building, a four-day workshop on riparian assessment, and a three-day workshop on riparian monitoring (Table 2-1). Facilitators structured workshop activities to engage all participants in learning and discussion.

We identified seven participating stakeholder groups, based on shared interests in riparian management: 1) workshop facilitators, 2) university affiliates, 3) Sprucedale Forest Service staff, 4) Sprucedale ranchers, 5) ranchers from other areas, 6) staff from the state Wildlife Agency, and 7) environmentalists (Table 2-2). We further subdivided Sprucedale FS staff by job responsibilities to distinguish slightly different management interests and thus different perspectives on riparian management. Sprucedale Leadership, including District Rangers who have decision-making authority within their administrative districts, take ultimate responsibility for protecting forest resources,

effectively managing public relations, and complying with laws and regulations to avoid litigation. Range Specialists, who work closely with ranchers to administer grazing permits and often come from agricultural backgrounds themselves, recommend grazing management practices based on their assessment of what the resources can sustain. Resource Specialists, such as Wildlife Biologists and Hydrologists, tend to assess resource conditions more conservatively since they are more interested in resource protection and restoration than extractive land uses, such as livestock grazing. However, we emphasize that FS staff work in interdisciplinary teams with a shared mission of sustainable management, and all FS staff in this study expressed a similar personal commitment to protecting the biodiversity and ecological function of forest resources.

Data Collection and Analysis

The primary data used in this study are transcribed audio recordings from a riparian assessment workshop held in the field on June 23, 2009 (Table 2-1). The mix of stakeholders in attendance and their participation levels in this workshop mirrored the diversity of participation throughout the workshop series (Table 2-2). Based on discourse analysis of all workshop transcripts, we identified patterns in stakeholder participation and controversial themes where stakeholder differences most clearly surfaced—interpreting current conditions, managing uncertainty, and determining causes of degradation. We selected the June 23 workshop for in-depth analysis because stakeholders expressed a diversity of views on these controversial themes, which we also identified from the literature of *environmentalism* and *agricultural science*. Additionally, this was the only workshop day where the field sites were specifically chosen to inform revision of an adaptive management plan. FS Leadership suggested

these locations so that workshop discussions could address specific questions they had about managing these riparian areas. The draft plan, which was published one year later, provided a unique opportunity to compare workshop discussions to FS decision-making. Thus, in-depth analysis of the data from this single workshop provides insight into the nuances of stakeholder interactions in this management context, while covering the breadth of controversial themes broadly associated with riparian management on public lands in the western USA.

The analytic framework for this study draws from Fairclough's critical discourse theory, which describes how language is used to manage differences in power and meaning (Fairclough, 1989; Fairclough, 2008), and Bakhtin's dialogic theory, which frames learning as an exploration of difference among individuals in dialog (Bakhtin and Emerson, 1984). Fairclough presents five ways that differences in perspective can be managed and analyzed in critical discourse studies: (1) an accentuation of difference, as in polarization or a struggle over meaning and power; (2) a bracketing of difference, as in a focus on commonalities and solidarity; (3) an openness to and exploration of difference, as in Bakthin's understanding of dialog; (4) overcoming differences, as in resolution; and (5) consensus, described as an acceptance of differences in power which suppresses differences in meaning (Fairclough, 2008: 41-42). At the level of interpersonal communication, productive conflict management requires that stakeholders engage in dialog and consider diverse views before making decisions, usually based on consensus (Daniels and Walker, 2001). Although consensus is often loosely equated to agreement by all parties, it more accurately reflects the perspective of the stakeholder with the most power, which may or may not have been influenced by

a collaborative process, and lack of active opposition by other stakeholders who may agree or lack the power to disagree (Connelly and Richardson, 2004; Fairclough, 2008).

Working with the data, we examined (1) the claims stakeholders made about the social-ecological system, (2) the certainty with which stakeholders made their claims representing relative openness to other perspectives, (3) the justifications they gave to legitimize their claims, and (4) the ways they referenced or responded to claims made by other stakeholders. By examining how claims were made and considered by others, we identified patterns in how stakeholders managed differences in perspective using Fairclough's (2008) framework, looking for evidence of dialog and blended discourses, which we interpret as learning. We then identified claims made by FS staff in the management plan and compared these to stakeholders' claims from the workshop to interpret how ideas from the workshop were used in decision-making.

Findings

We first discuss stakeholder claims that establish who had expert knowledge of riparian systems. Next, we present claims related to the field sites based on controversial themes: (1) interpreting current conditions, (2) managing uncertainty, and (3) determining elk impacts. We then present stakeholder claims about collaboration in the workshop, and finally, we compare the claims from the workshop to those in the management plan.

Establishing Expert Knowledge

Facilitators were invited to lead the workshops because of their expertise in riparian function and management and their experience managing riparian grazing conflicts on public lands. Taking on the role of riparian instructors, facilitators explained how to use the riparian assessment protocol, instructed participants to conduct an

assessment of site conditions in small groups, and led a group discussion, where participants reported their findings and facilitators answered content questions. In response, most workshop participants positioned themselves as learners and active participants.

The Forest Service recognized the expertise of two of their own staff—the Sprucedale Riparian Coordinator and a Resource Specialist, who had extensive riparian training and had actually monitored these riparian sites back in the 1990s. Although the Sprucedale Riparian Coordinator could not participate in this workshop due to scheduling conflicts, FS staff made frequent reference to his interpretation of the sites and his expectations for how they should be managed. Notably, he reviewed all riparian management plans.

Sprucedale ranchers identified themselves as experts on historical land use and land cover change on the basis that many of them came from multi-generational ranching families who homesteaded this area in the early 1900s. They also had expert knowledge of livestock and wildlife behavior from their daily observations of animal habits. Facilitators and FS staff specifically recognized the value of ranchers' local knowledge and elicited their perspectives on these issues.

An independent researcher indirectly asserted her expert knowledge of southwestern riparian systems when she clarified a facilitator's statement about how sediments moved through the system. Although another facilitator confirmed her remark, no one explicitly acknowledged her expertise. She only made one other comment during the day, which was not picked up for discussion. Wildlife Agency staff made no claims about expert knowledge and were not solicited for expert input. Thus,

expert knowledge did not necessarily grant stakeholders legitimacy within the workshop nor influence in decision-making.

Finally, facilitators also identified themselves as experts of collaboration and consensus building. One of the facilitators, Don, concluded a discussion of site conditions by summarizing the consensus building process:

To be honest with you, I think you all did a good job, given the confusing situation we had here.The final answers were pretty consistent all the way through, with just a few variations here and there. And that's what's nice about this, is you all kind of arrived at the same spot. It might have been a little bit, kind of like the creek out here, going [through] a little bit different channels once in a while, but it still came out the same way.

Interpreting Current Conditions

At the first field site, participants observed a series of scoured out pools along the bottom of the drainage and new plant growth along the sides of the channel that stabilized the eroded banks. There was agreement that at an unknown time in the past, the site had held standing water for long periods of time, but that now the site had transitioned, such that water flowed out of the system through the series of scoured out pools². The FS staff introduced the site by explaining that they were unsure how to interpret these erosion features, which is why they suggested having the workshop at this location. They acknowledged that the presence of new plant growth indicated that recent erosion was being stabilized, but they were still somewhat concerned about the soil loss. As one FS Range Specialist described, “we [saw] the quick revegetation, but *still*, the [area] that was being revegetated so quickly, was still *below*, a little bit, 6 inches to a foot, the original soil surface.”

² Technically, this was described as a transition from a lentic to a lotic type riparian system.

In contrast, facilitators explained that the series of scoured out pools was a natural erosion feature, which they called “necklace pools.” They shared personal stories saying, “We’ve seen this situation in every state in the West.” They explained that the necklace pools were a result of climatic changes since the last ice age—that with the current drying trend, the site received less precipitation which reduced its ability to produce the vegetation needed to protect against erosion. They also explained that because this was a flat, low gradient system at the top of the watershed, there was not enough water flow to warrant concern.

Ranchers did not directly participate in this discussion and made only two indirect claims about current conditions when discussing the topic of elk. One rancher suggested erosion was a problem, while another referred to it as a natural feature. The researcher and Wildlife Agency staff did not make claims about current conditions.

The difference in interpretation between FS staff and facilitators was reflected in the specific words they used throughout the day to discuss erosion (Figure 2-1). Facilitators most often used the words “headcut” or “downcut” to explain general concepts, but when referring to the field sites, they mostly used neutral terms, such as “necklace pools,” “deposition pools,” and “dissipation pools,” to describe what they considered natural erosion features. In contrast, FS staff mostly used negative terms, such as “headcuts” “nickpoints” and “downcutting” to describe these same features. Both groups also used terms more often associated with the other perspective, which indicates a response to alternative views and potentially some level of dialog on the issue.

By qualitatively examining how FS staff and facilitators considered each others' claims, we found that FS staff, especially the Resource Specialists, attempted to explore difference with facilitators, while facilitators used certainty and expert status to assert their own views and close off opportunities for dialog. For example, one of the facilitators, Don, confidently stated, "These little headcuts are really, actually little dissipation pools." Later in the discussion, one of the Resource Specialists, Helen, asked the facilitators, "Just a quick question on those deposition pools. You know, it's not—it sounds like they're kind of functioning like a headcut in that they're just going to continue marching up, right? But they're repairing themselves as they go." (See Appendix B for extended excerpt.) In this quote, the Resource Specialist provisionally accepted the neutral term "deposition pool" that was used previously by facilitators, and she tentatively asserted her own claim of a "headcut" presenting a rational justification for her interpretation and inviting the facilitator to explore this difference. In the following exchange, she repeated her question and the facilitator responded:

Resource Specialist, Helen: Do you think that's natural?

Facilitator, Don: Um hm.

Resource Specialist: With the best management in the world you're going to see those little pockets?

Facilitator: Yeah, because I think we've got climatic things going on here. You know, the way this site was developed geologically, and then the climate we have today, as far as, you know, where we're at, you know, and stuff. It's part of Mother Nature.

The facilitator presented a weakly developed rationalization with vague phrases such as "climatic things going on" and "the way this site was developed geologically" as a justification for why he considered these features "part of Mother Nature." The strength of his claim lies in his dual status as discussion leader and riparian expert,

implying that he understands the natural potential of this site even if he does not explain it clearly here. However, claims based on expert authority close off opportunities to explore differences because one would have to challenge the source of the authority to open up discussion about the claim.

Facilitators concluded this discussion by establishing consensus for their interpretation. In the quote presented at the end of the last section, the facilitator Don described how the group reached consensus on this topic: "The final answers were pretty consistent all the way through, with just a few variations here and there." We considered this to be an example of Fairclough's (2008) consensus, where conclusions by powerful stakeholders suppress real differences in meaning.

Managing Uncertainty

Since riparian systems are characterized by high levels of disturbance from floods and droughts, they rarely demonstrate a gradual, linear progression toward recovery, which makes it difficult to determine precisely how additional disturbances, such as livestock grazing, affect recovery rates (Baker Jr. et al., 2004). Thus, riparian recovery is a contentious issue in the larger debate over livestock grazing, leading *agricultural science* and *environmentalist* discourses to strategically craft arguments that further their respective positions. The *agricultural science* discourse argues that livestock grazing can be managed to avoid impacting recovery rates, which can be demonstrated with monitoring data. The *environmentalist* discourse argues that livestock should be removed from riparian areas to maximize recovery and minimize risk of further degradation, which is consistent with the Precautionary Principle that risk should be minimized when uncertainty is high (Bodansky, 1991).

During workshop discussions, FS staff repeatedly referenced uncertainty about how these sites would respond to management actions. A FS Leader Robert said, “Nobody’s real certain that any of [these management options] will be successful, so that’s why we’re thinking—I don’t know what we’re thinking, except for, let’s put up some exclosures, and try and get some idea of the potential of this site.” This statement implicitly references a classic *agricultural science* approach to reducing uncertainty, where monitoring data is compared inside and outside of a livestock enclosure to understand how a site responds to grazing; however, because the presence of an enclosure may influence other important factors, such as forage selection by other herbivores, this approach may not provide straightforward comparisons (Holechek et al., 2004). Relative to this uncertainty, FS staff expressed concern that if erosion continued, the system might cross some threshold, beyond which positive feedbacks would accelerate erosion and eventually drain the riparian areas. FS staff justified the need to reduce risk and uncertainty referencing their professional identity and associated responsibility to protect Sprucedale’s resources.

Facilitators acknowledged that riparian systems in general are complex, dynamic and difficult to predict. However, they explained that monitoring data from different types of systems across the western USA have shown that riparian areas recover approximately as quickly with properly managed livestock grazing as without grazing. They explained that there is “too much noise in the system” due to climate and other factors to distinguish “natural rates of recovery,” a term commonly used by the *environmentalist* discourse, from “near natural rates of recovery,” which they defined according to the *agricultural science* discourse as an upward trend in conditions based

on a minimum number of monitoring indicators. One of the facilitators Steve shared how he provided expert testimony in a court case questioning livestock impacts to endangered fish habitat. He justified the *agricultural science* perspective by explaining, “that’s been tested in court.” Justification based on legal authority discourages participants from engaging in dialog since an exploration of difference would require that the court decision be questioned. This encourages participants to accept and disseminate a whole discourse, or legal argument, rather than critically considering aspects of the discourse in negotiation with others.

When we examined how facilitators interacted with others on the topic of managing uncertainty, we found that they accentuated differences with FS staff, especially the Resource Specialists who more closely identified with the *environmentalist* discourse, and they emphasized commonalities with the ranchers. We see this pattern in the following exchange between a facilitator and the rancher who was permitted to graze this site:

Facilitator, Ken: One of the things that frequently comes up is that people say, “Well, we really don’t have anything against cows, but we want to see the streams recover faster.” And so that’s why this is such a significant thing that Steve [the other facilitator] is talking about, because, fact is, there is no natural rate of recovery that you can predict. It depends. As Steve said, there’s too much noise, in the system. You don’t know if you’re going to get enough rain or if it’s going to be too hot. Or.

Rancher, Evan: Too much rain.

Facilitator: Or if you’re going to get some scouring event. You don’t know, and so as long as you’ve got those upward trends and you can demonstrate it through those 9 questions [from the assessment protocol], that’s as good as you can get.

Rancher: So like what’s demonstrated here today [with my livestock grazing] is as good as it’s gonna get, but we’re still in an upward trend, moving, healing those areas, right?

Facilitator: Yeah.

In the beginning of this example, the facilitator Ken quoted a common *environmentalist* claim that streams will recover faster without livestock grazing. He then asserted with strong conviction that this approach is misguided, using the terms “fact is” and “there *is no* natural rate of recovery you can predict,” discouraging dialog on this point. Although FS staff never explicitly identified with this *environmentalist* claim, their underlying assumption for using livestock exclosures to determine the recovery potential for the site is essentially the same—that recovery would be maximized without grazing.

As the previous exchange illustrated, the facilitator and rancher worked together to emphasize commonalities. The rancher finished the facilitator’s sentence with the phrase, “too much rain,” and the facilitator elaborated this idea that too much rain could cause “a scouring event.” Then the rancher repeated the facilitator’s phrase “as good as you can get” and extended the facilitator’s explanation of managing uncertainty to conclusions about riparian recovery at this site. The facilitator responded with encouragement which further built solidarity. Emphasizing commonalities is a frequent strategy used by effective facilitators to ease tensions when discussing difficult issues or when attempting to bolster the confidence of less powerful stakeholders (Fisher et al., 1991; Heron, 2002). However, if facilitators do not also encourage groups to explore important differences once trust is established, participants may neglect important learning opportunities that could increase their adaptive capacity and enhance decision-making. When facilitators emphasized commonalities and accentuated differences on this topic, they reinforced historic tensions between ranchers and FS staff, especially the Resource Specialists who more closely associated with the *environmentalist* discourse.

Determining Elk Impacts

The issue of elk impacts generated substantial interest among many stakeholders, especially ranchers. Ranchers asserted that elk negatively impacted the wetland meadow sites by overgrazing vegetation and physically disturbing soils. They justified their claims by drawing attention to hoof prints and recently grazed plants on the sites. They also told personal stories about elk congregating in certain places and correlated the historic increase in elk populations during the 1970s with a concurrent decline of a sensitive native willow species known to be highly palatable. Ranchers contrasted their highly regulated livestock grazing activities on Sprucedale to elk that have open access “365 days a year.” They expressed concern that elk use should also be controlled, so that riparian conditions would be acceptable enough that the FS would allow livestock access.

While still emphasizing that these sites were in satisfactory condition, facilitators expressed concern that elk can easily cause damage when they congregate for extended periods. Facilitators made more negative references to elk than any other stakeholder group (Figure 2-2). Echoing the ranchers’ sentiments, the facilitators expressed strong convictions that FS staff needed to address the elk issue to effectively manage these areas in the long-term; they advised that this collaborative workshop was a good way to involve Wildlife Agency staff and start those discussions.

FS staff agreed that all livestock and wildlife were attracted to these riparian areas and that elk did have some negative impacts. However, herd management and hunting quotas are strictly under the jurisdiction of the state Wildlife Agency and coordination between the two agencies on this issue was known to be politically sensitive. Reflecting this ambiguity, FS staff made approximately equal negative and neutral references to

elk (Figure 2-2). Further examining this pattern within FS staff, we found Range Specialists made only negative references to elk, which reflects similarities with ranchers and facilitators (Figure 2-3). FS Leadership justified their stricter regulation of livestock by explaining, “We’ve got to play the hand that we’re dealt, and we’ve got to consider all factors.” This statement indirectly references the professional commitment of FS staff to protect Sprucedale resources to the best of their ability given their limited ability to manage elk.

Despite frequent mention of elk, Wildlife Agency staff did not speak much throughout the day and made mostly neutral references to elk (Table 2-2, Figure 2-2). A Wildlife Agency habitat manager, Keith, explained toward the end of the workshop that it was difficult for him to respond to these site-specific concerns because he did not have control at that scale. It is widely understood that elk can jump over livestock fences, which means they are logically difficult to manage except through herd reduction. It is also well-known that the Wildlife Agency, which receives most of its revenue from hunting permits, has an interest in maintaining relatively large elk herds.

When we looked at how facilitators and participants interacted on the topic of elk, we found that stakeholders asserted their own views with relatively little engagement with alternative perspectives. The following exchange between a facilitator and a Wildlife Agency representative demonstrates this juxtaposition of incompatible perspectives:

Facilitator, Betty: That’s [why we have the] Wildlife Agency here, to have those discussions at the front...so that you don’t have any false expectations about what this [site] is going to look like in 10 years....

Wildlife Agency representative, Keith: I mean, we cannot manage elk on a site-by-site basis. The best we can do is on a herd management basis. If we were monitoring here, then that would go into a pool of other sites that

we're monitoring, which then goes into other decision-making processes, to decide how we manage those herds.

In this example, the facilitator asserted her expectation that participants came to the workshop to engage in discussions about how to improve management of these riparian areas. The assumption here is that everyone came willing to collaborate and put the goal of riparian recovery above their own personal or professional interests. The Wildlife Agency representative responded by asserting his own view of the system, which framed issues at a regional, rather than site-specific scale. He weakly attempted resolution by offering to consider monitoring data collected at this site in regional decisions about herd management, subsequently offering agency funds to build monitoring exclosures. However, he then closed off opportunities for dialog with an opaque reference to "other decision-making processes" and a reaffirmation of the agency's prerogative to maintain control over "how we manage those herds." Beyond those brief comments, he did not engage in further discussion of site interpretation or specific management strategies. Although he had expert knowledge on this topic, he suppressed his own views and superficially participated in workshop discussions since they did not benefit his interests. Thus on the topic of elk, we found that stakeholders' power to affect the situation, their underlying interests, and relationships with others affected the knowledge shared and the ability to engage in dialog.

Reflecting on Collaboration in the Workshop

Reflecting on the success of this field day and the whole series of workshops, facilitators congratulated this group for making progress toward what they described as the long, slow, challenging process of collaboration. They were impressed with the high number of ranchers and other stakeholders in attendance and the trust they witnessed

between ranchers and FS staff, specifically naming FS Leadership and Range Specialists. They felt this success should be shared with others and invited the workshop organizers to talk about their leadership in this collaborative effort at a national conference on sustainable ranching.

Ranchers echoed the facilitators' comments and added that good relationships with FS staff led to good management decisions and ultimately progress towards riparian recovery. FS Leadership and Range Specialists echoed the facilitators' excitement over the number of ranchers in attendance. Forest Service Leadership, who are interested in maintaining good public relations, thanked everyone for the opportunity to learn together urging participants "to continue this collaborative spirit." We found stakeholders, who generally supported the *agricultural science* discourse, including facilitators, ranchers, FS Leadership and Range Specialists, emphasized a feeling of solidarity that everyone was working together to improve riparian conditions.

In contrast, FS Resource Specialists and Wildlife Agency staff did not comment on collaboration or the success of the workshop. The excitement and public appeal associated with the idea of successful collaboration made it difficult for individuals who felt marginalized in workshop discussions to share dissenting views. Stakeholders whose views contrasted with the *agricultural science* discourse, such as Resource Specialists and Wildlife Agency staff, had lower mean repeat attendance in the workshops (Table 2-2). Ironically, these were the stakeholder groups that workshop organizers sought to engage.

Comparing Workshop Discussions to Management Decisions

In contrast to the power held by facilitators in the workshops, FS staff held the power of decision-making on the National Forest. In the draft management plan that

was published one year later, the Forest Service allowed limited livestock grazing in the riparian areas visited during the workshop, despite concerns about erosion. The decision outlined an adaptive management approach that requires adjustments to grazing on the basis of monitoring results and construction of a livestock exclosure to determine the potential for recovery. Yet, the plan also indicates that erosion at the workshop field sites is unsatisfactory and that recovery could be achieved faster if livestock grazing were excluded. From the section of the management plan that refers to these sites:

Some wet meadows have degraded to [unsatisfactory] condition after having been type converted and small headcuts forming a channel where no channel belongs. Concentrated flows from compacted soils and rapid runoff result in soil erosion, draining of the water table and overall loss of wetland acreage. Recovery from this degraded state takes long, though an upward trend can be achieved in a few years if left undisturbed.

This description does not match the consensus view of current conditions that facilitators established in the workshop, nor does it reflect the facilitators' view of managing uncertainty. Instead, this FS decision illustrates a nuanced understanding of riparian management that goes beyond repetition of existing discourses to blend agricultural science and environmentalist discourses.

In the workshop discussions and the management plan, FS staff explained that they only allowed grazing in these problem areas because of the ranchers' active participation in planning meetings over the previous two years, which established the trust and communication needed to implement adaptive grazing management. Although our findings indicate that dialog in the workshop was limited in some ways, the claims from the management plan indicate some level of dialogic engagement among FS

Leadership, FS Range Specialists, FS Resource Specialists, ranchers permitted to graze the sites, and to a lesser extent facilitators.

Concluding Remarks

Collaborative processes require substantial investment of effort and resources, and leaders are often willing to make this investment because they expect it will further their interests. In this study, we found that workshop organizers and facilitators emphasized the *agricultural science* discourse in ways which promoted their interests in sustainable ranching over an exploration of alternative perspectives. This became problematic as facilitators simultaneously guided collaborative problem-solving and instructed participants how to interpret riparian function, in an effort to build their technical capacity. Facilitators used their dual power as discussion leaders and riparian experts to normalize the *agricultural science* discourse as the best approach to interpreting and managing riparian systems. As facilitators worked with participants to build a shared understanding of the system, they emphasized their expert knowledge and dismissed or rejected alternative views, which undermined trust in a fair process and marginalized some important stakeholders who had power to influence the FS plan, such as the FS Resource Specialists. These findings illustrate the pitfalls of over-emphasizing a shared understanding of the system when diverse stakeholders inherently have different interests and perspectives (e.g. Leeuwis, 2000). Pushing for consensus before encouraging an exploration of alternative views merely gives powerful stakeholders a forum to disseminate their own views (Healy, 2009). In this sense, advocacy of a single discourse can increase polarization around contentious issues (Putnam and Wondolleck, 2003); whereas, dialog and negotiation at the interpersonal

level can lead to innovation and productive interaction as stakeholders blend and hybridize existing discourses (Innes and Booher, 1999).

