DISSERTATION

ORGANIZATIONAL CHANGE IN THE UNITED STATES FOREST SERVICE: THE ROLE OF COMMUNITY COLLABORATION

Submitted by

Patricia Biddle Orth

Department of Forest and Rangeland Stewardship

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Doctoral Committee:

Advisor: Antony S. Cheng

Maria E. Fernandez-Gimenez
Robin S. Reid
Peter L. Taylor

ABSTRACT

ORGANIZATIONAL CHANGE IN THE UNITED STATES FOREST SERVICE: THE ROLE OF COMMUNITY COLLABORATION

Over the last three decades, collaboration has come to the fore as a way to address natural resource management problems that are often complex and contentious. As such, a new way of doing business has emerged for the United State Forest Service (USFS) as it engages community members in collaborative governance arrangements created to address forest management issues. USFS field-level personnel and the community stakeholders involved in collaborative governance arrangements expend valuable and limited resources to obtain collaborative outcomes. Field observations suggest that in order for collaborative outcomes to be durable and maintain longevity, changes must occur at the organizational level. However, few existing studies that document organizational changes made by natural resource land management agencies as a result of the agency's engagement in collaborative governance arrangements with community stakeholders. This dissertation provides theoretical and practical insights into the organizational changes occurring at three USFS field offices.

This exploratory, qualitative study employs a case study approach and semi-structured interviews were conducted with agency personnel and non-agency stakeholders. Document analysis of meeting minutes and personal observation data were also conducted. The data yielded the richest results when interpreted through three overarching theoretical lenses: organizational change, public administration, and collaborative governance. The results revealed that organizational changes are occurring at the field-level as a result of the actions of individual actors as they cross organizational boundaries. The outcomes of these changes can be beneficial to the agency, but a cautionary tale is presented suggesting that collaborative processes may

impede, if not derailed, by power imbalances. The role of trust, or more accurately, the lack thereof, and its ability to change organizational boundaries and create power imbalances in the shared decision-making arena emerged as finding of importance to land managers and collaborative governance theory.

This dissertation advances the scholarly and practical knowledge of organizational change by presenting empirical evidence of the impact of community collaboration on federal natural resource agencies. It is necessary for the leadership of the USFS to understand their role in the collaborative process and to understand how and why these changes are taking place if they are to be sensitive to the added pressures and tensions that collaboration brings to their individual staff members. Managers in the USFS will need to be cognizant of the attributes of trust and should encourage their staff to build trust with stakeholders if they wish to maintain equitable power positions in the shared decision-making process. Future research that provides evidence of the linkage between organizational change, trust, and power would be useful in further understanding how the collaborative process and the collaborative behavior of individuals in natural resource management links to the outcomes of collaboration.

ACKNOWLEDGEMENTS

Several years ago, I had the opportunity to play a small role in helping a friend prepare for a climbing expedition to Mount Everest. It became immediately clear to me that undertaking such a feat took countless people playing differing roles of varying duration and intensity. My friend was the first to acknowledge this as he planted his flag on that summit; it was his solo achievement, but it was a collaborative accomplishment. I liken my journey through the doctoral process and the completion of this dissertation to my friend's climb. I would not have undertaken this journey, let alone completed it, without the support and encouragement of many individuals.

First and foremost, I cannot express enough gratitude to Dr. Tony Cheng for taking me on as a graduate student and for his guidance, knowledge, and patience throughout the, sometimes arduous, process. I began this journey as a wildlife biologist who had a yearning to learn about social science and I am ending it as a working member of the social science community. This transformation simply would not have happened without Tony.

I want to express my sincere thanks to my academic committee, Drs. Robin Reid, Maria Fernandez-Gimenez, Peter Taylor and, Peter Newman. These esteemed individuals are the finest in their respective fields, providing the highest examples of professionalism and scientific integrity. I am thankful that they have generously given of their time and knowledge to help usher me through this process.

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DEDICATION

Everything changes, nothing remains without change.