While in this case workshop organizers and facilitators promoted an *agricultural science* discourse, in many other instances conservation organizations may use collaborative processes to push for consensus around conservation discourses without first creating space for dialog. Unfortunately, the satisfying appearance of a large group of mixed stakeholders can mask a process dominated by one perspective, which can fuel further polarization on contentious issues. When leaders and participants of collaborative processes carefully consider how to manage differences in perspectives and power and more deliberately focus on encouraging productive dialog, collaborative processes are more likely to go beyond existing conclusions to enhance learning, transform relationships, and result in long-term commitments to adaptive decision-making. Although the facilitation team in this study had individuals who specialized in process management, these individuals, along with the technical specialists on the team, had strong convictions about the sustainability of livestock grazing and the roles that agency staff and ranchers should take in management planning.

Leaders in resource management can benefit from carefully considering their own interests, and whether they are willing to commit to collaboration, with its focus on dialog and engagement above a particular outcome, or whether their interests are better served by strategic actions, such as advocacy campaigns and coalition building. While the distinction between collaboration and strategic action is not always clear, we caution that certain types of strategic actions, particularly those which accentuate differences and polarize stakeholder views, can limit opportunities to later engage in dialog.

Partnering with diverse stakeholders to plan collaborative processes is one strategy to create trust and power-sharing at deeper levels (Arnold and Fernandez-Gimenez, 2007). Diverse stakeholders will also be more willing to participate if collaborative leaders elicit their feedback and incorporate their suggestions into future activities. We suggested both of these strategies for planning future workshops. A lack of mechanisms for participant feedback could be a warning sign that leaders are deliberately using a collaborative process to pursue their own interests, or it could indicate a lack of awareness of their influence on the power dynamics of group learning and decision-making.

Studies, like this one, that examine collaborative processes with a critical lens can contribute to a more realistic understanding of the power dynamics underlying adaptive collaborative management and stakeholder engagement more broadly. In this study, we have shown how power, interests and relationships shape the knowledge stakeholders consider to be truthful, and how language can be used to open and explore differences or to polarize, suppress and bracket differences. This suggests that adaptive management in complex social-ecological systems requires negotiation among diverse “knowers” and “actors,” not simply dissemination of expert solutions. With this study, we encourage leaders and participants of adaptive collaborative management to become more aware of the value of dialog to challenge problematic power relations and enhance collaborative learning and adaptive decision-making.

Table 2-1. Dates, locations and number of participants for the series of riparian workshops held on the Sprucedale NF in 2009. Transcripts from the June 23 workshop were used for in-depth analysis in this study.

Date	Workshop Topic	Location	Number of Participants
Feb 3	Consensus Building – Build trust and identify problems	Indoor	60
Feb 4	Consensus Building – Discuss problems and collaborative solutions	Indoor	51
June 22	Riparian assessment – Presentations	Indoor	59
June 23	Riparian assessment – Field practice	High elevation sites	40
June 24	Riparian assessment – Field practice	Mid elevation sites	32
June 25	Riparian assessment – Field practice	Low elevation sites	27
Aug 25	Riparian monitoring – Presentations	Indoor	50
Aug 26	Riparian monitoring – Field practice	High elevation site	49
Aug 27	Riparian monitoring – Presentations	Indoor	38
		Mean participants per workshop	45
		Total participants	117

Table 2-2. Stakeholder participation in the series of workshops (left columns) compared to participation in the workshop analyzed in this study (right columns). Stakeholder groups are arranged in order of mean days attended per person, which loosely represents each stakeholder group's commitment to the series of workshops. "Number of speakers" is the number of participants who spoke during recorded workshop discussions. A "speaking turn" was counted each time a new speaker started talking or when a speaker changed topics.

Stakeholder group	Number of workshop participants	Percent female	Mean days attended per person	Number of participants at June 23 workshop	Percent female	Number of speakers at June 23 workshop	Percentage of speaking turns
Facilitators	9	22%	5	6	17%	6	52%
University affiliates	11	57%	5	5	80%	3	1%
Sprucedale FS staff							
Range Specialists	9	33%	5	7	29%	3	12%
Leadership	5	60%	4	2	50%	2	8%
Fire Specialists	1	0%	3	1	0%	0	0%
Resource Specialists	11	45%	2	2	100%	2	9%
Recreation Specialists	1	0%	2	0	0%	0	0
Sprucedale Ranchers	33	43%	4	11	27%	6	12%
Other Ranchers	5	40%	3	2	0%	2	2%
Environmentalists	3	100%	3	1	100%	1	1%
Wildlife Agency staff	5	20%	2	2	0%	1	1%
Other federal agency staff	12	25%	2	2	0%	0	0
Other public	10	70%	1	0	0%	0	0
All groups	117 (total)	37% (mean)	3 (mean)	40 (total)	35% (mean)	26 (total)	100% (total)

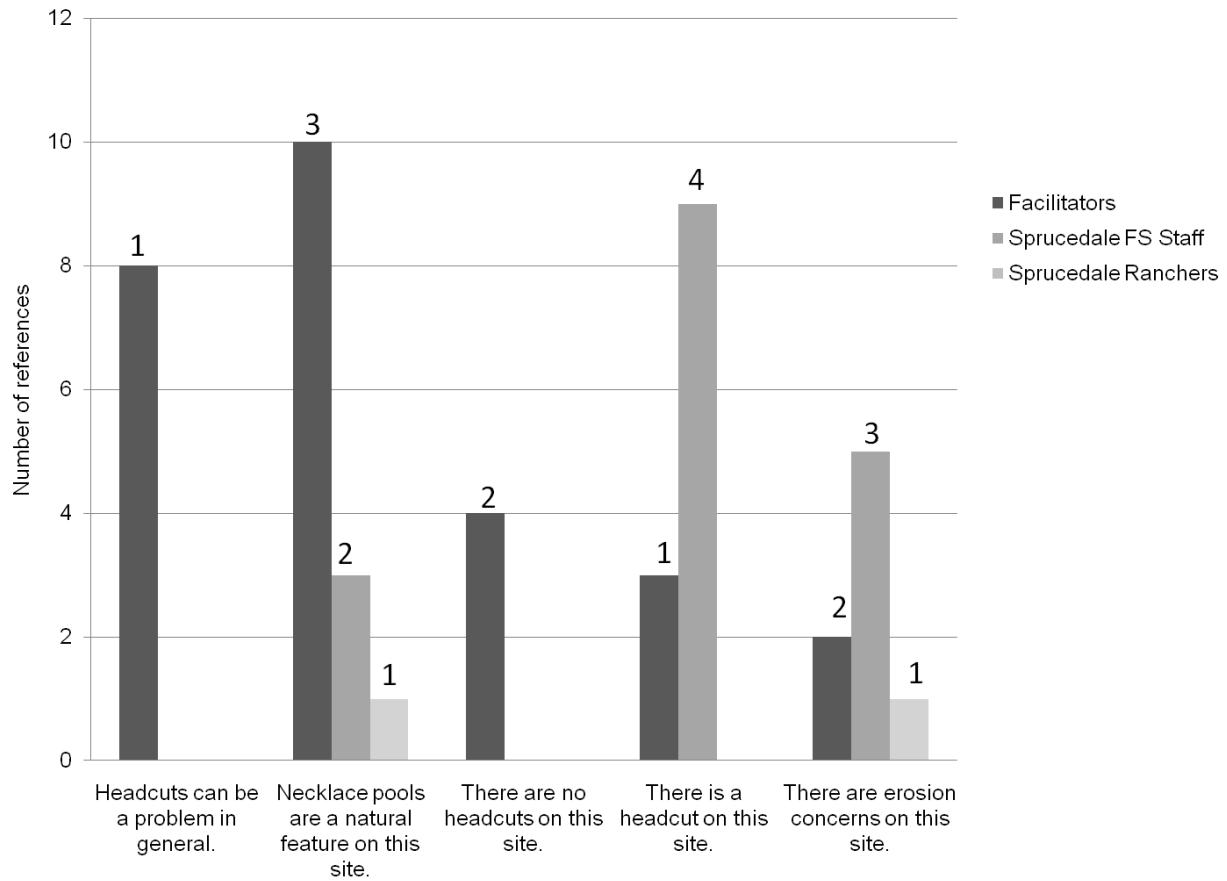


Figure 2-1. Frequency of references to erosion categorized by usage and stakeholder group. The number of speakers is indicated above each column. Groups who did not mention erosion are not shown.

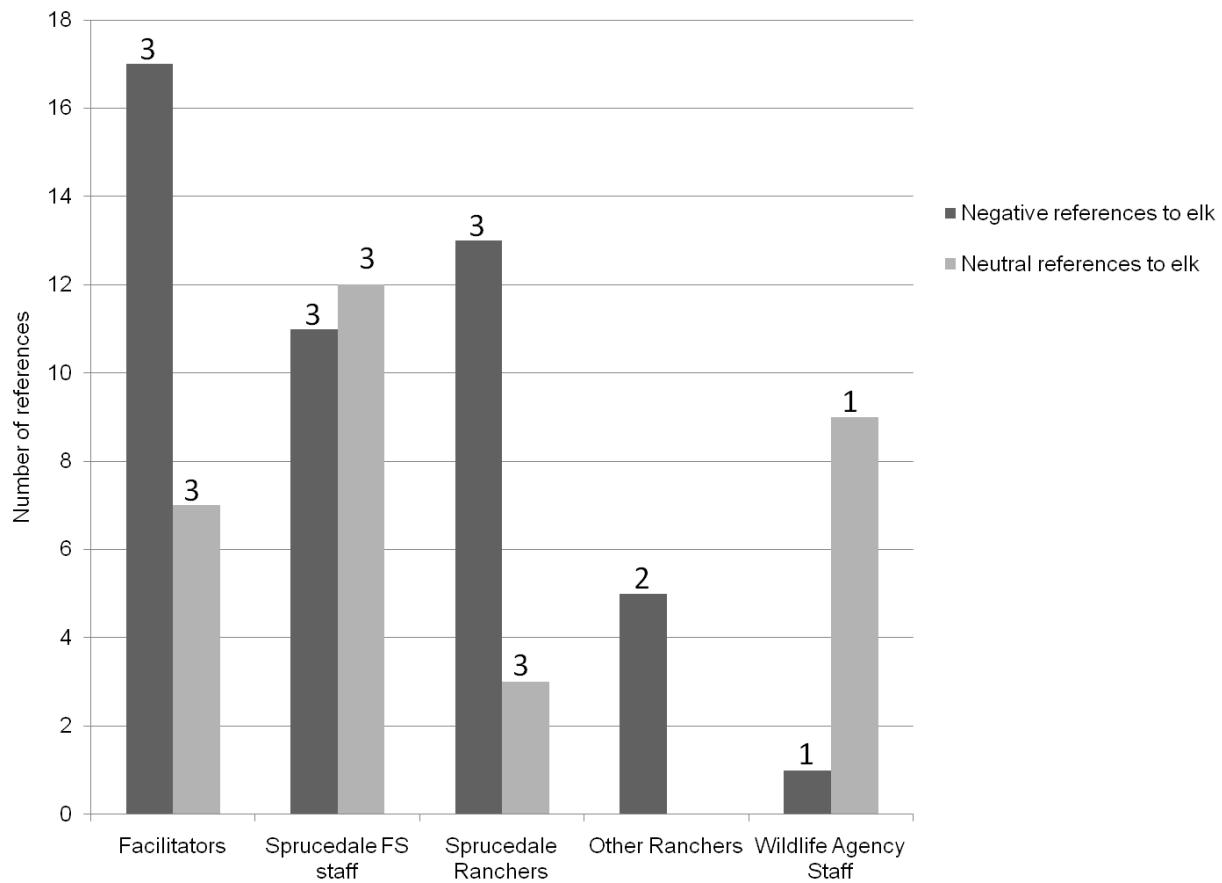


Figure 2-2. Frequency of references to elk categorized by usage and stakeholder group. The number of speakers is indicated above each column. Groups who did not mention elk are not shown.

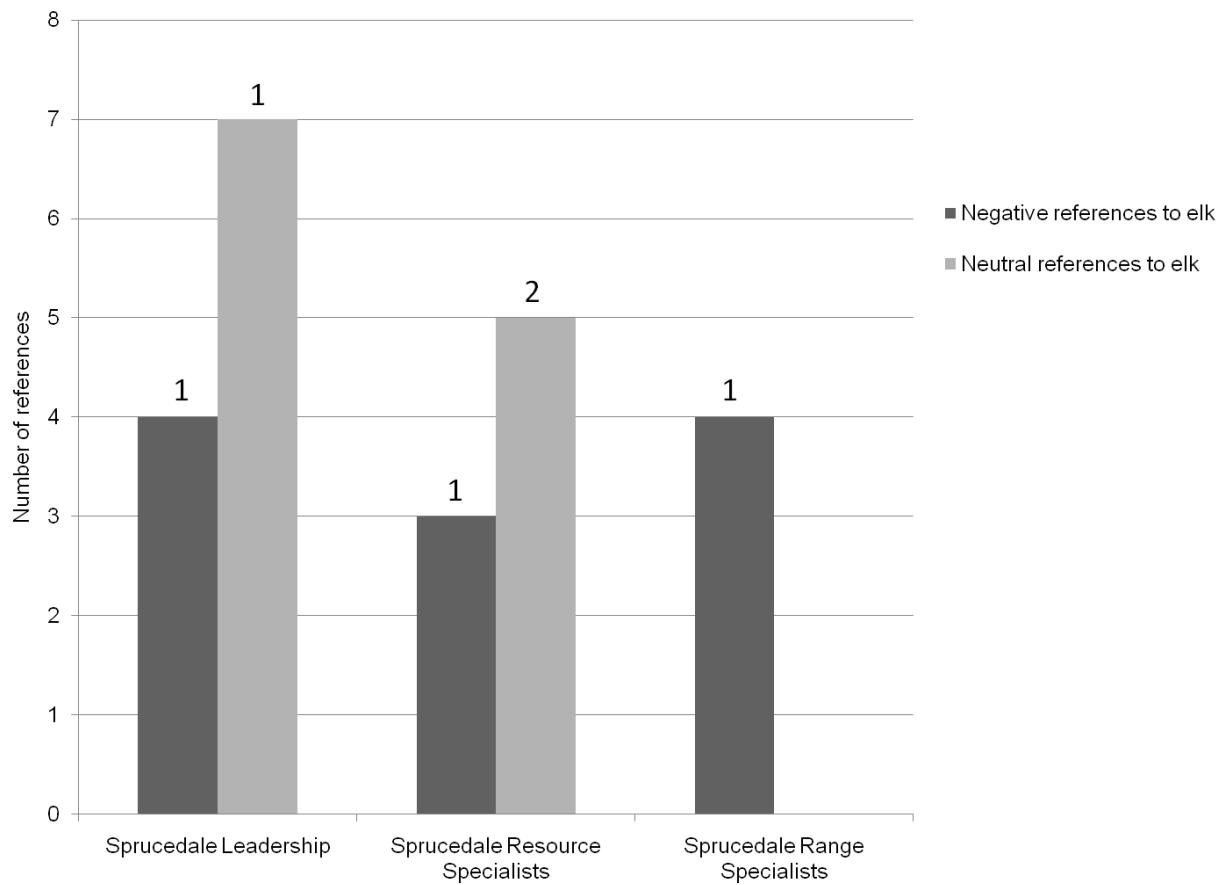


Figure 2-3. Frequency of references to elk made by Sprucedale FS Staff categorized by usage and stakeholder group. The number of speakers is indicated above each column.

CHAPTER 3

REVEALING THE POWER OF DIALOG IN FORMALIZED SPACES FOR PUBLIC PARTICIPATION: IMPLICATIONS FOR CIVIC ENGAGEMENT

Formalized participatory processes for civic engagement have become widely popular, with expectations that diverse participation will lead to increased social legitimacy for policy and management decisions. The design of these processes are largely grounded in Habermas's concept of the public sphere (Fung, 2003), where citizens, government officials and other stakeholders are convened to deliberate on public issues and establish consensus (Habermas, 1989). Formalized processes are frequently initiated in response to controversial decisions with hopes that participants will learn to appreciate the perspectives of other stakeholders and communicate with each other respectfully, even if the process does not explicitly result in consensus-based decisions (Fung, 2003; Wollenberg et al., 2005). In this sense, these public spaces are somewhat analogous to the formalized spaces of civics classrooms where teachers facilitate discussions on controversial issues and model respect for diversity, with expectations that student learning will have impact beyond the classroom (e.g. Parker, 2006). However, in contrast to the classroom, public participatory spaces typically involve government officials and other individuals who have the power to effect change. People are often motivated to participate because they expect discussions will influence decision-making.

Historically, researchers examining power in these participatory spaces have investigated the visible manifestations of power, for example asking "who participated, who benefited and who lost," while more recent work examines how participant voices are differentially amplified, silenced, or subsumed by these formalized processes (Gaventa, 2004: 37). The role of experts in these processes can be especially

problematic if the superiority of expert knowledge is left unquestioned, leading to systematic marginalization of those participants whose views do not align with expert conclusions (Fraser, 1992; Fischer, 2000). Critical research examining power in these participatory spaces often combines ethnography or case study research with Foucauldian analysis to examine tensions between the structure of these processes and the agency of the participants who shape them (e.g. Aylett, 2010). Yet few studies have examined how power is subtly, perhaps even unconsciously, enacted in these spaces as participants use micro level discourse to interact with each other and manage differences.

In this study focused on civic engagement in environmental management, we examined how diverse participants in a series of participatory workshops negotiated power and meaning relative to the controversial issue of livestock grazing on public lands in the western USA. Because of strong convictions about environmental conservation, sustainable agriculture and wildlife management, individuals and social groups have become polarized on this issue as they compete to influence how government agencies manage public lands and whether they allow livestock access (e.g. Brown and McDonald, 1995). With this research, we analyzed micro level discourse from a series of participatory workshops to identify patterns in participant interactions, which we then interpreted relative to macro level discourses that have historically polarized social groups on this issue. These workshops were part of a larger multi-year collaborative effort to empower private ranchers to influence livestock management decisions on a US National Forest, which is well-known for its high conservation values and strong agricultural heritage.

A team of professional facilitators led the workshops, which were attended by a diverse group of participants, including Forest Service staff and ranchers permitted to graze their livestock on the Forest. The workshops discussed here consisted of nine days of facilitated discussions, technical presentations, and group activities held over a seven-month period. The lead author was involved in planning and outreach for these workshops, a role which allowed her to personally get to know participants who held a diversity of perspectives on this issue. She draws from her professional experience designing, facilitating and managing participatory processes in different cultural contexts to discuss power dynamics in these spaces.

Critical discourse theorists emphasize that language use at the micro-level both *reflects* and *constructs* the social world, such that macro-level power relations may be stabilized or transformed through the agency of individuals (Gee, 2005). Thus, structural empowerment initiatives, such as these formalized participatory processes, that seek to redistribute power at the macro-level must also consider how individuals negotiate differences at the micro level (Vavrus and Seghers, 2009; Mayes, 2010). Beyond researching these issues, critical discourse theorists like Fairclough (2006) emphasize the need for public education to increase *critical discourse awareness*, suggesting that increased awareness of how discourse is used to shape power relations can empower individuals to modify and expand their own practices to effect social change:

It is on the basis of such understandings of how discourse works within social practices that people can come to question and look beyond existing discourses, or existing relations of dominance and marginalization between social discourses, and so advance knowledge (Fairclough, 2006: 149).

With *critical discourse awareness* as our goal, we highlight the use of monolog and dialog as distinct discursive strategies that establish how citizens and government

officials orient themselves to social differences, thus shaping the possibilities for future civic engagement. We ask how are these discursive strategies used by participants in formalized participatory spaces to stabilize or transform meanings and social relations that have been historically polarized around the controversial issue of livestock grazing on public lands. While many critical discourse studies have revealed the power of dialog to open negotiation of meaning, social relations, identity, and power, especially in the classroom (e.g. (Wegerif, 2005; Hamston, 2006), we are not aware of studies that have specifically examined how monolog and dialog are used to manage interpersonal conflicts as they relate to polarization of social groups and civic engagement on controversial issues.

Reframing Participation from Habermas to Bakhtin

While Habermas' theory of communicative action emphasizes 'knowing' as grounded in a rational process of argumentation that is ideally divorced from strategic interests and relationships (Dews, 1999), Bakhtin's dialogic theory frames 'knowing' as inextricably linked to social relations (Nikulin, 1998). Bakhtin describes this process of understanding with the term *inter-illumination*, such that neither speaker nor listener can understand the full meaning of what is expressed in conversation. Instead, understanding is illuminated through the social bond that connects speaker and listener. Thus, Bakhtin's framing of the 'public good' emphasizes appreciation for a multiplicity of voices, rather than Habermas's unified consensus. This pluralistic approach encourages increased connectivity among people with diverse perspectives and sources of power (Bakhtin and Emerson, 1984). Bakhtin himself draws a stark contrast between the dialectic process of rational argumentation and his own dialogic theory of relational knowing: "Dialogue and dialectics. Take a dialog and remove the voices...remove the

intonations...carve out abstract concepts and judgments from living words and responses, cram everything into one abstract consciousness—and that's how you get dialectics" (Bakhtin and Emerson, 1984): xxxii). (See Appendix C for further explanation of Bakhtin's dialogic theory.)

While some researchers still mistakenly conflate Bakhtin's concept of dialog with argumentative debate (e.g. Reznitskaya et al., 2009), others distinguish the unique value of dialog to stimulate creativity (Wegerif, 2008) and promote equitable social relations among culturally diverse groups (Hamston, 2006). Similarly, in this paper we shift the framing of participation and public empowerment in these formalized spaces from Habermas' modernist view of 'objective' deliberation to Bakhtin's postmodernist view of dialogic engagement. This dialogic framing of participation and empowerment creates new opportunities to critically study and influence the design of these formalized processes.

In environmental management, many authors emphasize the fundamental importance of listening and dialog to the quality of participatory processes (e.g. Daniels and Walker, 2001; Fischer, 2009), yet Bakhtin's dialogic theory is rarely cited (i.e. Cornwall, 2004; Stevens, 2007). Frequently when the value of dialog is discussed, it is in terms of how to structurally create more time and space to explore alternative views before drawing conclusions (Innes, 2004), for example promoting a 'toolkit' approach to participation with standardized activities like *deferred consensus* and *issues forums* (Hamilton and Wills-Toker, 2006). In contrast, Bakhtin's dialogic theory fundamentally links the possibility of dialog to participants' personal willingness to open up to

difference, which cannot be structurally imposed but requires negotiation of power at the personal level.

Similarly, critical discourse studies in education, which examine the implementation of critical pedagogy, find that effective structures for empowerment must allow space for teachers and students to negotiate meaning, identity and social relations relative to their needs and interests (Hamston, 2006; Mayes, 2010). Hamston (2006) found that this level of dialog, in the context of an Australian social studies curriculum, empowered students to negotiate concepts of nationality relative to their own sense of 'becoming'. Students developed an appreciation of their complex identities, rather than simply adopting society's dominant categories of race, ethnicity and nationality. Thus, curriculum implementation was effective in that it was "productive and disruptive, rather than merely reproductive" (Hamston, 2006): 70). Further, Wegerif (2008), who studied creativity and problem-solving among young children, identified that teachers who overemphasized structural approaches to group problem-solving limited possibilities for dialogic engagement and thus constrained the creativity potential of small groups. Like Wegerif and Hamston, we value dialog as an emergent, disruptive process that creates space for new meanings to emerge. However in contrast to these studies with children, power relations among participants in this study are further complicated by their shared history of conflict.

Dialog and Monolog in Critical Discourse Analysis

Bakhtin distinguishes dialog and monolog relative to the relationship between self and 'other' (Bakhtin and Emerson, 1984). Likewise, Fairclough and other critical discourse theorists are fundamentally concerned with how individuals and institutions orient themselves to social difference (Fairclough, 2008). Traditionally, critical discourse

research has drawn attention to social inequalities related to race, ethnicity, gender, class, culture, and political affiliation (van Dijk, 1993). However, in this study dealing with controversial issues, we found that identification with one of several competing discourses of environmental management was the most salient aspect of social difference around which participants oriented themselves and essentialized others—for example, identification with competing discourses of environmental conservation, sustainable agriculture and wildlife management.

Fairclough (2008) provides several analytic approaches to examine how individuals manage differences with respect to Bakhtin's dialogic theory. Related to Bakthin's concept of *heteroglossia*, which recognizes the multiplicity of meanings embedded in language, Fairclough examines *intertextuality*, which is the presence of embedded references to other texts or previously established meanings. He finds statements are generally more dialogic when embedded meanings are explicitly attributed, such that sources are directly referenced or quoted. Explicit references open up an individual's views for others to consider and explore. Statements are less dialogic when embedded meanings are implied, using standard or non-standard conversational implicatures. (See Appendix D for further explanation of conversational implicatures.)

Yet, Fairclough's interpretation of *intertextuality* as a continuum of explicit to implicit embedded references does not directly equate with Bakthin's dialogicality (Lesic-Thomas, 2005). For instance, even explicit quotes can be used to negatively portray others in a way that closes off opportunities for dialog, and implicit meanings can be used to encourage inclusivity and solidarity within a group, which could establish the trust and comfort needed to express unpopular views. Also, non-standard

conversational implicatures can be used as a politeness strategy to raise difficult issues while preserving the dignity and positive self-image of those engaged in conversation (Brown and Levinson, 2006).

For this reason, we also consider the certainty that speakers use to convey meaning, which links to Bakhtin's concept of the *unfinalizability* of knowing, an important aspect of dialog. Fairclough (2008) highlights the use of modalized statements of uncertainty, such as "seems like" or "could be," to indicate a speaker's recognition of their own incomplete knowledge and an openness to other perspectives and other meanings. When a speaker uses a combination of explicit references and expressions of uncertainty, we identify this as a *dialogic opening* since it invites other speakers to explore and build on what was previously said, thus creating an opportunity to open meanings for reinterpretation and move beyond polarization. These openings often include questions, which can be difficult to interpret (Fairclough, 2008). Questions can be used to signal an openness to other meanings or, conversely, to universalize implicit assumptions, as in monolog (Wang, 2006).

Fairclough (2008) identifies monologic speakers as those who express strong convictions about their views of self and others, using explicit or more often implicit references. In addition, monologic speakers often identify themselves as experts and legitimize their views using expert status or other forms of authority that discourage consideration of alternative meanings. In environmental management, Healy (2009) refers to this as the 'deficit model' of public policy, where it is assumed that citizens will agree with expert-driven management decisions once they have the expert knowledge to 'properly' understand the issues. When expert knowledge is privileged in participatory

processes, powerful actors can use the outward appearance of public participation to legitimize their expert-driven solutions, without really creating the possibility for learning or change. For example, what appear to be opening questions can be used by experts, teachers, advocates or others who have strong convictions to assert control (Dewey, 1997; Freire, 1998; Wang, 2006). In these cases, although experts or authorities ask questions to elicit participant responses, they subsequently respond by rejecting or dismissing alternative meanings and authoritatively asserting a single acceptable answer. We refer to this type of discourse as *monolog disguised as dialog*.

The use of *monolog disguised as dialog* can be deceptive since it maintains the outward appearance of fair and open participation, while potentially restricting the expression of views that challenge the authority or strategic interests of those controlling the discursive space. This relates to the contemporary shift in society that pushes universities and government agencies to increasingly justify their value to society or else face budget cuts and program elimination. In a democratic society, these entities are valued primarily for their orientation toward knowledge exchange and public service, with expectations that their activities are insulated from market forces and strategic interests. Yet as they are pushed to market themselves to maintain political and economic power, concerns about their image of public service may take precedence over genuine consideration of the ‘public good’ (Fairclough, 2008). Fairclough uses the term *aestheticization* to describe this trend toward marketization of the ‘public good’, which we identify in micro level discourse as *monolog disguised as dialog*.

Study Context and Methods

Here we introduce the controversial issue of livestock grazing on public lands to provide a general sense of the polarized meanings and social relations that frame our

study context. We also provide some background on the workshops, including the leaders involved in their planning and implementation, their intended purpose, the structure of activities, and overall participation levels. We conclude this section with a description of our methods.

Controversy Surrounding Livestock Grazing on Public Lands

Since the environmental movement of the 1960s, livestock grazing on public lands in the western USA has been highly controversial, especially in riparian areas, which are those sensitive vegetated areas along the margins of rivers, wetlands, and ponds that provide important habitat for endangered species and support the cycling of clean water through the watershed. Riparian areas also represent the primary water source for livestock on most public lands, leading to wide-spread conflicts associated with how riparian areas are managed. The Sprucedale¹ National Forest in the southwestern USA is well-known for its high density of riparian areas and associated endangered species. In the 1990s, political pressure associated with environmental advocacy led Sprucedale staff to reduce or eliminate livestock grazing in most riparian areas, which created deep tensions between ranchers and Forest staff, especially biologists who conducted the environmental assessments used to justify these decisions. Wildlife management on the Forest has created additional tensions since the state wildlife agency has allowed elk populations to increase despite their negative impacts to riparian conditions.

Frustrated by this legacy of conflict, a group of proactive ranchers and a university professor organized this series of workshops to encourage discussion of livestock grazing and sustainable riparian management. The workshops were expected to

¹ All proper names have been changed to protect confidentiality.

increase participants' understanding of social and ecological issues, improve relationships among ranchers and Forest staff, and enhance decision-making. Quoting from publicity materials, the workshops sought to "transform conflict into collaboration for improved stewardship of riparian resources." The organizers invited a governmental facilitation team from outside the region to lead the workshops. The facilitation team specialized in managing conflicts over livestock grazing on public lands; they used standardized participatory activities to provide training and practice in consensus building and riparian management. The organizers selected these facilitators because they were enthusiastic about empowering ranchers in Forest decision-making and they understood the government culture of Forest management.

In 2009, a series of three participatory workshops, consisting of nine days of indoor activities and field trips, were held on the Sprucedale National Forest. Although some participants attended all workshops, most of the 117 participants selected one or more days to attend, depending on the topics and field trips that interested them. On average, there were 45 participants per day, representing a mix of federal and state government employees, ranchers, and other citizens. Women and men from diverse cultural and ethnic backgrounds were active in leading the workshops and participating in discussions although these aspects of diversity are not explicitly discussed here.

Data Collection

Workshop discussions during the nine days, including indoor sessions and field trips, were audio recorded and transcribed by the lead author. Because she was personally involved in workshop planning, outreach, and registration during the workshops, she knew most participants individually and was able to identify most speakers from the recordings. Participants helped distribute hand-held digital recorders

throughout the group, and speakers used an amplified microphone when available. Structured turn-taking consistently enforced by the facilitators virtually eliminated the problem of multiple participants speaking at the same time, which can impede transcription. Small group activities could not be transcribed due to high background noise. However, facilitators asked all small groups to report back to the whole group, and this was included in the recorded and transcribed data.

Data Analysis

Working with the complete transcripts, we analyzed turn-taking to identify who spoke and how they used their turns. We particularly focused on structural aspects of the facilitators' turns, identifying instances where they used standardized activities or scripts to guide participant interactions. In many cases, they explicitly described the purpose of these standardized activities for the benefit of participants. We also identified all interruptions, which disrupted the flow of activities as in comments or changes in topics, and questions, which occurred either as interruptions or during scheduled question periods. These allowed us to understand how participants exercised their agency in response to the structure of activities and facilitators' instructions.

We analyzed the linguistic characteristics of these segments of data, identifying dialogic language as a combination of explicit attributions and expressions of uncertainty and, conversely, monologic language as a combination of expressions of certainty, legitimization based on authority, and/or use of implicit assumptions. We then looked at the context of these data segments to understand how individuals responded to these different discursive strategies. We also thematically coded the data to identify controversial topics, where participants expressed strong emotions in response to alternative perspectives. The first author followed up on these themes after the

workshops by speaking individually with participants who expressed a range views on these topics. Her personal relationships with participants enabled her to interpret participant interactions in the workshop relative to macro level discourses and social relations. Together, these layers of detailed, systematic analysis allowed us to select the examples of monolog and dialog presented here to represent patterns of discourse and social interactions found throughout the complete body of data.

Discursive Strategies Used in Participatory Workshops

In the following sections, we discuss a range of discursive strategies from the workshops relative to their macro level context. With the first example, we explain how monolog and *monolog disguised as dialog* were used by a facilitator in structured activities to reproduce his particular perspective on controversial issues, which reinforced divisions between polarized social groups. We then present an example of *monolog disguised as dialog* used by a participant in discussion to assert her particular perspective and reject alternative meanings. In contrast, we discuss an example of dialog, where a relatively powerful participant initiated a *dialogic opening* that invited expression of alternative views. We discuss the importance of *dialogic leaders*, who use their power within these spaces to promote dialogic interactions. We reveal how this ‘disruption’ effectively produced subsequent waves of dialog that extended beyond the formalized spaces of the workshops.

Monolog as a Structural Element of Formalized ‘Participation’

The following monolog comes from a standardized activity that facilitators used in the first day of the consensus building workshop to visually demonstrate how conflicts develop. In this activity, the lead facilitator, Ken, walked participants through his interpretation of the history of conflict over livestock grazing on public lands. As he

narrated the story, he selected participants to take on the roles of the characters mentioned. Participants were not asked to speak during this activity, but rather Ken positioned them in the center of the room to visually demonstrate the unfolding conflict, while others remained seated in a circle around them.

In this passage, Ken confidently described the actions and intentions of a diversity of social groups, as if he were presenting a common sense interpretation of facts. Fairclough (2008) warns that groups in conflict over meaning tend to promote their own interpretations as common sense in an effort to universalize their particular meanings and assert influence over others. Throughout this activity, Ken makes implicit evaluations justifying and defending the ranchers' actions and some Forest Service actions, while critiquing or objectifying other groups, such as environmentalists and Forest biologists. This portrayal reinforces historic divisions between social groups on this controversial issue.

Ken: About 1860, ranchers came here because people needed to eat. Ranchers came out here, A, because they wanted to feed the people, and B, they wanted to make money. They wanted to support their family. They did not come here with the intention to trash the landscape. ((clearing his throat)) But so many ranchers came, actually, it wasn't so many ranchers, so many animals came, that all of a sudden the landscape, for a while, the lands started to come apart. ... You would get a high rain, and dirt and stuff would literally just roll off the mountainside. ... And Teresa's ((Ken brings Teresa, a rancher, to the middle of the room)) been out here working really hard, trying to make a living, trying to get every blade of grass before somebody else gets it, with their sheep, their horse, or their cows.

Characteristic of monolog, Ken's comments in this passage were infused with certainty and implicit statements characterizing others. He implicitly justified the ranchers' actions of the past and defended their character by repeating their good intentions "to feed the people" and "support their families." He de-emphasized their individual responsibility in past environmental degradation by justifying it as a classic

tragedy of the commons, “trying to get every blade of grass before somebody else gets it.” He blurred past and present when he used Teresa’s name in the story to logically imply that the justifications he provided for the historic ranchers also applied to the current ranchers. This conveyed Ken’s respect for and solidarity with the ranchers in the room. Because of his authority as the lead facilitator, his positive portrayal of the ranchers increased the legitimacy of their views in the workshop. Implicit statements such as these that promote solidarity may establish the comfort and trust needed for individuals to express unpopular views within a diverse group (Fairclough, 2008).

However, in addition to these implicit statements favoring ranchers, Ken also implicitly rejected alternative interpretations. The statement, “They did not come here with the intention to trash the landscape,” is an implicit rejection of a well-known environmentalist claim that ranchers will try to maximize profit at the expense of environmental quality. Characteristic of monolog, Ken did not explicitly introduce this as an alternative interpretation, he did not attribute this alternative to a specific person or social group, nor did he consider the possibility that there might be some truth to this perspective, for example that some ranchers may fit this description. Thus, he implicitly rejected this alternative view even though there were environmentalists and biologists in the room who may have identified with this interpretation of history. Rather than creating openings for dialog on this historically contentious issue, Ken reinforced polarized meanings and relationships. In the following passage, his monolog of the conflict situation continued, switching his focus to Forest staff.

Ken: In 1905, Teddy, President Teddy Roosevelt and a guy named Gifford Pinchot got together and said, you know, we need to take care of these areas. ... So, that's what happened. The Forest Service was created, in part, to take, take, uh, management control, so that we can have perpetual

natural resource management. And in doing so, it caused conflict between the ranchers and the Forest Service. ...They had so many cows, so many sheep, so many horses, that across the west, most of the range systems were really badly beaten. ...And Robert ((Ken brings Robert, the Forest manager, to the middle of the room and instructs Teresa and Robert to pull against each other)) was out here, trying to reduce stocking. That's always been the Forest Service answer, to, to improving range condition was with reduced stocking.

Here, Ken continued with the same certainty, explaining the motivations of former President Roosevelt and Gifford Pinchot, the first chief of the Forest Service, this time using the pronoun “we” referencing his many years as a Forest Service employee and signaling his solidarity with other Forest staff. He logically implied their good intentions saying “we need to take care of these lands.” He confidently asserted that their decision to “take management, uh, control” was the source of the conflict between ranchers and Forest Service staff.

Although generally expressing solidarity with the Forest Service, Ken implicitly critiqued their management approach with the phrase “that’s always been the Forest Service answer....” This implies the Forest Service’s handling of the problem had been inadequate since they “always” used the same “answer,” and yet there was still conflict. The historic struggle on this stocking issue, which refers to the number of animals allowed to graze an area, has generally been between ranchers who want more animals to protect against economic losses such as drought and disease, and land managers who want fewer animals to limit environmental impacts that could be exacerbated by droughts, floods and fire. Ken’s implied critique dismissed the view that reduced stocking was a legitimate strategy, which favored ranchers in the room who fought against reduced stocking and discounted the views of Forest staff in the room who used reduced stocking as a strategy to meet management objectives. By naming Robert in

this passage, who is an actual Sprucedale manager, and using the word “always,” he again blurred past and present implying that Robert unnecessarily promoted reduced stocking. However, many people in the room considered Robert and his staff well-known for their innovative management strategies, which also included reduced stocking.

In this final passage of the story, Ken introduced several other actors to the situation, including environmentalists and biologists. However, he presented them as one dimensional characters. He talked only about their resistance to the Forest manager, rather than explaining the motivations for their actions as he did for the ranchers and Forest managers.

Ken: And then by the time we get to 19, oh, ((Ken sighs)) 1960, ... we had the environmentalists out here. ((Ken selects a participant to represent the environmentalist.)) Robert ((the Forest manger)) is being pulled apart at the middle. Robert wants to do the right thing for the resource, but it's not perfect. So, because ((the environmentalist)) is not quite strong enough to pull him all the way over, she hires an attorney. ((Several people laugh)) Grab him and pull. ... And the association of grazing. ((Ken selects a rancher to represent the grazing association.)) So we're constantly trying to balance. ((A rancher yells out a joke, several people laugh and continue talking in the background.)) ... We have ((laughing)) all that stuff, and here is Robert ((the Forest manger)) in the middle. And you know, Robert now has a staff that includes, oh my God, ologists. Biologists, hydrologists, soil scientists, archeologist, all of those kinds of things. So these people have built up and pulled back against you. ((Ken directs characters to pull against Robert in different directions.))

As Ken directed the characters to pull Robert in different directions, he implied that some people were dissatisfied with management. Yet Ken reiterated the manager's good intentions saying “Robert wants to do the right thing for the resource, but it's not perfect.” In contrast, Ken dismissed Robert's staff exclaiming “oh my God, ologists” and subsequently objectified and trivialized them as “all those kinds of things.” These expressions imply that “ologists” were not needed or helpful to decision-making.

Further, by only describing their role relative to Robert, Ken silently dismissed the complexity and legitimacy of the views of the “ologists” in the room. Toward the end of the story, some people yelled out humorous comments and laughed, especially the ranchers, who seemed to enjoy Ken’s interpretation of the conflict and the physical silliness of the activity.

Thus, by confidently asserting an authoritative view of the conflict situation, Ken used monolog to reduce the complexity and layered meanings associated with this controversial issue. Although Ken’s monolog legitimized the ranchers’ perspectives and they seemed to enjoy this activity, this discursive strategy did not encourage them to consider other perspectives. Instead of creating opportunities for participants to explore differences in meaning, identity and social relations, Ken reinforced stereotypical views for each of the main social groups involved in the conflict, implicitly favoring ranchers and, to a lesser extent, Forest managers, while implicitly dismissing biologists and environmentalists. Since this occurred on the first day of the series of workshops and Ken was the main facilitator for most days, this scripted monolog, as part of the formalized participatory structure, set the tone for many future activities, even those facilitated for increased participant discussion.

Monolog Disguised as Dialog: A Facilitator’s Example

Finally, Ken ended this story-telling activity by posing a series of questions that superficially appeared to open up discussion, but with closer examination, they illustrate what we refer to as *monolog disguised as dialog*, where the questions logically imply only one acceptable answer.

Ken: Now the question is, given all this, what’s happening to the riparian areas? ... Do you want healthy creeks?

Female: Yeah.

Ken: Entities that work together and stuff? Okay, so if you're going to do that, how would you like to see people working together? How would you arrange these people, so that they're actually working together instead of pulling them apart?

Female: Um. ((pause, laughing)) I would put them in a circle.

Ken: Okay, so you guys loop around here. You too, you're part of this. Now.

Margaret ((rancher)): Aw.

Ken: So this is what we're trying to create. ((laughing))

Although Ken posed an opening question, "What's happening to the riparian areas?" he prefaced it with the phrase "given all this" to logically imply that his story was an accepted account of the history of conflict and closed to discussion. When participants did not respond, he posed more and more focused questions that guided participants to a single conclusion from "How would you like to see people working together...?" to "How would you arrange these people, so that they're actually working together instead of pulling them apart?" Again, by juxtaposing these two questions, he blurred the real life context of the first question with the fictionalized context of the second question. The logical implication was that people pulling themselves apart is bad and people working together is good. A female responded with the simple answer he was looking for, "put them in a circle," and he moved them around to where the characters were holding hands in a circle. A female rancher jokingly responded with an extended, "Aw," acknowledging the sentimentality of this 'happy ending'. Ken confidently concluded the activity, saying "this is what we're trying to create" implying that what he just modeled in the activity was a simplified version of the ideal consensus building and conflict management process that the facilitators would lead the group

through over the course of the workshops. After a period of laughing and applause, Ken introduced the next activity without time for questions or comments.

The premise of Ken's conclusion was that everyone would prefer working together instead of pulling each other apart, even though Ken himself, in the monologic telling of the story, contributed to the 'pulling apart' of ranchers and biologists or environmentalists. Further, Ken's 'happy ending' conclusion is a clear example of Fairclough's *aestheticization* where he presented an outwardly positive image of the workshops as structures that can teach participants to transform long-standing conflicts, even though in his monologic telling of the story, he reinforced his own view of the situation, which favored certain social groups over others and reproduced divisions between them (Fairclough, 2008).

Monolog Disguised as Dialog: A Participant's Example

Monologic discourse was also expressed by participants. The following example comes from a field workshop, where the facilitators and Forest staff led a discussion assessing current field conditions. The site was considered degraded, and the group discussed the extent of degradation and possible causes. When Forest staff pointed to numerous dead willow trees, a facilitator commented that it was difficult to know the extent or cause of willow decline because of lack of information. Sandra, a Forest biologist, explained that a researcher had previously studied the decline of willows in this area, suggesting that reduced water flow limited their ability to grow here. During this unstructured period of discussion, Patricia, one of the lead ranchers who helped organize the workshops, asked to speak. Although she introduced her contribution as questions, they were rhetorical questions that logically implied her particular view of the situation was the correct one.

Ken: Patricia.

Patricia: Well, I guess I have two questions. One is, um, I think that Sandra ((the biologist)) said that, they, whatever the guy was, that was studying willows here, that they, he began to study them in the '70s. Is that when he began to document the decline of the willows?

Sandra: Yes.

Patricia: And when did we experience the increase in elk herds here? ((pause)) How about the '70s? ((pause)) Okay. And then, my.

Ken: So you are actually making a statement. ((laughing))

Patricia: No I asked a question, but nobody answered it. Okay, the next question that I have is...

Although Patricia explicitly referenced Sandra's comment about willow research, she referenced only the parts of Sandra's explanation that supported her own view of the situation, thus constraining Sandra's words into a logical argument that rejected Sandra's original meaning. By juxtaposing these questions and answers, Patricia logically implied that elk were the cause of willow decline, not reduced water flow as Sandra had explained. The view that elk are the primary cause of the problem shifts responsibility for degradation away from livestock. Sandra and Patricia, both known as strong women with contrasting views of conservation, already had a strained relationship, and this interaction further reinforced those tensions between this biologist and rancher.

Ken challenged Patricia when he described her comment as "actually a statement." By drawing attention to this point, he implied that a question would have been more appropriate even though Ken himself used *monolog disguised as dialog*. Because of his status as lead facilitator, it was more difficult for others to challenge him in the same way. Patricia responded to his comment with a bold denial—a clear

example of monolog where she expressed full certainty of her view and implied there were no other possible answers to her question because “nobody answered it.” This overstated what everyone already knew, that no one had spoken in response to her question, and yet at the same time the implication was that she would not have allowed any other answers. Thus at times, we found participants exercised their agency in this participatory space to reproduce polarized meanings and relationships rather than attempt transformation.

Dialogic Openings as Productive Disruptions

In contrast to these example of monolog, some important instances of dialog emerged when participants asked questions of each other. The following *dialogic opening* was initiated by Nancy, a high level Forest Service employee from the regional office, who arranged for some of the workshop funding and attended almost all of the workshops. In some ways, she could be more honest than other participants because the decisions made on this Forest did not directly affect her and she did not supervise any Sprucedale staff. Also, at the regional office, she regularly dealt with public relations issues, and so she was used to working with people who expressed a diversity of views on these controversial issues.

This passage came from a field day, and her question followed a role reversal exercise, where Ken, the lead facilitator, asked participants to talk about the possibility of allowing livestock to use a river that had been protected from grazing since the 1990s. The management of this river is highly controversial due to endangered species concerns and water quality problems, and environmental advocacy groups closely monitor management decisions here, ready to litigate if environmental regulations are not precisely followed. In this role reversal exercise conducted alongside the river, Ken

asked Forest staff to assume the role of ranchers and talk about the possibility of allowing livestock to use the river. He asked the ranchers to respond to the same question as if they were Forest managers. The purpose was to get participants to understand this controversial issue from different perspectives. However, Ken selected Forest staff who had been consistently enthusiastic about ranching to take the ranchers' role, and the ranchers spoke from their own perspective, rather than following the directions. The result was that everyone in the exercise discussed the value of ranching as an honorable livelihood and environmentally sustainable activity, and no one expressed a contrasting view despite the common understanding that this was a controversial topic.