~ Siddhartha Gautama

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CHAPTER ONE: INTRODUCTION

1.1 Introduction

For all of life's uncertainties, there remains one indisputable, inescapable fact. Everything changes. How we respond to change determines our ability to grow, learn, and thrive. We only need to look so far as our own lives to see examples of those who have embraced life's changes well and who live with grace and resilience. Resiliency is not limited to the human condition, however. In ecological systems, Holling and Gunderson (2002) define resiliency as "…the magnitude of disturbance that can be absorbed before the system changes its structure by changing the variables and processes that control behavior" (Holling and Gunderson 2002). By the definition of resiliency presented here, if a system is unable to retain resiliency, it will be forced into collapse and reorganization. The same definition could be applied to organizational systems as well. We can think of an organization's resiliency in terms of its ability to negotiate disturbance and undergo change at multiple points and scales. Organizations, such as public natural resource management agencies, often struggle to retain their structure and culture in the face of disturbances (Dooley 1997), whether that disturbance is social, political, or ecological in nature. Entrusted with the welfare of our nation's natural resources, it is vital that these agencies are able to adapt to disturbances and continue to carry out or adapt their missions effectively and efficiently.

One such agency, the United States Forest Service (USFS), has a rich history of transition and adaptation in response to changing socio-political and ecological climates. The USFS has been a successful organization throughout its storied history (Clarke and McCool 1996). Much of this success can be attributed to its ability to adapt to the needs of society. From the founding principles of timber production, efficiency, and expertise, the USFS has seen several "shifts" in

its operational paradigm including marker events such as the post-World War II surge in public demands for recreation, the inclusion of environmental values in the 1960's, and the rising call for ecosystem management in the 1990's (Kennedy and Quigley 1998). Recently, the public's demand for a more active role in forest management decision-making has led to a groundswell of collaborative governance arrangements where USFS personnel share decision-making and planning activities with interested community stakeholders. To put this in terms of Holling and Gunderson's (2002) resilience framework, these collaborative arrangements are a form of disturbance to which the agency must learn to adapt.

Indeed, in the last three decades, a new way of doing business has emerged for the USFS as it engages community members in collaborative governance arrangements created to address forest management issues (Dukes 2001; Cestero 1999; Scardina, Mortimer, and Dudley 2007; Singleton 2002). As budgets are stretched and human resources constrained in the USFS, collaborative efforts often become an important avenue for getting on-the-ground-work completed. These collaborative processes are not without their costs, however. USFS field-level personnel and the stakeholders involved in collaborative efforts expend valuable and limited resources to obtain collaborative outcomes such as building successful working relationships, sharing information and resources, building trust between the agency and community members, improving communications, and implementing on-the-ground restoration projects (Bentrup 2001; Carr, Selin, and Schuett 1998; Gray 1985; Gray 1989; Leach and Sabatier 2005; Schuett, Selin, and Carr 2001; Selin, Schuett, and Carr 1997; USDA 2009). It stands to reason that sustaining collaborative outcomes over time would be desirable and prudent.

Field observations suggest that in order for collaborative outcomes to be durable and maintain longevity, changes must occur at the organizational level; organizations simply cannot

continue to do "business as usual." Indeed, organization change literature suggests that sustainability of changes rests in the institutionalization of those changes (Buchanan et al. 2005). Yet, questions remain about the type, magnitude, and scale of changes that must occur within the organization. I argue here that, if organizations do not reshape their capacities, commitment levels, and allocation of resources, collaborative outcomes risk becoming merely short-term victories in terms of ecological, social, and economic improvements.

A review of the literature finds a small number of works that describe the role of organizations, government agencies in particular, in the collaborative process (Koontz et al. 2004; Wondolleck and Ryan 1999). These studies focus on how organizations participate in or their perceptions about collaboration (Carr, Selin, and Schuett 1998; Selin, Schuett, and Carr 1997). The interplay between the broader political-organizational environment and collaborative processes is understudied. Thus, the primary objective of this exploratory analysis was to deepen the understanding of the organizational changes affecting a federal land management agency in response to its engagement with community collaborative efforts.