The discussion concluded sentimentally with a few tears from some of the female ranchers. In the words of a rancher Patricia, "Ranching is a lifestyle, and for the people in this group ((Wiping her tears away, her voice trembling)) most of us have a long history of being here....And there are only two percent of us that are feeding all of America. And in my narrow minded perspective, we're a pretty important two percent." One of the facilitators responded to Patricia and the other ranchers, attempting to normalize the sustainable agriculture discourse as common sense, "It's not a question of whether you're going to graze or not. It's a question of whether you're going to graze properly or not." This comment echoes Healy's (2009) 'deficit model' of public policy, that if people understood 'proper' grazing management, then they would accept livestock grazing without concern. Because this last comment was made authoritatively by a facilitator after a series of comments extolling the virtues of ranching, it implied that there was consensus support for ranching as a legitimate and important use of the river.

Nancy's *dialogic opening* disrupted this apparent consensus by asking ranchers to explicitly answer "What is the purpose of grazing?" By refusing to answer the question herself, she acknowledged the importance of allowing people to speak for themselves, rather than assuming she could understand and explain their motivations herself. Interestingly, Nancy was a grazing specialist who regularly advocated for ranchers and sustainable grazing, meaning that she could have easily addressed this question herself if not for her commitment to dialog.

Ken: Nancy.

Nancy: I, this is semi-rhetorical and yet, truly a sincere question, and it's building on Patricia's two percent that produces the food for the nation, and because I haven't been here before. ((pause)) One of my questions is WHAT IS the purpose of grazing what appears to be, based on maps and discussion, two percent of the land mass? ... I haven't really ever heard an expression of that, other than the little bit that was talked about today, for, for calving.... So, for this much discussion to go into it, there must be some sort of highly weighted value, to that two to three percent.

Ken: Okay, and since Nan, Nancy asked a REALLY GOOD question, I'm going to ask you to give us your perspective on how you would answer that if someone asked you.

Nancy: Well, that's why I said, it's sort of a rhetorical question. I CAN'T answer it. And, and that it was, well, sort of, partly a sincere question because I CAN answer it, but I think it's. Based on everything everybody is saying, you know, the, the ((FOREST MANAGERS)), in the ((role play)) exercise the last few minutes, didn't say, "And what is the purpose for grazing?"...

Ken: Well, let's, let's just leave it as a question to think about.

Characteristic of dialog, Nancy explicitly attributed Patricia's previous comment and acknowledged her incomplete knowledge of the area, explaining "I haven't been here before." This lies in stark contrast to Ken's confidence from the previous monolog, especially when facilitators had not worked in this area before either. She explicitly recognized the existence of alternative meanings that had not yet been considered,

tentatively using words to signal uncertainty such as “I haven’t really ever heard an expression of that” and “there must be some sort of highly weighted value.” In response, Ken the lead facilitator asked her to answer her own question, which is a common facilitation strategy, similar to the role reversal exercise; however, in this case, the purpose of her question was to create an opening for others to share their views. She admitted “I CAN answer it,” but directed attention toward others and refrained from answering. Thus, by refusing to answer, she emphasized the value of this opening and de-emphasized her own expert knowledge of sustainable grazing practices. This provides a clear example of a *dialogic opening*, where Nancy exercised her discursive agency to encourage expression of a multiplicity of voices. In this way, she framed understanding as a layering of different perspectives, as in Bakhtin’s *inter-illumination*. For this reason, we identify her as a *dialogic leader* in this discussion. Ken did not recognize this discursive strategy as an opportunity for learning, or if he did, he chose to ignore it, instead continuing with the role reversal activity.

Next, Ken asked Patrick, whose family grazed livestock on the river prior to the 1990s, to respond to what he had heard during the role reversal exercise. Patrick elaborately thanked the facilitators and the group for taking the time for this discussion which could directly impact his operations, but then rather than answering Ken’s questions, he asked permission to respond to Nancy’s question.

Patrick: But ah. ((sigh)) Real, really I’d like to go back and answer, uh—was it Nancy?

Ken: Yeah.

Patrick: —her question from my perspective. Just real quick?

Ken: Sure.

With this response, we see that Nancy's dialogic opening was productive. Despite Ken's earlier instructions to "leave it as a question to think about," she motivated Patrick to explicitly talk about his motivations and ideas for allowing livestock on the river again. Patrick started off his explanation hesitantly, with lots of pauses. Then he opened up and explained that when the cows have their calves, they benefit from the green grass close to the river and since the river is by the house, his family can protect the young calves from bear and mountain lion attacks. Ken allowed Patrick to finish his explanation without pushing him to answer the original questions. Then returning to the role reversal exercise, Ken asked Jack, the Sprucedale manager who had jurisdiction over the river, to talk about how it felt to listen to the role reversal activity and what he learned. Jack, however, also responded to Nancy's opening, rather than following Ken's instructions.

Jack: There's a lot of different perspectives out there. And I don't think that people touched on 20 percent at the most of what the issues are, that are associated with, what analysis we might have to go back into. And mostly, what I've heard is a social need. I have not yet heard articulated an ecological need to do something different here. And so that's one of the things that, ((clearing his throat)) that I think if you're going to make that kind of, uh, PROPOSAL to do that, you have to understand what the processes are that we have to go through.

In this passage, Jack explicitly acknowledged that other perspectives were not represented in the discussion, somewhat like Nancy's opening. Like Nancy, he also stopped short of explicitly sharing his own perspective, and he avoided characterizing the ranchers' intentions or justifications for opening the river to grazing. However, unlike Nancy who had no decision-making power and was not familiar with the area, as the local manager, Jack had power in this situation, and thus his perspective mattered to everyone involved. His response would have been more dialogic if he had explained his

own perspective more explicitly. By juxtaposing “mostly, what I’ve heard is a social need” and “I have not yet heard articulated an ecological need to do something different here,” he logically implied that he would need an ecological justification to reintroduce livestock on the river, but it was unclear whether this was his interpretation or if this was required by Forest policy.

Before becoming a Sprucedale manger, Jack was one of the biologists who conducted environmental assessments on this river that led to livestock removal in the 1990s. He and Patrick had known each other over fifteen years but had rarely spoken since that controversial decision was made—a clear example of polarized relationships associated with historically controversial issues. Now as a manager, Jack had to respond to the environmental activist groups that continually threatened to sue the Forest Service over the river’s management. He confidently implied in the last sentence that the ranchers did not understand what it would take to change management. After this passage, he described in some detail the process that the Forest Service would have to go through to reverse their decision. Overall, Jack’s language was somewhat dialogic since he explicitly acknowledged what he heard and didn’t hear, and he left open the possibility that there may be a legitimate reason to reintroduce livestock that had not yet been mentioned; yet, he was also guarded and less dialogic when it came to explicitly sharing his own perspective for others to consider. We interpret this guardedness as a response to the facilitators’ preferential treatment toward ranchers and their dismissive treatment of the complexities of the biologists’ views, which we found to be a consistent pattern throughout the workshops.

To conclude this discussion, Ken asked various individuals to share their final thoughts about what they had learned throughout the day. Several people used their turns to contribute to this growing dialog by explicitly attributing what had been said previously and layering their own meanings. One individual in particular, Jason, a biologist who had authority over endangered species management along the river, explicitly recognized the contrasting perspectives of those who had spoken already, including Nancy, Patrick and Patrick's wife Margaret, Jack, and a university professor. Jason also attributed those not present at the workshop, including environmental activists and the fellow biologists in his office. He layered these explicitly attributed perspectives alongside his own uncertainties about the best management decision.

Ken allowed this dialog to continue when he could have interrupted and redirected discussion, so in this sense, the structure yielded to Nancy's *dialogic opening* after all. However, dialog was only accomplished with the persistence and leadership of multiple powerful individuals, like Patrick and Jason, who used dialogic language to continue opening the discussion and pushing the emergence of new ideas and new social relations. Thus, we refer to these individuals as *dialogic leaders*. We acknowledge them directly because we found that *dialogic openings* were only sustained in the workshops through joint participation of multiple *dialogic leaders* who expressed alternative discourses. This echoes critical pedagogy research that shows empowerment can only be accomplished when participants act as agents in transforming power relations between themselves and others (Hamston, 2006; Mayes, 2010). Thus, dialog, which emerged from the interactions of willing participants, could not be structurally created, only structurally encouraged. In this case, the workshop structure allowed *dialogic*

leaders the space to disrupt historically polarized meanings and relationships, suggesting possibilities for macro level social change, and in this sense the workshops were productive. Yet, while facilitators structurally encouraged dialog by providing all participants an opportunity to speak and ask questions of each other, we found their monolog also constrained exploration of certain topics.

Effective Openings Create Waves of Dialog

The following day, Ken instructed participants to stand in a circle and asked each person to talk about their expectations for the day's activities. When it was Patrick's turn to speak, Ken asked him to talk about the previous day to provide an introduction for first-time participants. Patrick reflected on the dialog that occurred during workshops discussions and his informal interactions with Jack, the Forest manager, after the workshop ended.

Patrick: Uh. ((sigh)) I was a little disappointed in, in what I, what I heard what Jack said, that, you know, about all the hoops that we would have to jump through to get ((the river)) back into the ((livestock rotation)). ((truck noise)) And then after we had, our, our, our last little, um, session there on the river. Well, then he came to me, and he said, you know, "You guys really need to write this thing up and, and put it on the table." He said, "You know, I don't want to be the one that, that, ah, says, no to anything, you know. And, and, present it to the Forest Supervisor²." So, so that did then, you know, it kind of encouraged me, ah, along those lines.

In this passage, Patrick used dialogic language by explicitly attributing his conversation with Jack and sharing his own emotional response to their formal and informal interactions. From the formalized discussion, he expressed disappointment with Jack's description of all the hoops that they would have to go through to change management on the river. We interpret this show of disappointment as an expression of

² The Forest Service Supervisor is the lead authority on the Sprucedale Forest, whereas, the managers have jurisdiction over one of several Districts within the Forest.

acceptance that a change would not be as easy as Patrick originally thought and that Jack's explanation of the process helped him realize his incomplete understanding of the challenges associated with controversial decisions. Then, he described their informal interactions in which Jack created an opportunity to continue this dialog in the future by explicitly encouraging him to "write this thing up" and "present it to the Forest Supervisor," assuring that Jack would not "be the one...that says no to anything." In response, Patrick felt encouraged, providing evidence that these brief instances of dialog initiated transformation of historically polarized meanings relationships among ranchers and Forest staff.

Later that day, Patrick himself initiated multiple *dialogic openings* with the biologists present to creatively brainstorm management options that would allow livestock to access the river without threatening the endangered fish. They came up with several suggestions that had not been explored before. Thus, we found that effective *dialogic openings*, such as Nancy's, created waves of subsequent dialog further enhancing creativity and transformation. In the months following this workshop, Patrick, his wife Margaret and daughter developed a draft proposal based on the biologists' comments from the workshop and presented it to Jack and his staff. Although Jack said they did not currently have the staff time to devote to the project, Margaret later reported, "I was pleasantly surprised. They didn't flat out say no...They were up front about their priorities...so we have time to get all our science lined up." The biologists explained to Margaret that their family retained more livestock access than other ranchers because they were the only ones to submit their own proposal when livestock numbers were adjusted in the 1990s. Margaret said she never realized before

this meeting that the biologists considered her family to be responsible and professional managers. Because Margaret is a leader in several political organizations, her perspectives toward the government and other social groups and her discursive practices have influence beyond these workshops or Sprucedale issues. Thus, the ‘productive disruption’ of historically polarized relationships creates new possibilities for civic engagement that extend beyond formalized participatory spaces.

Concluding Remarks

Despite the formal workshop structure designed to approximate equitable participation, we found facilitators frequently imposed a monologic discourse of sustainable agriculture, which authoritatively sought to increase ranchers’ influence in Forest management. By doing so, facilitators discouraged expression and consideration of competing discourses and so marginalized participants who identified with those competing discourses, such as biologists and environmentalists, thus reinforcing historic divisions between social groups. Facilitators maintained the outward appearance of a fair and inclusive participatory process by regularly initiating rounds of symmetrical turn-taking and allowing unstructured time for questions. However, when we examined the micro level discourse of workshop interactions, we found that facilitators frequently used their authority as discussion leaders to imply or enforce what they considered to be acceptable questions and answers and legitimate discourses. The examples presented here illustrate the subtlety of this discursive strategy we refer to as *monolog disguised as dialog*.

Workshop organizers and facilitators publicly promoted the success of the participatory workshops and by association they were recognized as leaders serving the ‘public good’. They published articles in the local newspaper and gave presentations at

regional and national conferences. As a result, they gained political recognition and increased legitimacy among Forest Service leaders and the public. Yet, echoing Fairclough's critique of *aestheticization*, the effective marketing of their success further legitimized this process that systematically marginalized some participants, for example those skeptical of extractive uses of the Forest. Such discourses of success make it more difficult to discuss diversity issues since this could threaten the outward image of success. Although there are some indications that organizers and facilitators may be considering these issues more critically for future workshops, this is beyond the scope of our study.

While ranchers benefited in some ways from the facilitators' monolog for example from increased legitimacy, their monolog encouraged participants to adopt and disseminate their own authoritative discourses, which ultimately reproduced existing power relations rather than building participants' capacity to transform problematic divisions between social groups. Participants who benefit from authoritative discourses may ironically become dependent on the authority associated with that discourse and may not be able to deviate or adapt its meanings according to their needs. Similar to critical pedagogy research (Hamston, 2006; Mayes, 2010), we found facilitators could not structurally impose empowerment goals, but rather participants were empowered when they directly acted as agents in the creation of new meanings and new power relations. The formalized participatory structure was effective in that it created opportunities for participants from historically polarized social groups to ask questions of each other and engage in dialog, regardless of power or status. However, its effectiveness was limited by the authority of the facilitators, who consistently restricted

the expression of discourses that were critical of their view of sustainable agriculture. We suggest this is not a unique instance of ‘biased’ facilitation, but rather that participatory structures designed to approximate Habermas’s ideal of *communicative rationality* may systematically privilege the views of the powerful whenever expert knowledge and power are left unquestioned (Kohn, 2000).

The underlying assumption that rational deliberation can lead to a more comprehensive, unified consensus ignores the power issues inherently linked to the social process of defining and accepting a single version of ‘truth’. We suggest that formalized participatory structures can more effectively empower a diversity of participants and transform polarized relations associated with contentious issues by reframing participation from Habermas’s deliberation to Bakthin’s dialog. Drawing from Wegerif’s (2008) research on complex problem-solving, we suggest that formalized processes emphasizing dialogic interactions can contribute to more equitable relationships among participants, in addition to more creative approaches to managing complex problems in society.

We suggest that participatory structures can more effectively empower participants when the transformative potential of dialog is explained and directly modeled by facilitators as part of the process. For example, facilitators can lead activities where they demonstrate simple examples of dialogic and monologic questions, then ask participants to create their own examples based on the current topic. In small groups, participants can practice asking both types of questions to each other and then reflect on how it felt to listen and respond to these different types of questions. Facilitators can also explicitly model the use of dialogic language as they guide discussion and give

positive feedback when participants initiate *dialogic openings*. In formalized participatory spaces, such as public forums and civics classrooms, increased awareness of the transformational potential of dialog can lead participants to modify and expand their communication practices, so that they may learn to use dialog in ways that challenge historically polarized meanings and social relations. While the dialog that occurs in these formalized spaces may have direct benefits for participants, we hope these spaces will also support the emergence of new *dialogic leaders* who can challenge the contemporary shift toward *aestheticization* and encourage more productive civic engagement.

CHAPTER 4

STRATEGIC CONSIDERATIONS FOR MANAGING COMPLEX PARTNERSHIPS FOR PARTICIPATORY ACTION RESEARCH

Participatory action research (PAR) seeks to expand the possibilities for learning and social change by challenging conventional notions of *who participates in research and how* (Gaventa and Cornwall, 2006; Hall, 2006; Maguire, 2006). Grounded in the theory of critical pedagogy (Freire, 1970), PAR promotes engagement with participants who are typically excluded, marginalized, or objectified as ‘others’ in society’s dominant discourses (Brydon Miller, 2001; Reason and Bradbury, 2006). Rather than focusing on researcher-driven analysis, inquiry takes place in shared communicative spaces, where participants and researchers engage in dialog to critically reflect on how to improve their own lives, their connections with others, and their place in the world relative to specific domains, such as environmental quality or economic development (Wicks and Reason, 2009). In the ideal PAR project, researchers and participants work together through cycles of action and reflection to realize learning, empowerment, and social change (Kemmis and McTaggart, 2000).

Enthusiasm for these positive social outcomes has led to institutionalization of various forms of PAR in different disciplines, such as education, public health, agricultural development and natural resource management. Yet ‘scaling up’ or expanding PAR practice without critical reflection can lead to co-option of participatory ideals. For example, standardized methodologies or ‘toolkit’ approaches to PAR emphasize methods that can be quickly replicated in various contexts, rather than adaptive implementation of such tools relative to local context (Ospina et al., 2004; Judah and Richardson, 2006; Arieli et al., 2009; Volk, 2010). Ironically, standardization of PAR methods can actually restrict participants’ ability to engage in the process on

their own terms. Although powerful individuals or organizations may genuinely seek to empower others with such standardized approaches, these initiatives often do not allow the flexibility for participants to adapt the process to local needs or culture. Thus instead of empowerment, these initiatives can create patronage relationships, where the terms of engagement, and thus the opportunities for change, are determined by the worldview and generosity of those already in power (Freire, 1998). In contrast, the philosophy of critical pedagogy emphasizes that those lacking power can only become empowered through their own agency (Shor, 1996; Mayes, 2010). Empowerment occurs as individuals question their own place in the world and actively work to transform it, a process which Freire refers to as *conscientization* (Freire, 1998).

Fulfilling the empowerment goals of PAR requires that researchers and participants actively negotiate whether to participate in a PAR project and under what terms, specifically by negotiating their roles and responsibilities relative to individual interests (Nyden, 2003; Cornish, 2006). In this sense, transformative PAR practice can be understood as an emergent phenomenon that arises from complex partnerships between researchers and participants, such that the interaction of many partners creates new possibilities for learning and action that could not be predicted or planned by any one partner alone, including ourselves as researchers (Hall et al., 2004; Kincheloe, 2005; Sanginga et al., 2007). Navigating such complex, unpredictable processes requires that individuals have a personal comfort with improvisation and a sustained commitment to critical reflection (Hall et al., 2004; Kincheloe, 2005).

In the absence of critical attention to questions of diversity and power, for example asking who is not participating and why, the ideal of participation can easily become co-

opted by powerful groups or individuals who seek to further their own goals by minimizing consideration of competing perspectives (Cooke and Kothari, 2001). Yet, co-option may be a subtle process, where those dominating the process may be unaware of how their actions influence others. Further, a process may exhibit aspects of transformation and co-option depending on the scale of participation and the specific domain of interest (Cornwall, 2004). For example, a small-scale collaborative effort may empower a relatively homogenous group of participants in a specific domain, such as agricultural production. However, if this effort is analyzed at a larger scale relative to a broader range of participant perspectives and interests in other domains, this same effort may be considered co-opted by the relatively narrow interests of the original participants. Further, the scale and focus of collaborative efforts may change over time in response to negotiations among partners. The emergent, unpredictable nature of these partnerships creates a great challenge for those who wish to facilitate PAR projects, especially for novice action researchers who may not find much practical guidance in the literature (Smith et al., 2010) and who often lack crucial institutional support for their dual roles as researcher and community facilitator (Nyden, 2003).

This paper lends practical insight into this process of managing complex partnerships by sharing critical reflections from my experiences facilitating three PAR initiatives in different cultural and institutional contexts related to sustainable livestock ranching. Although each of these PAR initiatives was embedded in other more extensive collaborative efforts, I defined the bounds of each PAR initiative by structurally creating cycles of action and reflection and publicly framing our collaboration using the PAR language of empowerment and integrated action and research.

Specifically, these three initiatives occurred in the context of (1) a US Native American reservation, (2) a Mexican river basin along the US-Mexico border, and (3) a US National Forest. While I engaged with partners using a similar PAR approach, each initiative developed different sorts of partnerships and resulted in various forms of transformation and co-option. By comparing these experiences and reflecting on the challenges of each context, I share my evolving understanding of PAR practice to stimulate further discussion on these issues, especially as it relates to the practical skills and institutional support needed to navigate such complexities.

The publication of critical reflection encourages researchers to question their own practices and share their insights and ethical dilemmas with colleagues (Pini, 2003; Marshall, 2006; Huisman, 2008). Researchers emphasize that it is especially important to publish “difficult or ‘messy’ challenges, where initial efforts may have failed and/or where resolution was not simple and straightforward,” as these are often the richest source of new insights (Bond and Harrell, 2006: 159). Because these writings may be contentious or unflattering for participants and their purpose is to gain insight into the process rather than evaluate particular individuals or organizations, these cases are often written without identifying the specific project context (e.g. Day Langhout, 2006; Messinger, 2006; Huisman, 2008). Although anonymity is less common in the agricultural and natural resources literature, I have followed this convention here to emphasize the process over the individuals and places discussed. Yet, I still elaborate diversity issues in some detail for each setting because these are centrally important to interpreting empowerment and social change.

Feminist action researchers emphasize that critical reflection among researchers and partners should explicitly consider the diversity dynamics in each community, referring to patterns of dominance and marginalization relative to various aspects of social difference such as race, education levels, economic class or worldview, and the underlying structural and socio-political context of those dynamics (Maguire, 2006). Further, researchers must continually reflect on “the principle of self-in-community,” which acknowledges that “one’s own values, cultural lenses, and identities impact all stages of work with diverse individuals, groups and communities” (Harrell and Bond, 2006: 367). In this paper as I present and discuss each PAR initiative, I highlight community diversity dynamics and their intersection with my identity and subjectivities as a researcher relative to PAR activities.

Below, I introduce my framework for interpreting PAR practice and explain my personal approach to PAR in the context of sustainable livestock ranching. Then for each initiative, I describe 1) the context, highlighting important diversity issues (See Table 4-1 for an overview); 2) the scope of PAR activities from initiation to accomplishments (See Table 4-2 for an overview); 3) my analysis of participant responses to the research and my role as researcher; and 4) my interpretation of PAR practice relative to the framework elaborated below. I conclude with core considerations that can help action researchers effectively manage PAR partnerships and suggestions for how institutions can support their efforts.

Framework for interpreting PAR Practice

Returning to the central question of *who participates and how*, my interpretation of empowering PAR recognizes the need to develop equitable partnerships that support critical reflection as a foundation for action and research. Sanginga et al. (2007) identify

six elements of effective partnerships that promote power-sharing in the context of agricultural development: 1) a shared vision and sense of interdependency, 2) strong and consistent support from senior leadership, 3) benefits for participating individuals and institutions, 4) investments in human and social capital, 5) resource sharing or mutual investment, and 6) opportunities to institutionalize partnerships. While equitable partnerships are foundational for PAR, such partnerships must also address diversity issues through critical reflection.

Critical reflection in PAR is expected to occur at three scales—first-person reflection, as in reflexivity directed at questioning one's own practice; second-person reflection, as in dialog directed at changing the practices within a face-to-face community; and third-person reflection, as in academic research or various forms of public media directed at questioning societal norms and contributing broadly to social change (Reason and Torbert, 2001). Some form of documentation and dissemination, ideally to a breadth of academic and public audiences, is central to the PAR goal of increasing the visibility of underrepresented individuals and social groups (e.g. Hurtig, 2008). Thus, although a project may be beneficial and even empowering for participants, its potential for transformation is limited if partners are not willing to critically reflect on their own practice, engage in dialog with others, and share their insights with a larger audience.

PAR in the Context of Sustainable Ranching

The three PAR initiatives discussed here center on the topic of sustainable livestock ranching in arid and semi-arid climates. Because of the low productivity of these lands, ranching based on natural vegetation requires large areas to support economically viable livestock herds. Most private land holdings are too small to support

a profitable ranching operation, and so ranchers rely on access to large expanses of communal lands, managed by various governmental entities, such as the tribal government in the Native American example, the *ejido*¹ or village government in the Mexican example, and the US federal government in the case of the National Forest. In the three examples discussed here, communal land management is grounded in some form of democratic process, where management decisions are influenced by a diversity of constituents or stakeholders who have different interests, worldviews, and knowledge related to ranching, conservation, and government decision-making. While these differences are often a source of controversy and conflict, they also suggest the potential for innovation (Hall et al., 2004). Thus, sustainable management of these communal lands for agriculture and conservation requires a focus on communication, education, and negotiation to reach decisions that are acceptable to a diversity of stakeholders (Ostrom, 2008).

Although each PAR initiative was embedded in a longer-term collaborative effort (Table 4-2), I initiated PAR activities by personally contacting a diversity of individuals and institutions to gauge their interest in PAR and gain insight into diversity issues. As people expressed interest, I organized meetings to bring together potential partners to collectively discuss issues of concern and initiate cycles of action and critical reflection. The PAR partnerships that emerged in each of these instances were quite different, and I found the qualities of these partnerships to be directly associated with the types of critical reflection and action that were possible with each group of partners. While all PAR initiatives illustrated some aspects of transformation and co-option, transformation

¹ *Ejido* is a form of communal land ownership established as part of the agrarian reform of the Mexican revolution of 1910. For simplicity, we use the term Mexican village to refer to *ejidos* here.

was most evident in the Native American initiative and co-option was most evident in the Mexican initiative. The National Forest initiative illustrated a confusing mix of both. However, this research is not meant to categorize or evaluate these examples of PAR along a continuum. I use these terms to interpret the complexity and evolving character of each PAR effort, recognizing that these interpretations represent only a snapshot in time. In this sense, the frameworks applied here are presented as monitoring tools that can be used to understand and adapt the collaborative process, rather than tools for summative evaluation.

The data presented here come from extensive field notes, where I documented significant interactions with participants, including phone calls, emails, one-on-one visits, meetings, and workshops. Note-taking was focused on what I said and did, what participants said and did, and how we responded to each other. I continually reflected on who was not present and whose voice had not emerged in project discussions, and I made specific efforts to reach out to those individuals in genuine, culturally-appropriate ways. I also extensively collected historic archival data, including public media and internal reports on agriculture and conservation projects in the area, to understand the historic context of diversity dynamics. Additional data were also collected for each PAR project relative to its specific goals, for example interviews with key partners in the Native American project were used to evaluate the educational program we developed and transcribed meeting and workshop discussions in the National Forest project were analyzed to understand how participants communicated about controversial issues (Chapters 2 and 3). With all projects, I documented the evolution of my research strategies as I interacted with participants and academic colleagues.

PAR on a Native American Reservation

Diversity Dynamics and Researcher Subjectivity

This Native American tribe² has one of the largest reservations in the US, encompassing part of the tribe's ancestral lands in the desert southwest, which means there has been a continuous history of place-based indigenous agricultural practices. Livestock were introduced to the region by Spanish missionaries in the late 1600s, and cattle ranching, as a mixture of Spanish and indigenous traditions, became an integral part of tribal culture. When the reservation was created in the early 1900s, the US Bureau of Indian Affairs (BIA) was charged with administration of land management. The BIA instituted privatization of tribal lands across the US, forcing each reservation to divide communal lands into family allotments and distribute livestock permits based on a family's land holdings. Thus, each family was expected to fence off their land and rotate livestock through fenced pastures, which were considered best management practices at the time. Village elders on this reservation strongly opposed fencing land to divide communal village territories, which were established by traditional migrations from a village's summer territory in the valleys to its winter territory in the mountains. Although villages have long since settled, the traditional system of village territories still forms the basis of livestock management. Due to consistent political pressure over the years especially by village elders, this remains the only reservation in the country that did not allow BIA to institute a livestock permitting system based on privatized land ownership.

Although the tribe has been largely united against the idea of privatization, they also recognize the need for agricultural development to increase economic opportunities

² All proper names have been omitted or changed to protect confidentiality.

on the reservation and implementation of sustainable practices to protect against degradation. Because of its remote location, there are few jobs on the reservation, leading to high levels of unemployment, poverty and associated social problems such as substance abuse, depression and suicide. The BIA's approach to alleviating poverty on reservations has historically been various forms of welfare and government assistance, which has been criticized for creating a culture of dependence. In contrast, tribal programs promote farming and ranching as a means to supplement family income and create jobs. However, in some areas, uncontrolled livestock grazing has led to degradation, severe erosion and flooding, which threaten village infrastructure. While non-tribal BIA staff consistently promoted fencing and privatization as 'scientific' approaches to livestock management, tribal resource professionals have embraced the value of both indigenous and scientific strategies for sustainable agricultural development.

In 1994 with the passing of the Tribal Self-Governance Act, the BIA transferred administrative control of reservation lands to tribal governments across the US. This tribe welcomed the change and appointed tribal members to leadership positions within the new Natural Resources Department. The new director convened monthly natural resource meetings to coordinate strategies for sustainable development among various tribal and federal government programs working on the reservation. As part of this shift toward collaboration, the director invited a university extension professor, Ana, from the state land grant university, and she brought two master's students, including myself. Around this time, the tribe established a new community college, and college leaders expressed interest in developing a degree-based agricultural program that emphasized

both indigenous and scientific knowledge. One of the college leaders soon became the first female executive of the tribal government, a striking shift from the traditionally patriarchal political system, which generated much discussion about gender and leadership among tribal members.

I was introduced to the tribe by my advisor Ana and her graduate student Mark. Together our identities as researchers shaped interactions with project partners. Ana, a White Hispanic researcher, had worked with indigenous groups in Asia and the Arctic as an ecologist and anthropologist, exploring the use of scientific and indigenous knowledge in sustainable resource management. Mark, a White rancher, anthropologist and natural resource specialist, had experience with agricultural development in the Peace Corps. Before graduate school, he worked with villages on this reservation for a community development foundation. I came to the project as graduate student making a career shift from botany to natural resource management. Although I was a young, fairly inexperienced White woman, I had developed a sensitivity to indigenous politics after years of volunteering with a Latin American indigenous group. Together, the three of us respected the unique place-based perspectives of indigenous people, yet we were careful not to romanticize or objectify ‘indigenous knowledge.’ We found we were respected and welcomed by tribal members even as our ‘outsider’ status was the source of occasional jokes. Although we were intentionally excluded in certain ways, for example when tribal members spoke in their native language during meetings, both researchers and tribal members felt this contributed to a comfortable working relationship since it allowed tribal members, especially elders and tribal leaders, to establish their own boundaries for privacy and control.

Emergence of Partnerships: Scope of Action and Research

Working with partners in the monthly natural resource meetings, Ana developed a proposal for a natural resources curriculum and a community planning project in 2001. The proposed projects would integrate community development and research activities and explicitly incorporate tribal and scientific approaches to sustainable ranching. In developing the proposal, the tribe required that any research associated with the project must be participatory with direct, practical benefits for the tribe. The tribe and the university signed a Memorandum of Understanding, officially sanctioning the partnership. To my knowledge none of the tribal partners had any specific knowledge of or previous experience with PAR, but rather they enforced this condition to end the long history of extractive, exploitative research that had characterized the tribe's experience with White researchers on the reservation.

The proposal was funded from 2002-2004 through a US Department of Agriculture grant³ that explicitly valued community-based research and education for sustainable agriculture. Mark led the community planning project, which emphasized the use of traditional village territories for livestock management rather than BIA-style fenced allotments, while I took the lead on the curriculum project, which we implemented as a series of community workshops. Mark worked with the livestock committee in one reservation district to coordinate their research and planning activities, while I initiated a reservation-wide curriculum advisory committee to coordinate PAR activities associated with the curriculum.

³ This was a USDA Sustainable Agriculture Research and Education grant.

At the first curriculum advisory meeting, we brainstormed goals for the curriculum, fundamental values and messages, content areas, teaching methods, and the scope and format of implementation. We continued to hold meetings every couple months over the next year to develop the curriculum and plan for its implementation. Participants included a diversity of tribal leaders, elders and both tribal and non-tribal natural resource specialists. To develop each topic area, we posed broad open questions to stimulate dialog. For example in the Economics Unit, the group went beyond the standard assumption that people owned livestock to maximize their profit. We asked “When do people sell cattle and why?” and “What are cattle used for?” In between meetings, we followed up on the ideas generated, contacting individuals to transform our brainstorming into curriculum content. For example, we contacted elders to invite them to speak at the workshops and worked with non-tribal natural resource specialists to help them tailor their technical presentations to the tribal context.

In these early meetings, we also discussed the scope of research activities that would guide curriculum evaluation, beginning with a broad discussion of “What is success?” “How do we evaluate participants in the workshop?” and “How do we evaluate the curriculum?” Although a tribal member initially suggested using pre- and post-tests to gauge what participants learned and thus the effectiveness of the curriculum, the group took the conversation to a deeper level and decided to stimulate dialog at the end of the workshops to understand what participants found useful based on their own needs and interests. Repeatedly tribal members emphasized the importance of community-wide education that included tribal officials since changes in management of communal lands require collective decision-making. I introduced the

theory of social capital as a way to interpret the different types of social relationships required to implement sustainable management on the reservation and to examine how this PAR project contributed to the development of those relationships. We continued to discuss research and evaluation concepts throughout the course of the project.

After a year of planning, we implemented the curriculum as a series of eight one-day workshops on different topics, which were held monthly in villages across the reservation to highlight the cultural and ecological diversity of this large geographic area. The community planning project coordinated by Mark was highlighted in several of the workshops. A diverse group of 117 people attended at least one workshop, including men, women, youth, elders and tribal leaders, and many people attended multiple workshops with an average of 37 people per day. Attendance was considered high given the relatively long distances participants travelled to attend. After scheduled presentations, discussions, and field activities, we set aside time for dialog so participants could reflect on the relevance of workshop content to their lives. We also distributed blank comment cards for people to give feedback anonymously. I documented these discussions and distributed notes to the advisory committee, which met between workshops to reflect on the past workshop and finalize details for the next one. This cyclical process of reflection and action allowed us to incorporate participant feedback into curriculum implementation. For example, the first workshop on the history of tribal ranching generated so much enthusiasm that we realized history should be a component of every workshop. For all subsequent workshops, we invited elders from the local village to welcome participants and introduce the day's topic from their perspective. Project partners embraced this type of improvisation that allowed us to

expand project activities in response to our growing understanding of participant interests.

At the end of the workshops, we held a final advisory meeting to reflect on what we had accomplished and to review my research interpretations of the participatory process. Mark held a similar meeting to reflect on his interpretations of the community planning process, and subsequently, our published research was distributed to the tribe. Working with tribal partners, I also created a booklet for participants with quotes, color photos, and summaries highlighting the different perspectives on sustainable management that were shared in the workshops. Because of the enthusiasm generated by the project, the tribe allocated money for the community college to develop an associate degree program in tribal agriculture. The dialog generated from our PAR project provided a starting point for the college's program, which used a participatory process similar to ours involving many of the same partners. While the program has continued for almost ten years, attendance still remains low due to various social problems associated with life on the reservation and widespread poverty.

Participant Responses to Research

While tribal members were consistently supportive of the PAR project and my role as curriculum coordinator and researcher, this was not always a smooth or comfortable process to navigate. For example when I introduced social capital theory as a potential lens for interpreting participation in sustainable agriculture, one community rancher angrily protested the use of White theories to understand native perspectives. In the meeting notes, I reported:

Charlie said he didn't think the social capital theory should be included because that was a [White] idea, not a [native] idea. He said he agreed with

the curriculum, but he didn't know there was going to be the theory part and he didn't know that I would be taking this project to conferences.

Yet instead of closing off opportunities for research, this comment opened up a rich dialog about the value of integrated research and action and the increased power that participants had in PAR projects. In response, I tried to explain in straightforward terms what it means to do research. I said I needed to connect our learning to some theoretical foundation, but that I would work with the group to find an appropriate theory that we could adapt to reflect our understanding. I also said I would avoid researching sensitive topics, for example documenting indigenous knowledge for academic publications, to respect the tribe's privacy. I also committed to bringing all research back to the group for review before sharing it publicly in conferences or publications. In the meeting notes, I wrote that a tribal natural resource specialist Bill responded, "Jennifer and Mark are doing good projects with their work that wouldn't be done otherwise." A tribal administrator Jolene reminded everyone that this work was supported by a Memorandum of Understanding between the tribe and the university. She acknowledged the truth in Charlie's comment since historically research on the reservation had been exploitative, but she emphasized that this participatory process where tribal members helped develop the project was fundamentally different. In the meeting notes, I wrote:

Jolene said it is true that many people will feel the way that Charlie feels, especially if they don't know the process that this project has gone through. There will probably be many [tribal members] who react this way when we actually start the workshops and bring them to the districts.

Yet as we implemented the curriculum with widespread support from tribal partners, we faced few direct challenges to the project itself and instead generated thoughtful

comments about the content of the curriculum and strategies for sustainable agricultural development.

Three years later in 2007, organizers of an international conference on community-research partnerships invited me and a tribal partner to speak about our PAR project. They provided travel funds and asked me to select the tribal member they would invite. Although it was difficult to choose one person to represent this broad partnership, I invited a tribal natural resource specialist and close friend Jim, who I felt would be willing to reflect on our roles as 'co-researchers' and invest time into making the presentation together. By coincidence, Ana invited both of us to an event several months before the conference, and I took this opportunity to start a discussion about what Jim and I could talk about in our presentation. Jim shocked me by questioning whether I had even conducted research, but again rather than closing off opportunities for discussion this honest question allowed us to explore the meaning of this PAR project and our partnership more deeply. After our discussion, I recorded the conversation in my field notes:

Jim: I don't know. Is what you did research? I mean like what Mark did with his research on grazing, people are still relying on that.

Jennifer: Yes mine was research. I used it as research in my master's thesis and published it as research. Do you remember that publication I gave you?

Jim: Yeah. [pause]

Jennifer: Maybe it's not that clear that it's research to you, or other tribal members because it's common sense to you, but there's something formalized that makes it research. It's basically learning.

Ana: Beyond the process, I think the workshops provided a chance to talk about things that were too sensitive or controversial, or just never got talked about.

Jim: Yeah. [nodding] That's true.

Jennifer: People from different communities that don't normally come together, talked about issues.

Jim: Yeah, fences are supposed to separate animals, not people. Some still remember when people could move around. Now you need permission to live in a community. [pause] Jennifer's work helped at the community college, her research [by providing a model for others]. And that's the hope that the college now has land grant status, so they can do research themselves some day. That's something that Jennifer's work helped to do.

This exchange reflects the vastly different worldviews and understandings common in PAR partnerships that are often smoothed over by collaborative agreements, which assume diverse partners use the same words to mean the same thing. It forced me to ask myself what does 'research' mean to non-academic partners? Although I appreciated the richness of dialog with partners throughout the PAR project and considered this a form of co-inquiry, perhaps I did not explain my own perspective of research well enough to connect with project partners. Does the term 'co-researcher' have value for community participants or does it only become a relevant concept in an academic context? Is this a co-option of sorts when academic researchers celebrate the value of co-inquiry even though the topic and language is too abstract to be relevant to a non-academic audience? When Jim and I presented at the conference, he was surprised how interested everyone was in our project and even his perspective. Perhaps the research and action components of our project were so well integrated into community needs and perspectives that we successfully minimized the 'otherness' of research as an outsider-driven process. As Jim said, the project directly benefited the community college. Perhaps my research, an abstract discussion of the value of collaboration to communal land management, did not have much meaning for tribal members who already lived with a tacit understanding of what I described as 'social

capital' and 'communal land management'. In any case, this dialog helped me understand what our PAR project looked like from outside my academic experience and demonstrated how critical reflection can continue years after the official end of a project.

Interpreting PAR Practice

This PAR project was transformative in many ways, in large part due to the political awareness of tribal members and their unflinching requirement that we as researchers and 'outsiders' negotiate power-sharing at every step of the project. Our partnership exhibited all of the elements of effective power-sharing identified by Sanginga et al. (2007), which I identify below with numbering and italics for clarity. By participating in the monthly natural resource meetings and working together to develop the PAR proposal, partners expressed 1) *a shared vision and sense of interdependency*. Our work was 2) *consistently and meaningfully supported by senior leaders* from university extension and the tribal government, including the newly elected tribal chairwoman, tribal legislative members, the director of the natural resources department, and leaders with the tribal college. The project resulted in 3) *various benefits for different stakeholders relative to their specific needs and interests*, such as the workshops for community members, increased social capital for the tribal natural resources department, program development for the tribal college, and published research for us, as researchers. Empowering participants to negotiate the terms of their engagement meant that the range of benefits produced matched the diversity of participant needs and interests (Cornish, 2006). The tribe and university also supported 4) *human and social capital development* by providing technical resources and social linkages to those implementing the workshops. Partners 5) *mutually invested in the project*, based on their strengths and abilities. For example tribal natural resource

specialists took photos on the reservation to demonstrate management principles in contexts familiar to participants, and tribal officials donated funds for local families to cater lunches. Lastly, 6) *these partnerships were institutionalized* with the Memorandum of Understanding between the tribe and university and within the tribal college, which institutionalized participatory development of their new agricultural degree program.

Further, this partnership can be considered transformative because partners directly confronted diversity issues from project planning through to implementation and dissemination of findings, which included first-person, second-person and third-person reflection. When the project was first suggested, tribal leaders, who had recently taken administrative control of land management activities and established the community college, were newly in positions to challenge status quo assumptions of resource management and education—and they did so with determination and thoughtfulness. Although a tribal member first suggested pre- and post-testing to evaluate the curriculum, he subsequently reconsidered the problems with this approach, as in first-person reflection, and suggested evaluation based on open dialog, which we did. Because of the diversity of people involved in the PAR project, the workshops became a forum for dialog, as in second-person reflection, for example weighing the benefits and challenges of traditional livestock management strategies considering elder's stories and Mark's ecological data. Finally, these collected perspectives were publicly disseminated with the curriculum, the booklet, and published research, as examples of third-person reflection contributing to public discourse for social change.

Although Charlie's and Jim's responses to my role as researcher signaled some discomfort and/or misunderstanding, the institutional framework, and especially the

grant funding, explicitly valued integrated research and action and required some form of project evaluation. This legitimized my role as researcher and the need to document and publish our PAR findings, while allowing flexibility to negotiate what form the research and evaluation would take and how it would be shared. While there may have been some level of co-option since the academic research described our process of ‘co-inquiry’ in terms that were foreign to participants, the evolution of our partnership with tribal members suggests some level of transformation in how the tribe viewed ‘outsider’ research. Years later, Charlie signaled his ultimate acceptance of my role as a researcher when he asked me to help another White researcher navigate the process of working on the reservation. Although I coordinated the curriculum project and identified this as a PAR project with my academic writing, tribal members were the ones that led the process with their willingness to listen, raise difficult issues and consciously negotiate power on a daily basis. I saw their understanding of participation and empowerment as embedded in their communal culture and ongoing struggle for tribal sovereignty.

PAR in a Mexican River Basin

Diversity Dynamics and Researcher Subjectivity

This river has garnered significant international attention from conservationists for its status as “one of the last free-flowing rivers” in this desert region and an important corridor for migrating songbirds. The river flows from Mexico north into the US, which means that although there is only a small portion of the river in Mexico, the condition of this upper river basin directly impacts the physical stability and water quality of the lower portion of the river in the US. While ranching has historically been an extensive land use on both sides of the border, and unsustainable ranching practices have caused

degradation, the main threats to the river are increasingly considered to be large-scale copper mining in Mexico and ex-urban residential development in the US. Significant money and resources have been spent to protect the US portion of the basin with increasing attention now focused on Mexico. However, because copper companies in Mexico are politically powerful and difficult to approach, most conservation efforts on the Mexican side of the border have focused on creating conservation reserves to eliminate or reduce the negative impacts of livestock grazing.

After years of growing international pressure to protect the “twin basins” or “cuencas gemelas,” top US and Mexican officials signed a joint declaration in 1999 “to improve and conserve the natural and cultural resources” of the entire river basin. Shortly thereafter with financial support from the US government, Mexico initiated the establishment of a conservation reserve along the border by issuing a public decree. Basin residents responded with outrage, and the mining companies mounted protests and legal challenges, which led politicians to quickly abandon the project. Responding to the political disaster of this top-down strategy, government officials and conservation organizations quickly shifted their efforts from establishing a federal reserve to privately acquiring land for conservation and partnering with ranchers to promote sustainable agriculture. For example, government agencies and international conservation organizations funded small-scale agricultural development projects with ranchers, like brush removal and erosion control, while a regional conservation organization received a grant from USAID to develop a ranchers’ network, *una red de rancheros*, to support education and capacity building for conservation.

Notably, the small city in this basin was the location of the first uprising of the Mexican revolution, and residents pride themselves in a strong local culture of political activism. Labor unions representing mine workers in the basin wield substantial power and are considered to have some of the highest labor wages in the country. This pride creates a subtle friction between rural residents and government officials or conservation professionals who come from the cities with top-down solutions. For example, the discourse and culture of conservation groups working here are rooted in the urban conservation movement. This means that the wildlife species and conservation issues highlighted in education and outreach programs may not match local interest in conservation, further contributing to friction between rural and urban culture. This friction was often described as a difference in speech—rural residents would say that urban professionals talked too quickly and never listened, while urban professionals would say residents were difficult to work with and not welcoming.

In contrast to the local culture of activism, there is also a history of political corruption at the state and federal levels and a strong federal presence in the basin, poised to address illegal border activities. This section of the border is crossed by tens of thousands of illegal immigrants and drug traffickers every year, which creates various social, economic and environmental stresses. Some residents profit from illegal traffic, while everyone is affected by the unpredictable violence associated with lost and desperate immigrants, competing traffickers and drug cartels, and the intimidation tactics of federal military patrols, many of whom are suspected to be corrupt themselves. Despite these negative aspects of the border, residents express a visible affection toward the US, especially the neighboring US state. Residents cheer for the

university football team across the border and celebrate US holidays such as Independence Day and Thanksgiving. Although the presence of the international boundary is clearly felt, most Mexican basin residents have family members in the US or have worked across the border themselves.

In this sense, I was welcomed as an American and for my alumni status with the university across the border. I also knew conservationists working in the US portion of the basin, which facilitated relationships with their counterparts across the border. However, while people were generally welcoming and friendly in Mexico, it was more difficult for them to relate to me as a professional natural resource specialist and graduate student researcher. There were not many professional or university-educated women in the basin, nor many female ranchers. My professional identity was further complicated because I no longer had direct ties with natural resource specialists at the university across the border, but instead I was affiliated with a distant university, unfamiliar to them. To some degree, I also felt the divide between urban and rural culture, where my identity as a US graduate student naturally categorized me as an urban professional, despite my experience living and working in rural areas and my research focus on empowering rural residents. This cultural divide was also felt with language. Although I am a fluent Spanish speaker, I had not spent much time in this particular region of Mexico, known for its abundance of colloquialisms associated with rural culture. While urban residents complemented me on my language proficiency, some rural residents playfully teased me about my vocabulary and pronunciation, encouraging me that they could still understand and that I would get better with time.