1.2 Conceptual Model and Overarching Research Questions

Previous research into the organizational components of collaboration in natural resource decision-making is often focused on the structures and processes of the collaborative group itself. This dissertation focuses on the organizational changes that occur within a natural resource agency as it adapts to the inclusion of community collaborative efforts into its decision-making process, a line of inquiry that has been little examined. Because of the relative scarcity of existing literature on this topic, I developed a conceptual framework to guide my inquiry (Figure 1). This framework was developed based on a literature review, initial field observations, and insights gleaned from informal conversations with practitioners and researchers. The framework

describes the interplay between a collaborative process and the broader political-organizational environment and encompasses several attributes and interactions among those attributes. In Figure 1, the USFS is shown to be one organizational entity connected by weak ties (Granovetter 1975) to other entities. When individual agency personnel engage with a collaborative effort, they are subject to the learning and relationship-building that occurs during the course of the collaboration process (Daniels et al. 1996; Daniels and Walker 1996; Daniels and Walker 2001; Kallstrom and Ljung 2005; Schusler, Decker, and Pfeffer 2003). The collaborative groups consisted of a variety of stakeholders including private citizens, representatives of the forest industry, non-profit personnel, environmentalists, independent forestry professionals, and USFS agency personnel. As a result of the collaborative process, these stakeholders return to their home organization with new knowledge, relationships and responsibilities. The resulting individual and organizational-level changes that USFS staff members make within their home organization was of particular interest to me and led to the formation of the overarching research questions of this study: 1) *Is the USFS making changes in its organizational structures and processes as an adaptation to community collaborative efforts? 2) What changes are occurring? 3) How are the changes being made?* It is important to note here, that this study aims to look only at the changes made at the ranger district and supervisor office level. Critical organizational changes in response to collaboration may be occurring, or possibly resisted, at higher levels within the USFS; however, such analysis is beyond the scope of this study.

1.3 Methodology, Data Collection, and Data Analysis

Because of a relative scarcity of existing studies documenting the organizational changes and adaptations made by any federal natural resource land management agency as a result of their engagement with community collaboration, this study employs qualitative research methods

applied to a sampling of case studies. As Yin (2009) notes, a case study approach is useful when: 1) research questions seek to answer the "how" of a situation; 2) the researcher has little control over behavioral events; and 3) the focus of the study is a contemporary social phenomena. This study satisfies all three of these criteria.

Three case studies were chosen as units of analysis. To protect the anonymity of interviewees, I use pseudonyms for the case studies and the national forests throughout the dissertation. The three case studies that were chosen as units of analysis were: 1) The Northmont Forest Restoration Coalition (NFRC) - USFS Region 6; 2) The Lone Mountain Forest Restoration Collaborative (LMFRC) -USFS Region 4; and 3) The Meadow Valley Forest Collaborative (MVFC) -USFS Region 2 (Table 1). The three collaborative efforts are similar in purpose with each group working with their respective national forests on forest restoration issues. The three case studies differ in that they occur in three separate administrative regions of the USFS, vary in time since inception and in formality of operational structure.

The data were collected through semi-structured individual interviews, participant observation of group meetings, and content analysis of meeting minutes and reports. I chose to conduct interviews because I wanted to develop a nuanced and rich storyline for each case study. Interviews are often chosen by researchers when a direct line of questioning is desired and they are particularly well-suited for an exploratory and descriptive study such as this (Creswell 2009). I chose a semi-structured format rather than a structured format for the interviews because I wanted the flexibility to follow especially interesting avenues as they emerged during our conversations (Smith 1995).

The data were analyzed via coding and constant comparison in a modified grounded theory approach (Strauss and Corbin 1990). I modified the coding process as described by

grounded theory in that, in addition to the emergent codes, I developed *a priori* codes based on the sensitizing concepts derived from the literature and structurally-driven codes based on my research goals and questions (DeCuir-Gunby, Marshall, and McCulloch 2011). These codes were structured around varying theoretical lenses, such as organizational theory, public administration, and collaborative governance, through which I viewed the data. As a result of the constant comparison process, the data proved to yield the richest results when interpreted through three theoretical lenses: organizational change, public administrative, and collaborative governance. These three themes would form the foundation for the three main chapters within this body of work, each presenting its own set of research questions intended to further elucidate the organizational phenomena.

1.4 Chapter Overview and Specific Research Questions

The following three dissertation chapters are presented as stand-alone articles and were written with the intention of publication in scholarly journals. As such, the reader will notice some redundancy between the three chapters. The methodology sections are nearly identical. Chapter Two tables are presented at the end of Chapter Two. A reference is made to Table 2 in Chapters Three and Four, however, the table is inserted only in Chapter Two. Table 4 pertains only to Chapter Four and can be found at the end of that chapter. The terms collaborative network and collaborative group are used interchangeably.