Emergence of Partnerships: Scope of Action and Research

I was first introduced to the basin in the fall of 2007 when I volunteered with a US biologist, who partnered with the regional conservation organization to conduct bird surveys along the river. While in Mexico, I met conservationists and government officials, who described their vision of working with the newly formed ranchers' network to promote integrated conservation and agriculture in the basin. I explained that I was looking for research opportunities and that as a natural resources specialist, I had facilitated similar planning processes with ranchers and government partners in the US. I suggested the idea of a PAR project that could bring together ranchers, conservationists and government officials to discuss basin-wide concerns and plans for coordinated action. The conservationists responded with interest and invited me to the next meeting of the ranchers' network to present my ideas. Hosted by the regional conservation organization, which provided local transportation and lodging, I traveled to the basin in December 2007 to meet with the ranchers' network. In a brief presentation, I described my professional experience, explained the PAR philosophy in layman's terms, and offered a range of project ideas to stimulate dialog. After the presentation, I spoke individually with ranchers and conservationists, who committed to working with me the next summer to initiate a PAR project. When I went back to my university, I maintained regular contact with conservationists and government officials through email and phone, continuing to develop a broad plan for our work together. Since ranchers had limited internet and phone service, I held off defining the scope of the project until I could spend more time getting to know rural residents and their interests.

In summer 2008, I returned to the basin with travel funds from my university to conduct preliminary research. I talked with anyone I could who had an interest in

agriculture or conservation in the basin. I began by meeting government officials and conservation leaders in the state capital. These professionals enthusiastically encouraged me to reach out to the ranchers, yet they refrained from committing their own time. People explained this type of community work was outside their skill set or job responsibilities. They also explained it was difficult to find staff who were willing to live in rural areas to do the kind of community-based projects their organizations would like.

Next, I met government officials in the basin, including city planners and employees of the federal conservation reserve, who talked about existing outreach, education and capacity building programs sponsored by government agencies and conservation organizations. Some of these urban professionals claimed a PAR project was not needed since existing programs already established a collaborative approach to conservation and agricultural development in the basin, while other professionals expressed frustration that despite all the educational meetings and pamphlets, most of these programs were superficial and ineffective. They explained that existing programs did not adequately consider residents' interests, nor link to current research or policy issues in the basin. This latter group of individuals encouraged me that a PAR project could be used to stimulate discussion and increase coordination among the various stakeholders interested in agricultural development and conservation in the basin.

While it was relatively easy to meet professionals in the cities, it was more difficult contacting rural residents. Although the conservationists had offered to take me to village meetings and introduce me to ranchers from their network, these plans never materialized. They introduced me to one rancher from the ranchers' network who committed to working with me months before, but because of illness in his family, it was

difficult to meet with him again. I understood that the conservationists had other responsibilities, so I volunteered my time to show appreciation for our partnership, for example helping with resource surveys and transportation. However, after many instances when I asked the conservationists to introduce me to rural residents, I finally realized that each request was followed by a vague suggestion that later would be a better time, even when staff members admitted a lull in other responsibilities. Although the conservation organization graciously hosted me at their research station and publicly expressed enthusiasm for my work and our collaboration, they did not have enough interest in the project to work *with* me to initiate a PAR project.

Instead, I began meeting ranchers through the unanticipated invitation of the caretakers at the field station, specifically from the wife who grew up on a ranch in the basin. When I opened up to them one evening about my frustrations that I had not been able to meet ranchers in the area to discuss the potential for a PAR project, the wife immediately responded with an invitation to meet her family and extended social network. She took me the next morning to begin introductions.

As I met with ranchers, they expressed surprise to see me, explaining that professionals rarely came to the village to talk with them. These ranchers were known to be conservation-oriented and interested in sustainable practices; however, they explained they were not interested in working collaboratively with other ranchers in their village or integrating the management of their lands into a larger strategy for basin-wide conservation. They said village members could not trust each other to work collectively, and so the communal lands had become informally privatized into family parcels. Sitting at his kitchen table, I took notes as one rancher explained:

Antes, hace 10 años, trabajábamos juntos, pero después, se dividimos el terreno. Es mejor así porque cada uno hace su trabajo. Ahora no le afecta si el otro no tiene buen manejo.

Ten years ago, we all worked together, but now, we divided the lands. It's better that way because each person can do his own work. Now it doesn't affect you if someone else isn't managing their land well.

Ranchers acknowledged that smaller private parcels meant smaller herds, but they said people were willing to settle for a modest income rather than fight with other village members who would not do their share of the work. Some ranchers associated this distrust with the tensions of the international border. While I had known there were some large private ranches in the basin, I had not been aware of the extent to which the communal lands had been informally privatized. This aspect of communal land management had not been mentioned by conservationists or government officials, nor documented in the official reports I had studied.

While these conversations with ranchers helped me better understand the context of management, I found it difficult to get beyond polite questions and answers about their private livestock operations to initiate dialog about basin-wide issues. When I proposed the idea of meetings or workshops to bring people together to discuss their concerns, ranchers expressed a willingness to attend events to get information on particular topics, such as brush control or bull fertility, but they clearly positioned themselves as listeners and receivers of technical information, rather than engaged participants who also had something to contribute. Several ranchers explained that they had attended the meetings hosted by the conservation organization to learn about financial assistance for small-scale projects, and jokingly, they added to enjoy the free food. However, even these ranchers did not associate themselves with the ranchers' network, and others I talked with had never heard of it.

In the end, after six months of exploratory work where I talked with more than 40 people about the potential for a basin-wide PAR project, I discontinued my efforts. I made this decision largely because of a lack of institutional support for PAR and because there was not a genuine sense of interdependency or mutual investment among potential partners. I felt I could have continued working there to examine basin-wide issues using researcher-centered methods, but I preferred to invest my efforts in another project with greater potential for PAR. Following the terms of my research funding, I wrote up my findings as an assessment of the potential for basin-wide collaboration, identifying participants' interests and the sociopolitical dynamics that, in this case, limited collaboration. To the best of my knowledge, the conservation organization discontinued the ranchers' network. Ranchers continue to implement small-scale agricultural development projects on their own land with financial assistance from government agencies. The US organization devoted to protecting the twin basins continues to conduct research and hold meetings, eager for increased Mexican participation.

Participant Responses to Research

Professionals from conservation organizations and government agencies were vaguely supportive of this project and agreed with the need for this type of basin-wide integrated social and ecological research, yet most were uninterested or unable to take an active role in its development. For example, one forestry official responded with a mix of encouragement that this was a laudable democratic approach and pessimism that his agency was not equipped with resources nor staff to work with people on this level. In a private meeting, I scribbled his words in my field notes, "*Trabajar con la gente es difícil.... Democracia es complicada. Es más fácil ser autocrática.*" "Working with

people is difficult.... Democracy is complicated. It's easier to be autocratic." Similarly, when I interacted with ranchers, they politely shared their wish-list of development projects and technical trainings that would help them manage their private ranches, but they were uninterested in discussing larger basin-wide issues or coordinating their management with others. It is possible some individuals sincerely wanted to change power relations in the basin, but I was not able to initiate this dialog despite consistent attempts.

My effectiveness in this respect was limited because of people's perceptions of my identity and legitimacy. Since I was a young White urban woman, most professionals and rural residents assumed on first impression that I would not be interested in nor knowledgeable about agricultural issues. It was only after spending considerable time with people that they began to acknowledge my experience and interest in natural resource management. On the other hand, most people accepted me as a social science researcher, but they assumed I would work independently to conduct my research, which clashed with my own identity as an action researcher who wanted to work *with* partners. Yet there were brief instances of dialog with individuals who recognized my potential role in a PAR project. These individuals included a young Mexican female biologist who worked for a government agency in the basin, a young Mexican male planner who worked for the small city and had recently completed a master's degree in comprehensive basin-wide planning, and the caretakers at the research station, whom I considered research partners.

The most transformative experience for me in this project emerged unexpectedly from my friendship with the caretakers. Since lack of regular internet or phone service

limited my contact with academic colleagues, I gradually opened up with this family to reflect with them on the evolution of the project. When I finally decided to end the project, the couple asked me not to go. They began brainstorming strategies to help me re-initiate my PAR efforts. In my field notes I wrote:

Antonio me preguntó, “Y yo no te puedo ayudar? Hacemos un taller en la casa. Hay como 4 o 5 personas, los indicados. Ellos se van a hablar con otros y Juan y su changito más. Hablemos con ellos en el ejido el domingo.”

Antonio asked me, “And can’t I help you? We can have a workshop at the house. There are four or five people you talked about. They will talk with others and also Juan and his son. We’ll talk with them in the village on Sunday.”

When I responded that the ranchers seemed more interested in working independently than collaborating with others, Antonio agreed and suggested that he could introduce me to ranchers in the next basin south where his family lived. He thought they would be more interested in a collaborative project. In my field notes, I wrote:

Antonio—“Allá en [mi ejido] todos se juntan a apoyar a uno, como si no hay dinero para cuidar una vaca enferma. Aquí hay mucha envidia. Todos se apartan, y cada uno hace su propia cosa.”

Antonio—“There in [my village] everyone works together to help each other out, like if there’s no money to care for a sick cow. Here there’s a lot of envy. Everyone separates themselves, and each one does their own thing.”

Considering this possibility, I anticipated it would be harder to get research funds to work in an area of lower conservation priority, away from the border. Then I raised the larger challenge of my legitimacy as a female researcher among the male ranchers in the basin. Both husband and wife considered the truth in what I had to say and responded thoughtfully. In my field notes, I wrote:

Y cuando hablé de la cosa de ser mujer, Carmen explicó que, “Te miran así porque casi todas las mujeres aquí son más del hogar con los niños, aunque es una madre soltera, pobre así.” Antonio dijo, “Si tienes la confianza de unos, los otros te van a mirar y después también se van a dar cuenta. Así cuando viene al ejido, la ven como cualquiera. Yo les puedo hablar y explicar del taller.”

And when I spoke of the issue of being a woman, Carmen explained that, “They see you like that because almost all the women here stay at home with their children, unless a mother is single and poor.” Antonio said, “If you have the confidence of some, others will start to notice you, and then they’ll start to consider what you have to say. That’s why when you come to the village, they don’t notice you. I can talk to them and explain about the workshop.”

Both validated my understanding of the challenge of gender in my work, and as Antonio made a suggestion to help me overcome this barrier, he rejected the notion that I was any less capable because I was a woman. In contrast to my experiences with conservation professionals and government officials, Antonio’s offer to help me acknowledged the importance of building relationships to initiate a meaningful PAR project. Although this family could not afford to leave their position as caretakers to help with research, their genuine offer of support acknowledged the transformative potential of PAR.

Interpreting PAR Practice

In contrast to my experience with the caretakers, the concept of ‘participation’ in the basin was largely co-opted by powerful interests who benefited from the public appearance of collaboration without having to change their own practices. Although I primarily worked with the regional conservation organization, their actions were largely shaped by national and international interests, such as international conservation priorities and federal mandates from Mexican and US governments.

While the public discourse of conservationists and government officials celebrated collaborative approaches to basin-wide management and even attempted to institutionalize collaboration with the ranchers' network, I found little evidence of power-sharing partnerships among different social groups in the basin based on Sanginga et al.'s (2007) framework. The ranchers, who were named as members of the network, did not appear to participate in its creation or in negotiating the terms of their involvement, which meant that the network dissolved when conservationists shifted their priorities. Overall, there was 1) a limited sense of *interdependency among potential partners*, 2) a lack of *consistent support from senior leaders* in the basin for collaborative initiatives, 3) some *benefits for participating individuals and institutions* although the types of benefits were largely dictated by top-down priorities, 4) limited support for *human and social capital development* for those initiating outreach and educational programs, 5) few examples of *mutual investment or resource sharing*, and 6) superficial attempts at *institutionalizing partnerships*, as in the ranchers' network. More often there was a one-way flow of resources from government agencies and international conservation organizations in the cities, to ranchers and regional conservationists in the basin, establishing patronage relationships between those with power in the cities and those willing to cooperate in the basin. The several people who engaged in dialog with me about what it would take to initiate a PAR project had limited power to encourage broader participation in a basin-wide effort. While partnership building takes time and I had only begun to work in the basin, there were indications that the potential to develop meaningful partnerships was limited. Specifically, political pressure and international funding in the basin reinforced uncritical discourses of collaboration, which undermined

efforts to negotiate real power-sharing. If powerful leaders benefited from a superficial public image of collaboration, what would motivate them to invest energy in the risky, time-consuming process of building partnerships, which might require them to change their practices in response to the diverse views of other partners?

Beyond the lack of evidence of effective partnerships, there was also limited evidence that people were willing to question their own practices or address diversity issues in existing education, outreach or development programs in the basin. For example, environmental education programs used urban conservation materials to teach rural residents, and ranchers used government programs to increase the productivity of their privately managed parcels, rather than addressing larger issues of sustainability. This generally indicated a lack of interest in first-person reflection, at least among most individuals I met, who seemed firmly committed to achieving their personal vision of agriculture and conservation. As discussed previously, I had difficulty initiating dialog, as in second-person reflection, but it is likely that I was not considered a legitimate person to do so, especially without consistent support from respected organizations and leaders in the region. My interactions with the caretakers were a striking counter-example to this pattern. As they helped me think through the challenges of initiating a PAR project in the basin, we bridged many small boundaries that set us apart, such as education, economic class, livelihood, gender, and nationality, to explore core diversity issues. We renegotiated the power relations that separated us as 'researcher' and 'caretakers' to establish more equitable roles as 'co-researchers'.

Lastly, there was a lack of third-person reflection, as in discourse leading to social change. Although there were many documents and websites describing basin-wide

collaboration, especially government and conservation reports, there was little evidence that this discourse reflected actual partnerships or the diversity of views in the basin. Many of these reports were written to secure funding or advertise the success of on-going projects for fundraising purposes. These materials were largely written as persuasive documents advocating a particular vision of basin-wide conservation, in effect minimizing the legitimacy of other perspectives and suppressing discussion of diversity issues. Because of the international power and funding attached to these documents, this discourse reinforced social divisions in the basin, arguably institutionalizing these power relations and undermining a more holistic understanding of sustainability issues. In this atmosphere, it may be difficult to publicize PAR findings that directly challenge superficial discourses without risking negative consequences, such as withdraw of support by powerful organizations who benefit from an outward image of collaboration.

PAR on a US National Forest

Diversity Dynamics and Researcher Subjectivity

Located in the semi-arid southwestern US, this National Forest is known for its abundance of wetlands, lakes, rivers, and associated riparian areas, which are those sensitive vegetated areas dependent on these water sources. It also includes the headwaters of several regionally important rivers and critical habitat for federally-listed endangered species. Due to the high conservation value of the Forest's wetland resources and wildlife habitat, environmental advocacy groups have focused considerable resources on public media campaigns and legal actions to promote environmental protection and restoration there. Specifically they have focused on reducing or eliminating livestock grazing on the Forest, especially in riparian areas.

According to US law, National Forests (referred to here as “Forests”) are managed according to the “sustainable multiple-use concept.” This concept includes a commitment to protect and restore Forest lands, along with a commitment to meet the diverse needs of the public by balancing multiple uses of Forest resources. Historically, the “multiple use concept” has emphasized extractive land uses, such as timber and livestock production. This region was largely settled by White Mormon homesteaders from the 1860s to the early 1900s, who relied on access to expansive federal lands to develop a strong regional agricultural economy. Many of these families are still present today, operating farms and ranches on private and Forest lands. However, as the US economy has shifted away from agriculture and as public interest in National Forests has shifted toward conservation and recreational uses, extractive uses of the Forest have become a lower priority within the agency. Further, as the Forest Service has increasingly emphasized science-based management, more staff time and resources are required to develop sustainable management plans for permitted uses. Low priority activities may be postponed or discontinued if staff are not available to plan and monitor sustainable use.

In the 1990s, Congress increased political pressure for all National Forests to conduct environmental assessments of livestock grazing activities. On this Forest, assessments led to large reductions in the number of livestock permitted, and in many cases livestock were excluded from riparian areas, especially those designated as critical habitat for endangered species. Riparian areas provide critical water resources to livestock, and so restricted access lowers the economic productivity of ranching operations. This created tensions between ranchers, who felt they could be forced out

of business; environmentalists, who felt encouraged to continue their advocacy; and Forest staff, who felt squeezed between protecting Forest resources, promoting sustainable uses, and maintaining good relationships with rural residents. There were also tensions with federal and state wildlife agencies, which have jurisdiction over threatened and endangered species and game and fish management, and adjacent Native American tribes, who are not legally obligated to coordinate with Forest management because of their sovereign tribal status. Over the years, these tensions created overt conflicts, where public meetings dealing with controversial issues, such as endangered fish management, were described as “shouting matches.” While Forest managers must consider public input, they ultimately have the authority to make management decisions, providing they follow federal laws and regulations and coordinate with federal and state wildlife agencies.

Although I have worked closely with many ranchers in the state to develop ranch plans and monitor resource conditions, I am often viewed as an ‘outsider’ in ranching communities, at least initially, since I do not come from an agricultural family. I was first introduced to the area as an employee of a senior university extension professor Ron, who was well-respected by ranchers and the state cattleman’s association. With his introductions, I was well received by ranchers. Since I had previously worked as a government employee with the US Department of Agriculture, I related well to Forest staff, and in some cases I volunteered to help with their projects. Because I had personal contacts who participated in conservation activities in the area, I was also comfortable working with Forest biologists and environmentalists.

Emergence of Partnerships: Scope of Action and Research

Beginning in 2003, the university extension professor, Ron, became increasingly involved in this area. He worked with proactive ranchers, who wanted to improve their management and increase their influence in Forest decisions. Ron and his staff conducted environmental monitoring, led monitoring workshops, and convened meetings with Forest staff. Monitoring was emphasized as a means to adaptively manage livestock grazing to minimize environmental impacts. It was also promoted as a science-based approach to legitimize grazing on the Forest as a sustainable use.

Working with Ron, I conducted a focus group with proactive ranchers in 2007 to understand their strategies for sustainable management and the limitations they faced. The Forest had begun a multi-year effort to revise their Forest Plan, which set management objectives and desired future conditions that would guide decision-making over the next ten years. Ranchers expressed considerable anxiety about the new Forest Plan, specifically that the plan might include stricter environmental regulations limiting livestock access to riparian areas. They wanted to learn more about riparian management, so they could work directly with Forest staff to influence decision-making and development of the Forest Plan.

In response, Ron coordinated a workshop on sustainable livestock grazing in the summer of 2008 led by a government team that specialized in managing conflicts over riparian grazing on federal lands. The team integrated technical riparian training and consensus building activities to address both ecological and social aspects of riparian management. A large group of diverse participants attended, including many enthusiastic ranchers. Anticipating that the ranchers might want to form some sort of group to continue these activities, Ron invited me to facilitate a meeting with them,

suggesting that they might be interested in starting a PAR project. This occurred just after I decided to discontinue my PAR efforts in Mexico, so I agreed to contact the ranchers and lead the meeting to see what might happen. I developed a proposal for exploratory research with my university's Institutional Review Board, so that I could begin collecting data if the ranchers were interested in working with me.

Although I was initially skeptical about 'outsiders' encouraging ranchers to organize themselves based on my experience with the Mexican project, the nine ranchers present in the meeting decided to form a group after several hours of discussion. These ranchers included men and women from different parts of the Forest. Some of them were family, while others had never met before. The following month, they met again to discuss their goals and strategies and asked me to facilitate. Although they started as a group of ranchers, their vision was to involve a diversity of people to collaboratively build a shared understanding of sustainable management—one that would include livestock grazing. Throwing out words and phrases, the group developed a draft goal statement:

To promote a spirit of understanding, cooperation, collaboration and communication among community members, agencies, and special interests, to work toward realizing a common vision for landscape stewardship, which includes the cultural attributes, ecological processes, and economic viability that will sustain working families, open space, wildlife habitat, productive watersheds, recreational opportunities, and other sustainable uses.

In these early meetings, ranchers talked about their prior experiences with collaboration and the transformation they had witnessed as even skeptics became supportive once the collaborative group challenged their negative stereotypes of ranching. As one male rancher joked, "We had a pretty good little group. We even had a hippie...[who] probably came in as an anti-rancher, and he just completely turned

around.... It just shows the power of collaboration." Throughout these meetings, a core group of 13 ranchers and 3 Forest staff regularly participated as project partners, and a female rancher, Patricia, emerged as the natural leader of the group.

To develop their vision of collaboration, the group decided to organize more workshops. They especially wanted to improve their communication skills, learn about riparian management, and involve wildlife biologists who played important roles in developing the Forest Plan and assessing livestock activities. The professor and I had several conference calls with the government team, and two more planning meetings with ranchers. Patricia, the group's leader, participated in the calls and co-facilitated the meetings with me. With input from the professor and me, the group decided to hold additional workshops facilitated by the government team. The team used standard workshop formats they had previously developed, while ranchers and Forest staff determined the specific discussion topics and field trip locations. The following year in 2009, we held a two-day consensus building workshop, a four-day riparian assessment workshop, and a three-day riparian monitoring workshop. Ron secured funding for the workshops through extension, the regional Forest Service office and regional ranching organizations. However, there was no funding for evaluation or research. My research efforts were supported by university funding independent of this project.

In the early planning meetings, I proposed a PAR project, in which I could help the group reflect on their leadership role in this collaborative effort as it developed. I explained the research component would publicize what they were learning, which could help other groups struggling with similar issues. They liked the idea of learning as they went and telling their story to help others. As part of our agreed upon protocol, I

audio recorded and transcribed all meeting and workshop discussions. I also took on the role of group secretary and outreach specialist, for example typing and distributing meeting minutes, reaching out to potential participants, and publicizing events. Six months after our first meeting, the group worked with me to develop a conference poster for a national agricultural conference that described our evolving PAR vision. Several ranchers and Forest staff attended the conference held in a nearby city, and proudly stood by the poster describing “our collaborative work.” The proposed PAR would focus on the ranchers’ narratives of collaboration to promote reflection and learning within the group. I planned to identify narratives from the transcripts and bring them back to the group for reflection, so that we could document how their understanding of collaboration changed over time as they reflected on their experiences. We also discussed the idea that each ranch family could write its own story of collaboration, which could be published as a book. Initially this was a popular idea although it was never pursued.

Up to this point, I had travelled back and forth several times from my university to the Forest for meetings and workshops. While this arrangement was not ideal, my irregular physical presence was not so different from the pattern of socialization common in this rural region, where ranchers and government officials located in different parts of this large Forest might only see each other every few months or less at infrequent meetings. However, one year after the group formed, I arranged to stay in a rural community adjacent to the Forest. I lived as a companion to an elderly woman, whose family had harvested timber on the Forest since the 1950s. During my time with

her, I met many rural residents not directly connected to our project, which helped me understand diversity issues at a deeper level.

I expected to hold at least one meeting between workshops so the group could reflect on their progress and plan for the next meeting, but the group chose not to meet in between the two largest workshops, due to their busy schedules and the long distances many ranchers traveled to attend meetings. This left Ron and Patricia to do most of the planning based on their understanding of what was needed and their individual conversations with other partners. Meanwhile, I visited ranchers and Forest staff to get feedback and encourage reflection and participation in the workshops. Because of the group's lack of interest in meeting more than a couple times a year for reflection and planning, I began to question whether a PAR project with this group would fit the timeline and limited budget for my research. I lowered my expectations that they would want to invest the time needed to collectively reflect on their narratives of collaboration, and I re-designed the research to where I would take on more responsibilities for analysis and bring my preliminary findings to the group for dialog and reflection. This was a shift away from my original vision of PAR and toward more researcher-directed analysis; however this plan maintained connectivity between my research and the group's activities by having at least infrequent meetings where we could reflect together on our understanding of what the group was able to accomplish relative to their goals of collaboration and sustainable management. This shift also reflected successful negotiation of the terms of our engagement where we were able to flexibly define our roles and responsibilities relative to our interests and perceived benefits (Nyden, 2003).

In the fall of 2009 after a full year of workshops, ranchers and Forest staff decided to meet to plan activities for the next year. Since the winter season was slow, I decided to leave after the meeting and come back to the Forest the following year depending on what the group decided. They allowed me to facilitate this planning meeting and agreed to give me time to talk about my research, which I planned to use for group reflection. I spent several weeks combing through my data and preparing what I would share and how to create a comfortable space for dialog. My initial findings were essentially that while there had been a lot of good interactions, the group's activities and workshops closed off *some* opportunities for dialog, especially with the wildlife biologists (Chapters 2 and 3). I hoped people would consider this possibility and brainstorm how to improve learning and relationship building among diverse participants as they had discussed in their early meetings. This would allow the action and research components of the PAR project to address key dimensions of diversity as described by the group (Table 4-1). I also wanted to share the advice of ranchers from a collaborative group in another state—that these collaborative efforts benefit from broad leadership, meaning that others in the group might want to consider taking on more responsibilities. I shared these ideas with some people as I contacted them about the meeting. Although Ron was not able to attend, he talked by phone to many group members expressing his support for future activities. Over the weeks I planned for the meeting, I had several long phone calls with Patricia, who challenged my interpretation of preliminary findings. Yet, I felt we reached some understanding or at least a respect for our differences as we negotiated plans for the meeting together. I re-designed the meeting agenda to reflect her priorities and revised my presentation of preliminary findings using more

tentative language to describe my interpretations and more open questions to invite dialog.

Yet when I arrived for the meeting, Patricia explained that she prepared a new agenda, which did not include time for group reflection or presentation of my research. Instead she scheduled speakers to give updates on extension and Forest programs and time for small groups to brainstorm new workshop topics for the next year. I realized this eliminated one of the few opportunities I had to connect my research explicitly to the group's activities, which further shifted my work away from PAR and toward researcher-driven methods. As I accepted the new agenda, I negotiated with her for time to share my preliminary findings. She agreed it would be good to hear the advice from the other ranchers' groups I had contacted. Since I did not have much time, I spoke briefly and handed out printed copies of my presentation, encouraging people to contact me later. Ranchers and Forest staff returned to some of my comments later in the meeting, while others engaged in dialog with me over the next few months.

After this meeting, I decided I would not return to the Forest the following year to continue a PAR project with this group. While I was willing to invest time and energy to support the group's development with my outreach and research activities, I felt this was a risky strategy to continue if I did not have the support of the group's leader. Respecting her discomfort with my work, I shifted my research away from a focus on the group's leadership of this evolving collaboration to a focus on how participants in the public workshops negotiated differences with respect to sustainable Forest management (Chapters 2 and 3). After my involvement, the group continued to meet and hold additional workshops with the professor and the government team, who

promoted the success of this collaborative group at regional and national conferences.

Although I have not closely followed the group's development, based on announcements for their meetings and workshops, it appears they may be gradually broadening their leadership and focus.

Participant Responses to Research

Despite the lack of well-defined collaborative research activities, participants generally responded positively to the research and my efforts to encourage critical reflection on diversity issues. Most people were open to my ideas and sincerely encouraged dialog with me and others. Although I was initially skeptical of initiating another PAR after my experience in Mexico, this group appeared promising to work with because of their sincere discussion of diversity issues in our early meetings. In a letter of support for a fellowship application, one ranch family humorously used a livestock metaphor to describe their appreciation of my role within the group, which helped them address the diversity issues they described as a lack of trust between ranchers and environmentalists. From that letter:

In ranching we say there are two ways to work with your cattle, one is the "whoop and holler" way and the other seldom used way, is low stress herding. Unfortunately, most of the ranchers subscribe to the "whoop and holler" method. I think they also apply this method when they deal with environmentalists and agency people. When they become frustrated they end up angry and that leads to them either walking out or yelling and getting into a big fight which makes things worse and solves nothing. With the low stress herding you mingle quietly with your cattle and help them get acquainted with you and learn to trust you.... The above is a crazy illustration but this is exactly what Jennifer appears to be doing with our group. She is mixing quietly with the group, building trust, pointing the group in a general direction and bringing up the stragglers! The ranchers need the science based information to have with them when discussing ranch issues with the agency and environmental groups and they need to learn "low stress techniques" in dealing with other people. The first time we met Jennifer we knew nothing about her but realized before the meeting

was over that she has a lot of natural skills in working with people as well as a lot of experience.

Although this metaphor described me as guiding the group's direction, which could have a negative connotation for PAR, I consider this to be an insightful description of my consistent focus on critical reflection and dialog with others. Rather than guiding the group based on my own vision of what they should do, I carefully listened to participants' goals—that is, where “the herd” was already going. Both in the meetings and individually, I encouraged “the stragglers,” who often had alternative views, to participate and asked everyone to reflect on their ideas in light of what they heard and experienced. After sharing my perspective and encouraging dialog, I followed whatever the group chose to do. For example, in the last meeting when Patricia showed me the new agenda, I respected her decision to minimize the role of research in group activities and subsequently shifted my research focus away from the group's emerging vision of collaboration.

Because research and action focused on highly personal controversial topics, understandably dialog and critical reflection were not always easy. As I introduced myself to ranchers and Forest staff, many people seemed to initially assess whether I was ‘for’ or ‘against’ them. I felt very comfortably ‘for’ everyone I met since I could see ‘the truth’ in all of their perspectives; however, it was difficult to communicate this to people who were used to taking sides on controversial issues. Since I was originally introduced by the university extension professor, ranchers who had worked with him understood that I was ‘for’ them. However, as I started meeting with wildlife biologists and suggested including them in workshop planning, a few ranchers questioned my motives and considered that I might actually be ‘against’ them. Although I developed

close relationships with a diversity of participants, I discovered that facilitating a PAR which aimed to address contentious issues and transform difficult relationships placed me uncomfortably in the middle of those difficult relationships. While this is expected in PAR (Nyden, 2003), relationships in this situation were more polarized than they had been in my prior experiences with PAR.

Although many participants were willing to talk about these diversity issues, key leaders expressed mixed support for PAR focused on this topic. The university extension professor continued to provide core financial and institutional support for the group's activities; however, he prioritized the technical aspects of environmental monitoring as a means to collaborative resource management and was less interested in research on communication and relationship building. In contrast, the government team who facilitated the workshops maintained a practical focus on communication skills and relationship building; however, they used standardized workshop activities to teach collaborative skills, as in a 'toolkit' approach to collaboration, which emphasized the use of specific communication techniques, rather than developing a sensitivity to local diversity issues (Chapter 3). Key Forest leaders were overall the most consistently supportive of discussing diversity issues both in group meetings and workshops, perhaps related to their professional responsibility to serve the public. The group leader, Patricia and I initially shared a lot of enthusiasm for the PAR project and the group's vision of collaboration. She was known to be an energetic, outgoing woman, recognized by Forest staff for her leadership in promoting sustainable management. Yet as the project developed and I raised diversity issues with her, she began to feel threatened and closed off certain topics for conversation.

When we talked in preparation for the final meeting, I explained, without sharing names, that some wildlife biologists did not feel welcome in the workshops, encouraging dialog with her on what this meant for the group's goal of collaboration and how we could improve future workshops. She responded by emphasizing the group's success and dismissing the suggestion that the participation of the biologists or the topic of collaboration warranted further discussion. While on the phone, I wrote her comments in my field notes:

You keep talking about how to collaborate. Maybe we don't want to use that word anymore. It seems to have a negative connotation. If somebody hasn't felt welcome at the workshops, it's not our fault. You and I have a little different concept of what collaboration is. I don't think we have to make collaboration the key of this thing. We had a whole workshop on how to talk with people. In my opinion, there's nothing wrong with what we have done. If they're not participating, it's because of their personal agenda. They're not willing participants.

In this conversation, she shifted responsibility for collaboration from the group who hosted the events to those not participating. She suggested that we stop talking about collaboration and further that being critical was not helpful to the group, which she was working hard to establish. Ultimately, this was also the reason she gave when she explained why she did not schedule time to discuss research at the last meeting.

Despite this mixed response from senior leaders, other participants, including male and female ranchers and Forest staff, consistently responded well to opportunities for critical reflection. After the last meeting, a rancher stopped me outside to acknowledge the value of my role as a researcher. She said, "It's really useful to have you help us take a step back and look at it from above to see what's going on better. You're good. You get us talking and push us along gently. You ask if someone else has an idea to try to get us all involved." Her description of my role was strikingly similar to the

recommendation letter, written by another ranch family the previous year. We spent a few minutes brainstorming how to make the biologists feel more comfortable in future meetings and she committed to try to reach out to them. Later that week, I attended an event where another rancher introduced me to her guests explaining the value of “our collaborative work,” which she described as the future of ranching. Humorously she said, “Jennifer looks small, but she’s tough. She brings us all together and tries to get us talking.” These instances and others suggest that my presence as an action researcher may have encouraged people to talk about topics that may have otherwise been avoided. In this sense, perhaps the research had local value, even though the PAR project was discontinued. Regardless of the research, the simple act of bringing people together for meetings and workshops created opportunities for dialog, and various participants took the lead in raising critical issues.

Interpreting PAR Practice

This PAR project is the most challenging to interpret since it suggests a confusing mix of transformation and co-option. The action components of the project exhibited all of the elements of an effective partnership according to Sanginga et al.’s (2007) framework, while there was less support for research activities or linkages between research and action. For example, the group expressed 1) a *shared vision and sense of interdependency* in meetings and workshops. The conference poster initially established a shared sense of purpose for the integrated action and research plan. There was 2) *strong and consistent support from senior leaders* for the action components of the project, including leaders from the university, the ranching group, the Forest Service, and the government team that facilitated the workshops. However, there was less support from leaders for the research. For both the action and research components,

there were 3) *various benefits for participants and institutions*, such as participant learning from the workshops, increased publicity and legitimacy for the group, improved relationships between the Forest Service and ranchers, and an opportunity for me to conduct research. Project activities also contributed to 4) *human and social capital development* as participants practiced communication skills, gained technical knowledge of resource issues, and networked with each other. There was 5) *mutual investment* as extension and the Forest Service contributed funds, ranchers donated their time to plan meetings and help collect data, and I contributed my time and effort acting as the group's secretary and outreach coordinator for the first year. 6) *The partnership was institutionalized* with official recognition at conferences and Forest Service meetings and continued investment in the expansion of workshops and collaborative activities; however, the research component was not included in this institutionalization. Notably, there were no requirements for evaluation or research associated with the funding and institutional support the group received.

In terms of critical reflection, I found that individuals representing different perspectives on diversity issues consistently engaged in first- and second-person reflection with me and each other. This occurred in one-on-one visits, group meetings, and workshops. However, I found some senior leaders were less willing to engage in dialog on diversity issues or reflect on how their own practices affected what was possible within the group. This meant there was limited institutional support to link research to the group's activities, which were still largely determined by these leaders, perhaps partly because the group was still at an early stage of its development. PAR projects often face resistance because their style and substance are meant to challenge

the status quo, which may be particularly uncomfortable for leaders who would like to maintain their level of control in the situation (Nyden, 2003). Ultimately, this lack of support for critical reflection from leaders undermined my role as an action researcher and shifted the possibilities for third-person reflection.

While the original PAR vision included publishing research *with* project partners describing how they had learned from their experience and improved their practice, my current research represents my own interpretations of what occurred in the workshops (Chapters 2 and 3). Although it is researcher-focused, this work maintains a critical focus on diversity issues, as in third-person reflection contributing to social change. While the project yielded critical research and perhaps critical action, suggesting transformation, these were largely separate activities. The conference presentations and publicity produced by the group have mostly been self-promotional. While this has increased the group's visibility and influence, much like the ranchers' network in Mexico, it also suggests possible co-option of participatory ideals. These superficial discourses of 'successful collaboration' create confusion about how to genuinely address diversity issues since those in power already feel the benefits from their 'success' and those who feel marginalized may not be in a position to publicly challenge such discourses.

Discussion: Understanding Transformation and Co-option

Together, these PAR projects provide an interesting contrast to consider what it means to navigate complex partnerships for transformative PAR. From these experiences, I highlight five core considerations that can help guide reflective PAR practice: 1) the timing of PAR relative to existing partnerships, 2) the cultural appropriateness of collaboration and group reflection, 3) a researcher's identity and legitimacy in relation to community diversity dynamics, 4) institutional support for critical

research linked to practice, and 5) the influence of public discourses of collaboration. I discuss these briefly and close with implications for action researchers and institutionalization of PAR.

The most serendipitous aspect of my work has been the timing of my entrance into the communities in relation to the existing partnerships and power relations in each context. In the Native American project, tribal members had recently gained administrative control of reservation lands and established a tribal college. Leaders from these organizations invited us as 'outsiders' to initiate linked action and research that challenged status quo power relations in resource management and education (Table 4-1, 4-2). As a research team, we were sensitive to the indigenous sovereignty issues, and together, we developed this PAR opportunity to fruition. In many ways, I did not realize how unique these circumstances were until years after the project. When I was introduced to the Mexican project, there appeared to be existing partnerships connecting ranchers, conservationists and government officials throughout the basin, but I soon realized there was little substance behind the superficial public discourse of collaboration. Also, communal village lands had recently been privatized, which meant ranchers were satisfied with status quo power relations and not interested in change (Table 4-1, 4-2). In the National Forest case, while many participants desired change, I may have arrived too early when the group was still reliant on a few powerful leaders, who were uncomfortable discussing diversity issues. Wicks and Reason (2009) indicate that groups may evolve to reach the comfort level needed for first-, second- and third-person reflection. In the Native American case, the official Memorandum of Understanding and the ability to maintain control of discussions by speaking in their

native language helped maintain a sense of comfort in research activities. Although outside the scope of my research, there are some signs that the ranchers' group associated with the National Forest has since distributed power among its members and may be opening up to alternative perspectives. At various points in these projects, I asked myself, am I forcing the process to fit my timeline? While I was on a timeline set by the funding available for my doctoral research, faculty researchers also have funding and time constraints specific to their appointments and other teaching, extension or administrative commitments. Often researchers deal with this timing issue by building relationships with partners for some years before even initiating research and also by working as part of a research team where responsibilities for partnership building can be shared among many researchers (Israel et al., 1998). However this approach can be risky since partnership building requires substantial energy and may never result in a productive research collaboration (Huisman, 2008).

I also found the cultural appropriateness of collaboration and group reflection was striking in the Native American project, where community meetings and democratic decision-making were already a part of everyday life. These group processes were not as natural in the Mexican and National Forest projects, where ranchers prided themselves on being independent and not interfering with each others' affairs. This leads me to consider whether group reflection is appropriate for all cultural contexts. What would it look like to conduct PAR with individuals instead of groups? Yet, this aspect of culture is not static either. With the National Forest group, a shared sense of interdependency has stimulated a new appreciation for collaboration among ranchers.

In all cases, the intersection of my identity with diversity dynamics in the community played a central role. In all three projects, I was able to stimulate dialog with at least some partners although there were substantial limitations to this dialog in the Mexican and National Forest projects. In this sense, a researcher's identity and effectiveness cannot be separated from the institutional support that establishes her legitimacy with project partners and creates possibilities to link research to action (Pini, 2003; Bond and Harrell, 2006). My institutional support was strongest in the Native American example, where research and action were jointly supported through funding and institutionalized agreements between the tribe and university. Institutional support was weakest in the Mexican example since verbal commitments did not reflect genuine interests and were not translated into action. With the National Forest, I had institutional support for my role in the action components of the project, but less support for my role as researcher and few linkages between action and research. Graduate students initiating PAR projects may face additional challenges since their legitimacy and status is directly dependent on their advisors and/or mentors within partner organizations. Further, because students are on a limited budget and timeframe and their research must be approved by their advisory committee, they are more vulnerable to sudden changes in the scope and direction of research (Gibbon, 2002; Huisman, 2008). Participants who disagree with the critical focus of a PAR project may find it easier to dismiss a graduate student in the role of action researcher rather than a professional researcher who has long-term institutional ties to research organizations.

Lastly, I found that genuine efforts to address diversity issues and empower rural residents were undermined when powerful stakeholders promoted uncritical or

superficial public discourses of collaboration and empowerment. Much like the critical pedagogy literature suggests (Freire, 1998; Mayes, 2010), when powerful stakeholders promote superficial discourses of collaboration, they create patronage relationships with less powerful partners, such that the policies and discourses of those with power constrain the terms of 'collaboration' and thus the possibilities for empowerment (Cooke and Kothari, 2001). In the Mexico example, the US government and international conservation groups leveraged political power and funding to insist on collaborative approaches to conservation after top-down attempts to establish a federal reserve were rejected by rural residents. Yet the premise of these 'collaborative' initiatives in Mexico were ultimately not conducive to collaboration since they strictly defined project objectives according to international conservation priorities without allowing space for local residents to influence project development. Uncritical evaluation of initiatives, such as the ranchers' network, led conservation groups to claim collaborative successes on paper that were never realized as power-sharing relationships. In the National Forest project, university extension, the government team that facilitated the workshops, and the Forest Service leveraged their power to support the formation and growth of the ranchers' group. Because these organizations benefited from their association with a successful citizen-led collaborative process, these entities began publicizing the success of the group shortly after its formation even though at that time the group's activities were still largely determined by those organizations that controlled the funding. Invitations to national and regional conferences increased the legitimacy and influence of the group, which perpetuated uncritical discourses of success. Meanwhile, some leaders did not want to acknowledge that some participants were disempowered by

these discourses. In both cases, the development of PAR projects and critical discussion of diversity issues were more difficult because of the presence of these powerful uncritical discourses. Because of the location of the Mexican basin along the international border, it is unlikely that rural residents will ever be in a position to negotiate conservation priorities with powerful international stakeholders; however change is more likely in the National Forest case as the ranchers' group continues to diversify their efforts and negotiate power and diversity issues.

Concluding Remarks

Although each researcher's entry into a community partnership will be unique based on who participates and how, action researchers can benefit from studying the experiences of researchers in other contexts to expand their understanding of what it means to navigate complex partnerships for transformative practice. The frameworks I used to reflect on these projects integrated elements of effective partnerships, personal subjectivity and diversity dynamics, and an understanding of critical reflection at three scales. For novice action researchers, the PAR literature with its abstract theories of empowerment and co-inquiry can result in a feeling of overwhelming paralysis, or conversely an unbounded passion (Smith et al., 2010). Critical reflections on PAR practice, such as the ones presented here, are useful as they provide realistic possibilities for how to translate theory into practice and how to bring practice back into theory, as in praxis. In the words of Freire, "Critical reflection on practice is a requirement of the relationship between theory and practice. Otherwise, theory becomes simply 'blah, blah, blah,' and practice, pure activism" (Freire, 1998: 30).

Further, the comparison of my experience in these three projects documents the evolution of my own understanding and practice of PAR. Huisman (2008) notes this is

generally lacking in the PAR literature, which often presents individual research projects as self-contained. Comparisons such as this illustrate how, “the understandings we develop in one project are part of the spiral of self-reflective cycles that culminate in new ways of framing subsequent projects” (Huisman, 2008: 394).

The academic community can institutionally support this type of reflective practice and the development of PAR learning communities by encouraging the publication of critical reflection papers, for example in graduate training programs (Taylor and Pettit, 2007) and academic journals (Pini, 2003; Bond and Harrell, 2006). Such critical reflections can be translated into role-play scenarios for graduate training to practice listening and negotiation skills, as I have experimented with in a graduate skills course on collaboration and conflict management for conservation and development. This type of organizational support can guide preliminary planning and later reflection to prepare action researchers to respond to the personal challenges that this work entails, so they can make thoughtful decisions about their role in community partnerships and the scope and direction of their work (Huisman, 2008).

PAR can further be institutionally supported with funding sources that require linkages between action and research and accommodate flexibility, so that activities can continue to evolve as participants learn from their experiences (Nyden, 2003). These funding sources may also legitimize the role of action researchers. Since it is challenging to reflect on diversity issues relative to one’s own goals and practice, participants may reject critical project components if they are not required by funding sources or sponsoring organizations. In the Native American case, the extension grant we received explicitly linked action and research components, and the tribe required

that research was applied and participatory. Although some participants were initially uncomfortable with ‘outsider’ research, they accepted my role since it was embedded within the terms of our partnership and project funding. While this could lead to co-option of the process by researchers (Huisman, 2008), this arrangement seemed to satisfy a diversity of interests, including tribal members who originally protested my research. In contrast, I felt my role was undermined in the Mexican and National Forest cases by funding sources that supported action and rewarded ‘success’ without necessarily requiring critical evaluation or reflection.

Lastly, once a PAR project has reached some level of transformative practice, academic institutions can support third-person reflection by increasing opportunities for co-authorship with non-academic research partners. In my experience, this has been a rewarding activity and well-received by audiences; however, this process is not necessarily smooth and also presents new opportunities for co-option by researchers (Greenwood et al., 2006). In the Native American project, my friend and tribal colleague, Jim, questioned whether we really did research. Although he was still willing to work with me to develop the conference presentation, the messages in the presentation were primarily crafted for an academic audience interested in community partnerships and were less relevant to tribal interests. Did his participation as co-author at the conference reinforce a naïve academic ideal of participant empowerment in research? In our presentation we attempted to reveal some of the dissonance between academic and tribal perspectives, for example he emphasized how tribal members used their native language to maintain a sense of privacy and control when interacting with researchers.

However, I emphasize that we need to keep asking these questions to avoid co-option by the academic community (Huisman, 2008).

While each situation is inherently unique, these approaches to institutionalization can support the development of effective partnerships that account for diversity issues, allow flexibility, and link critical action and research. Rather than a ‘toolkit’ approach to standardized PAR practice, these institutional measures recognize that the strength of participatory approaches are based on personal qualities and social relationships. It is the ability of individual leaders to engage in critical reflection and negotiate diversity issues with various partners that holds promise for learning, empowerment and social change.

Table 4-1. Key dimensions of diversity in three PAR contexts. These tensions represent key aspects of difference around which individuals or social groups orient themselves.

Native American reservation	Mexican river basin	US National Forest
<ul style="list-style-type: none"> ▪ Tensions between legitimacy of indigenous and scientific agricultural knowledge in tribal policies and practices ▪ Tensions between White outside experts and authorities and the sovereignty and dignity of tribal members ▪ Tensions between agricultural development and overexploitation leading to degradation ▪ Tensions between widespread poverty and social problems and dependence on government assistance programs 	<ul style="list-style-type: none"> ▪ Tensions between competing livelihoods and land uses, such as ranching, mining and establishment of protected areas for conservation ▪ Tensions between private and communal land ownership, leading to semi-privatization of most communal lands ▪ Tensions between a tradition of local political activism and the strong presence of federal authorities ▪ Tensions between US and Mexican interests, especially relative to the international border ▪ Tensions between urban, educated experts and rural residents 	<ul style="list-style-type: none"> ▪ Tensions between competing priorities for forest management, such as agricultural production, conservation of endangered species and wild game management ▪ Tensions between the government's authority to manage the forest and the rights of competing advocacy groups to try to influence their decisions

Table 4-2. Overview of three PAR projects

	Native American reservation	Mexican river basin	US National Forest
Guiding vision for initiating PAR	Participatory development of an agricultural curriculum that valued indigenous and scientific knowledge	Formation of a ranchers' group to support integrated conservation and agricultural development	Transformation of the oppositional relations between ranchers and environmentalists to increase opportunities for sustainable ranching
Institutions that sponsored PAR initiative	Tribal natural resource program, led by tribal members	Regional conservation organization, funded by USAID	Agricultural extension program of the state university
History of partnership	Tribe invited professor to join existing partnership	I introduced myself through mutual colleagues	Ranchers requested support from extension, professor
My role as researcher	Curriculum coordinator, facilitator, outreach specialist, resource specialist	Outreach specialist, resource specialist	Convener, facilitator, outreach specialist
My home institution	Agricultural extension program of the state university	University of Florida, distant, unfamiliar to participants	University of Florida, distant, unfamiliar to participants
Funding for project	Extension grant, proposal developed with project partners, in kind contributions	In-kind contributions by institutional partners	Funds from extension, US Forest Service, regional ranching organizations, in kind contributions
Funding attached to research	Grant recognized PAR goals and researchers' role	Student travel funds for exploratory research	Funding did not support research or evaluation
Duration of PAR	2 years, 4 months	6 months	1 year, 4 months
Scope of PAR	Participatory curriculum developed, implemented as a series of workshops	Met with diverse participants to gauge interest in PAR	Formation of a collaborative group, implemented a series of participatory workshops
Number of partners/participants ⁴	9/137	2/44	16/117
Continued action beyond research	Tribal college continued participatory curriculum development	Discontinued; formation of ranchers' network not pursued	On-going events; potential to transform historic conflicts

⁴ "Partners" refers to core participants who consistently shared responsibilities; "participants" refers to people who attended events and/or contributed ideas occasionally.

CHAPTER 5 CONCLUSION

This research provides valuable insight into *how* diverse participants manage differences in worldviews, knowledge, language and power as they address questions of sustainable resource management. The first paper demonstrates how formalized participatory processes for adaptive resource management can subtly privilege the expert knowledge of those leading the process, while marginalizing stakeholders whose views do not align with expert interpretations. Adaptive management processes that involve diverse stakeholders often include some type of training or capacity building activities, where experts may act as conveners, facilitators and/or instructors. However, this study illustrates some of the problems that can arise when technical experts take on these leadership roles, raising the question, should facilitators have expert knowledge of the topics discussed? This question generates much debate in the facilitation literature with responses largely dependent on the goals and context of facilitation (Heron, 2002). Yet rather than focusing on this as an example of 'biased' facilitation, I suggest that all facilitators influence the process with their subjectivities and that because of this, consensus will always be problematic whenever power and expert knowledge are left unquestioned.

While such collaborative processes are commonly facilitated to reach a shared understanding or consensus view of the social-ecological system, these findings illustrate that diverse stakeholders will inherently have different perspectives, suggesting that an over-emphasis on agreement will systematically constrain expression of diverse views. Thus, leaders and facilitators of adaptive management—whether experts or not—can more effectively promote social-ecological learning and

adaptive decision-making when they are tentative in their own convictions and consider the knowledge, interests and power of diverse stakeholders before pushing for consensus. These insights can be incorporated into facilitator training and adaptive management courses to emphasize that there will always be an incomplete understanding of how to manage for sustainability.

Further problematizing consensus and expert knowledge, the second paper elaborates the theoretical basis for how different communication strategies contribute to learning and civic engagement on controversial issues. Findings reveal that monolog, associated with expert authoritative knowledge, reinforced polarized meanings and social relations relative to the controversial issue of livestock grazing on public lands, while dialog, as in an exploration of differences between speakers, initiated creative problem-solving and transformation of polarized relationships. Since monolog is fundamental to achieving consensus this study suggests that collaborative processes structured to promote dialog will be more empowering for participants than those structured to reach consensus.

While this paper demonstrates how the workshop structure in some cases imposed the facilitator's monolog and his view of the social-ecological system, similar to the example of 'biased' facilitation from Chapter 2, it also illustrates how aspects of the workshop structure, such as unstructured question periods and structured symmetrical turn-taking, created the conditions for dialog to emerge. Although the importance of a 'good' facilitator and a well-structured process is often the central focus for collaborative process design, this study emphasizes that the responsibility for initiating and sustaining productive dialog largely falls to participants. Collaborative process design should allow

time and flexibility to encourage participants to adapt the process and direct the course of discussions. Reflecting my theoretical grounding in critical pedagogy, I believe it is the responsibility of facilitators to model and encourage dialog and at times interject critical perspectives into the process, rather than lead the discussion and direct participants to their particular view of the system. Collaboration and conflict management training can emphasize this point by encouraging facilitators to reflect on their own subjectivities relative to the diversity of perspectives expressed by participants. This can help facilitators become more comfortable with shifting the focus of facilitation away from a strictly planned schedule of activities toward improvisation with participants. This type of facilitation can be challenging since it requires a personal level of comfort with complexity and unpredictability.

The third paper, which focused on collaboration in participatory action research (PAR), also emphasized the importance of dialog and adaptive process design, in this case among researchers and participants, to negotiate a wide range of action and research efforts to holistically address sustainability issues. This study described the unique character of each PAR initiative and discussed various aspects of transformation and co-option based on an analysis of how power was shared among PAR partners and the extent to which participants engaged in critical reflection. Based on this comparison, I identified core considerations for reflective practice that can help action researchers manage the development of PAR partnerships, so that researchers can more consciously work toward transformation and avoid co-option. This study warns against over-reliance on ‘participatory tools’ designed to structurally encourage participant engagement, and emphasizes the importance of adapting collaborative processes to

suit local needs and culture. This chapter concludes with strategies to institutionally support the organic development of PAR partnerships, for example by encouraging the growth of learning communities focused on reflective PAR practice and providing flexible funding opportunities that link critical action and research.

Significance of Research

In the three study contexts discussed here, powerful stakeholders promoted a discourse of sustainability that recognized the interdependencies of social-ecological systems and the need to involve a diversity of stakeholders who have power to influence those systems. Since these studies represent a wide range of cultural and institutional contexts, this common discourse of sustainability indicates a larger societal shift toward collaborative resource management. Yet this body of research indicates that this popular understanding of collaborative resource management may be limited in some important ways. While powerful leaders in each study context structurally created opportunities for diverse stakeholders to become engaged in resource management, some efforts reflected a superficial understanding of how to collaborate with people who have diverse perspectives on controversial issues.

Managing power and conflict among diverse stakeholders is increasingly recognized as a fundamental challenge to managing for sustainability. While the ideals of managing diversity in this context are well-established in theory and various participatory frameworks have been widely used in practice, few studies examine *how* the ideals of theory are translated into practice and, conversely, *how* reflective practice can contribute to theory (Fischer, 2009). Whereas most studies rely on interviewing and participant observation to characterize collaborative processes broadly as in case study research or ethnography, the first two papers are unique for examining real-time

conversations in depth to examine how participants interact in natural settings. Critical discourse analysis of these conversations revealed layers of subtle interactions that participants may not have been willing to talk about or even aware of.

Specifically, Chapters 2 and 3 illustrate the subtleties of how some powerful stakeholders held strongly to their convictions and were unwilling or unable to consider alternative perspectives on conservation and agriculture, even as they publicly expressed support for collaborating with diverse stakeholders. Interestingly, the controversies and conflicts described here involved people who were deeply committed to slightly different visions of sustainability, rather than people who rejected the premise of sustainable management itself. In Chapter 4, critical reflection on collaboration in a Mexican river basin revealed a similar contrast between the discourse and practice of collaboration. Here powerful stakeholders publicly supported the ideal of collaboration, while tightly focusing ‘collaborative’ activities on their particular vision of sustainability. In contrast, the discourse and practice of collaboration in the Native American context is quite different because of the tribe’s deeply embedded cultural traditions of democratic governance. In this case, public discourses of collaboration were quite nuanced, reflecting the micro level details of collaborative decision-making that were a part of everyday life. The Native American PAR effectively catalyzed the efforts of diverse stakeholders to realize transformative social change and progress toward sustainability. Together, these examples suggest that superficial discourses of collaboration, commonly expressed as monolog, create substantial barriers to sustainable management. On the other hand, these studies also suggest that dialog can be used to disrupt these superficial discourses and initiate learning, empowerment and change.

Highlighting the power of dialog, Chapter 3 clarifies how theories of empowerment based on Bakhtin's dialog rather than Habermas's consensus can more effectively support civic engagement to address public issues of sustainability. This theoretical shift has direct implications for the design and facilitation of various types of formalized participatory processes, such as public forums addressing contentious issues (Chapter 3) and planning groups for adaptive management (Chapter 2). It also suggests strategies to increase the quality of civic discourse, for example by designing capacity building activities into collaborative processes to help participants learn to recognize and intentionally use dialog when faced with diversity issues (Chapter 2).

With respect to qualitative methods, this dissertation demonstrates the relevance of critical discourse analysis and PAR to the theory and practice of sustainability. Critical discourse analysis can be used to reveal the subtleties of micro level interactions, contributing to critical awareness of how language is used to manage differences in perspective and power. With this nuanced understanding of discourse, people can learn to modify their own communication practices to more meaningfully engage diverse participants in collaborative resource management. However, critical discourse analysis can be time-consuming. Researchers must be familiar with participants and various aspects of the study context, so that they can recognize participants' voices from audio recordings and interpret participant interactions relative to the larger social context. For those researchers who do not have background knowledge of linguistic theory, there is also a steep learning curve associated with using this method. However, once researchers become knowledgeable about the study context and the theoretical foundations of this approach, Chapters 2 and 3 suggest approaches to focus analytic

tasks to increase efficiency. For example, researchers can selectively transcribe and analyze parts of the recorded data based on well-defined research questions, rather than transcribing and analyzing the entire body of recorded material, as I did for this dissertation.

With a similar critical focus, PAR seeks to raise awareness of diversity and power to translate that awareness directly into collective action, as in Freire's (1998) conscientization. Chapter 4 provides examples of how every PAR effort catalyzed dialog among at least some participants, even when the PAR initiative was discontinued. This dialog seemed to deepen participants' understanding and practice of collaboration. Even more than critical discourse analysis, PAR requires substantial investments of time and energy from everyone involved. Further, it may be personally challenging for researchers and participants since PAR is explicitly designed to bring conflicts to the surface. However, the challenges associated with PAR can also be seen as valuable opportunities for learning that can counter superficial discourses of collaboration and encourage more productive civic engagement in sustainability issues.

Thus, the three studies included in this dissertation, which examined participation at different temporal and geographic scales and in different cultural and institutional contexts, contribute to a greater understanding of the highly dynamic and contextualized process of *how* diverse stakeholders productively manage differences as they work toward sustainable resource management. These academic papers contribute to the theory of collaborative resource management, while my fieldwork directly contributed to the practice of sustainability as I engaged with diverse stakeholders to increase awareness of dialog, collaboration and sustainable watershed management through

reflective practice. This work requires personal growth and learning as much as a focus on collective action, and for me, the benefits of this research have also been personal. While formalized structures and institutional support for collaborative resource management are essential to large scale efforts, at its core, collaborative practice is an improvisational feat that requires continual self reflection, dialog and negotiation among diverse stakeholders to work through challenges and realize synergies.

Directions for Future Research

The unique theoretical and practical insights revealed in this body of work were produced through qualitative research methods not commonly used in agriculture and natural resource management. Questions posed here are not easily addressed with quantitative or positivist qualitative methods, which represent the research traditions historically supported by these disciplines. This dissertation suggests that expanded use of critical constructivist research can open new avenues of inquiry related to civic engagement and collaborative resource management. Work in this vein can push forward the science of sustainability and increase the relevance of academic research to facilitators, leaders of collaborative processes, resource managers, community members and various other stakeholders.

APPENDIX A GLOSSARY OF TERMS

Aestheticization—Fairclough's (2008) term describing the contemporary trend toward marketing one's image, especially highlighting how government agencies and universities establish an outward image of public service to maintain political and economic power.

Attributed statement (an attribution)—a statement that directly references or quotes the source of its meaning (Fairclough, 2008). An example of an attributed statement is, "Forest Service leadership said they couldn't attend the meeting today." An unattributed example is, "Forest Service leadership won't be attending the meeting today."

Communicative and strategic action—From Habermas's (2000) theory of communicative rationality, communicative action is aimed at reaching mutual understanding (e.g. many casual conversations), while strategic action is aimed at achieving one's strategic interests (e.g. advocacy campaigns)

Constructivism—A theoretical perspective which establishes that individuals construct meaning as they subjectively experience the social and physical world. According to this perspective, there are multiple realities and interpretations of the social and physical world based on the unique perspectives of each individual, their social interactions with others and their historical, social and political context (Crotty, 2006).

Critical constructivism—A theoretical perspective that seeks to illuminate multiple views of reality to challenge assumptions of universal truth and objectivity that tend to eclipse alternative or minority views. Some critical constructivist researchers aim to solely reveal differences in power and perspective to raise awareness, while others, following the traditions of critical pedagogy and participatory action research, take their work a step further and expressly seek to promote social change, as in Paulo Freire's conscientization (Kincheloe, 2005; Crotty, 2006).

Critical reflection—the practice of questioning one's practices, beliefs or assumptions to stimulate learning. Critical reflection can occur at three scales—first-person reflection as internal dialog focused on self-directed questioning, second-person reflection as dialog within a face-to-face community directed at questioning community practices, and third-person reflection as public discourse designed to question social norms and practices (Reason and Torbert, 2001).

Dialog—an exploration of differences based on Bakthin's dialogic theory of knowing
(See Appendix C for further explanation)

Discourse—language and other sign systems, such as visual displays or gestures used in communication (Gee, 2005; Fairclough, 2008). Micro level discourse refers to language or media produced by individuals, for example in conversation or

writing. Macro level discourse refers to particular meanings, words and phrases that together promote a particular view of the world, for example the discourses of sustainable agriculture and environmental conservation.

Diversity—dimensions of social difference around which individuals and groups orient themselves (Van Dijk, 1993; Harrell and Bond, 2006). Aspects of diversity commonly discussed are race, ethnicity, religion, social and economic class. Here the focus is on perspectives on sustainability, interests in natural resource management, livelihood or professional affiliation, educational background and worldview.

Implied statement (an implicature)—a statement whose meaning can be logically implied based on a shared understanding of how language is used in communication. In particular, Grice (2006) identifies four logical maxims for conversation, which are further explained in Appendix D.

Intertextuality—the presence of embedded references to other texts or previously established meanings (Lesic-Thomas, 2005; Fairclough, 2008)

Participatory action research (PAR)—a research approach that engages participants in collaborative inquiry, where researchers and participants cycle through phases of action and critical reflection. PAR links action and research to promote learning, empowerment and social change with the specific aim to engage participants who are typically marginalized or objectified as ‘others’ in society’s dominant discourses (Reason and Torbert, 2001).

Postivism—A theoretical perspective grounded in the belief that there is a single absolute truth that people can approximate using the scientific method. According to this perspective, individual subjectivity interferes with a complete understanding of reality, and so research methods are designed to objectively measure aspects of the world with the goal of developing generalizable theory. The validity of research is directly associated with the researcher’s ability to minimize subjectivity in data collection and analysis, which is negatively referred to as bias (Crotty, 2006).

Sustainability—an approach to development that aims to “meet the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987). This concept includes explicit recognition of the interdependencies between social and ecological systems and linkages between global and local processes of change (Kates et al., 2001; Walker et al., 2006).

Sustainable livestock grazing—agricultural practices that maintain economically viable livestock operations through sustainable use of native vegetation and available surface water, sometimes supplemented by pumped ground water (Holechek et al., 2004). Sustainable grazing requires that managers adjust the number, kind

and class of livestock, the seasonality and duration of grazing and the area of land grazed to prevent livestock from negatively impacting the potential productivity or stability of the ecological system. Sustainable livestock management in this context assumes a watershed focus, recognizing that management actions in any part of the watershed may affect ecological and hydrologic processes throughout the entire watershed.

“Sustainable multiple use” management—the concept that guides management of all National Forest Service lands. It includes a commitment to protect and restore Forest lands, along with a commitment to meet the diverse needs of the public by balancing multiple uses of Forest resources. Historically multiple use management focused on extractive uses, while in the last few decades management priorities have shifted to favor recreational uses and conservation values (Quigley, 2005).

Worldview—an individual’s positionality in the world (Crotty, 2006), also commonly discussed in terms of intentionality (Kincheloe, 2005), which recognizes that individuals orient themselves to the world based on integrated aspects of their identity, social relations, culture, values, knowledge and socio-political history.

APPENDIX B
EXTENDED EXCERPT INTERPRETING CURRENT CONDITIONS AT THE FIRST
FIELD SITE

Helen (Resource Specialist): Just a quick question on these deposition pools. You know, it's not. It sounds like they're kind of functioning like a headcut in that they're just going to continue marching up, right, but they're repairing themselves as they go. Um, there's nothing, you know, is there anything that we can do, to stop that process? You would think with really strong vegetation, really strong vegetation at the head, or, or the rock, you know, might slow it down. But is there any type of management change that we can make out here, to, to stop that, or lessen the process, or?

Don (facilitator): I don't think.

Unidentified Male: Do we need to worry about it?

Don: Mechanically I would not do anything with it. Because this is flat, and if you rock that and kind of keep the water from going over it, it's just going to go around it and form another one. So, yeah, anytime that you can improve the vegetation, it's going to slow that process down. But I don't think you're ever going to truly stop the process, because I think they're part of the potential out here.

Helen: Do you think that's natural?

Don: Um hm.

Helen: With the best management in the world, you're going to see those little pockets?

Don: Yeah, because I think we've got climatic things going on here. You know, the way this site was developed geologically, and then the climate we have today, as far as, you know, where we're at, you know, and stuff. [Evan, a rancher, beginning to speak over Don] It's part of Mother Nature.

Evan (Sprucedale rancher): --I think this is the best management right now. I mean we're seeing an upward trend. That's due to the management--

Don (speaking over Evan): Yeah. Right.

Evan (Sprucedale rancher): --Of you know, the [rancher] and the [Forest Service] rangers working together. We worked this, I mean, if we came back here 10 years ago, you guys. It looked like this road.

APPENDIX C BAKHTIN'S DIALOGIC THEORY

According to Bakhtin, knowing is fundamentally *polyphonic*, composed of a multiplicity of meanings layered together, yet still distinct—like the instruments of a symphony, which each maintain their autonomy and unique sound, while producing an additional richness and meaning when played together in concert (Nikulin, 1998). In this sense, meaning cannot be reduced to a unified abstract ‘truth,’ as in Habermas’s consensus, without necessarily losing the richness and creative potential of multiplicity (Wegerif, 2008). Multiplicity describes the multiple voices and perspectives of speakers engaged in conversation, while at a finer scale, multiplicity describes the layered words and phrases within a speaker’s utterance that reference other voices and prior meanings, which together create new meaning. Bakthin refers to this multi-layered property of language as *heteroglossia* (Bakhtin and Emerson, 1984).

As a literary scholar and philosopher, Bakthin was concerned throughout his life with the artistic challenge of translating literature from one national language to another (Emerson, 1984). He complicates our understanding of everyday communication by suggesting that each speaker with their unique time and place in history can never understand the world in the same way as another person. Every speaker uses language in a unique way, and thus, translation is never complete. When addressing listeners, speakers chose their words in anticipation of how listeners will interpret them, knowing that each person draws from their own experiences and knowledge of past meanings for interpretation. Bakhtin describes understanding as a process of *inter-illumination*, where meaning exists suspended in the relational space between speakers and listeners. Thus, neither speaker nor listener can understand the full meaning of what is

expressed between them. Knowing is essentially *unfinalizable*. According to Bakhtin, learning is the process of recognizing the incompleteness of one's own understanding and reaching out to explore the 'other' through dialog. In contrast, monolog is an expression of absolute knowledge, where powerful individuals use their authority to define what they consider to be 'correct', in the process marginalizing the 'other' and closing off opportunities for dialog and learning (Bakhtin and Emerson, 1984; Nikulin, 1998). Bakhtin explains the only interaction of consciousnesses that can occur with monolog is when, "someone who knows and possesses the truth instructs someone who is ignorant of it and in error" (Bakhtin and Emerson, 1984): 81).

APPENDIX D LOGICAL MAXIMS OF CONVERSATION

Conversational implicatures are those meanings which can be generally inferred based on the four logical maxims of conversation: quantity, quality, relevance, and manner (Grice, 2006). The maxim of quantity supposes that a speaker will say what is needed for understanding and nothing more; the maxim of quality supposes that a speaker will say only what is genuine and can be supported with adequate evidence; the maxim of relevance supposes that a speaker will only say what is relevant to the current conversation topic; and the maxim of manner supposes that a speaker communicates clearly, in a way that avoids ambiguity, obscurity, and unnecessary complexity. Standard conversational implicatures use these logical maxims to directly imply meanings; whereas non-standard conversational implicatures purposely violate these maxims to draw attention to what is hinted at, understated, or ambiguous, as in the use of sarcasm or irony.

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BIOGRAPHICAL SKETCH

Jennifer Arnold was born outside of Philadelphia and grew up in Kentucky and Wisconsin, where she began to realize the cultural and natural diversity of the US. In Wisconsin, she studied Spanish and eventually became fluent through the friendship of native Spanish speakers. She attended the University of Wisconsin-Madison, where she obtained a Bachelor of Science degree in botany. As a student, she worked on research projects in plant physiology, soil physics, silviculture and plant ecology. She was also active in the American Indian Studies program. Jennifer comes from a family of scientists, which inspired her to explore different facets of the physical and social sciences to find her niche. In her free time, she took a leadership role organizing cultural exchange activities for an indigenous Ecuadorian group, where she learned Andean music and a bit of Quichua. After college, she moved to the Bronx to work in the herbarium of the New York Botanical Garden. In New York, she became involved in community garden projects and Latin American solidarity events. Motivated by a desire to engage in more applied agricultural work, Jennifer moved to the southwestern United States to obtain a Master of Science degree at the University of Arizona in Rangeland Science and Management. In this experience, Jennifer deepened her knowledge of desert ecosystems, tribal sovereignty issues and participatory action research, working with tribal ranchers on ecological and social aspects of sustainable livestock management. In her studies, she also focused on qualitative research methods in education and ecological monitoring for adaptive resource management. After completing her degree, Jennifer worked in Arizona for two years as a Rangeland Specialist and Certified Conservation Planner with the USDA Natural Resources Conservation Service, followed by a year coordinating an adaptive grazing management

project on the Santa Rita Experimental Range. During this time, she organized many workshops and educational events covering topics in conservation planning, plant taxonomy and ecology, ecological monitoring and sustainable grazing systems. She also played an active role organizing African cultural events with the Yoruba Social Club of Tucson. As a graduate student at the University of Florida, she organized and facilitated events with the Center for Latin American Studies' Tropical Conservation and Development Program and the School of Natural Resources and the Environment, including a series of workshops on participatory research. Jennifer has taught graduate students and professionals in conflict management, collaborative process design and qualitative research methods. She has facilitated various large collaborative groups addressing complex natural resource issues. She has also been active in the cross-campus Qualitative Research Community. After graduation, she plans to continue working at the interface of science, sustainability and civic engagement, helping to facilitate communication, learning, and collaborative action among diverse groups of people.