Chapter Two describes organizational changes that are occurring due to the actions of individual actors. Using an organizational theory lens, I examine how the USFS is integrating collaboration into its decision-making processes. This chapter provides a window into the everyday workings of USFS personnel that managers can use to help staff, and therefore the organization, transition into collaborative decision-making processes. This chapter begins with

an overview of organizational change theory. A description of the methods used in this analysis and presentation of the findings follow. In this chapter, I use the following three questions to guide the inquiry:

1) What factors indicate change in individual behaviors or attitudes that are contributing to organizational change?
2) Is there a difference in the types of changes being made by individuals occupying different positions within the organizational hierarchy?
3) To what extent do the changes being made outlast the tenure of the agent making the change?

In the findings section I describe incremental changes in attitudes and behaviors that individual USFS personnel make in response to their engagement with community collaborative efforts. Chapter Two concludes with a discussion of key theoretical and management implications of these findings and recommendations for future research that could further add to the scholarship of organizational change in the USFS.

Chapter Three explores organizational change using a public administration theory lens and describes the organizational changes that occur when individual actors cross organizational boundaries in the course of their collaborative activities. In order to understand the extent, form, and static or dynamic nature of boundaries, I examine the attributes that make up organizational boundaries as the unit of analysis. Changes in attributes such as budget, time to project completion, and the type of information being shared with the public, contribute to organizational change and have on-the-ground implications for public investment and accountability of federal land agencies in general, and the USFS in particular. For this study, I developed four research questions to guide the analysis:

1) Are USFS personnel crossing organizational boundaries as a result of the USFS' engagement with community collaborative groups?

If personnel are crossing organizational boundaries:

2) What type of organizational boundaries of the USFS are being crossed as a result of their engagement with community collaborative groups?
3) In what ways are USFS personnel crossing boundaries?
4) What are the factors that hinder boundary crossing as a result of the USFS' engagement with community collaboration groups?
5) What are the factors that facilitate boundary crossing as a result of the USFS' engagement with community collaborative groups.

Chapter Four continues to focus on organizational change resulting from USFS personnel's collaborative activities. Using a collaborative governance lens to interpret the data, I examine the changing power dynamics between the USFS personnel and non-agency stakeholders that compose the collaborative group. I investigate these dynamics by describing the sources of power, the application of power, and the consequences of shifting power in the collaborative network. In this chapter, I used the following three research questions to guide the analysis.

1) What are the sources of power at play in the USFS – community collaboration interactions?
2) How is power being exerted in the USFS- community collaboration interactions?
3) What are the outcomes of the application of power and what are the consequences to the USFS's organizational structures and processes?

Chapter Five provides a summary of the findings from each chapter and discussion of overall implications and future research directions. A reference section is made available at the end of each individual chapter and a global bibliography is provided at the end of this document.

1.5 Researcher Positionality

The purpose of this statement is to disclose the factors that influence my world-view and hence, influence the way in which I conduct research about the world. Being forthright about my history and potential biases does not eliminate their impact from my interpretations, but by disclosing them here, I make them explicit.

I was born to white parents from working class families. Although I share the same race as most the participants in this study, we do not all share the same cultural background. My mother is from Germany and my father was raised in rural Arkansas. They met as a result of my father's military service and my mother's job on the military base on which my father was stationed. I was born in Germany at the end of 1959, but immigrated to the United States when I was six months old. I am an only child and my childhood would be considered by most, atypical. We moved frequently during the time my parents were married which resulted in me attending ten different schools throughout the elementary and junior high school years. We lived in several different parts of the country, from the rural south to the suburban west coast and Midwest, and a few places in between. Because of my family's transient nature, I was raised predominantly in suburban apartment complexes. My parents divorced when I was fourteen years old and my mother and I settled in Lakewood, Colorado. I attended the same high school throughout grades nine through twelve. My mother supported us on a minimum wage job and we lived sparsely, often hovering around the poverty line.

It was in Colorado that I was introduced to and fell in love with the Rocky Mountains. To paraphrase John Denver, I came home to a place I'd never been before. Not a day goes by that I am not thankful for my youthful days spent exploring and experiencing the rivers and forests of Colorado. I spent many days hiking and tubing, and many nights camping in the national forests of Colorado, particularly those that are easily accessible from the Front Range. I had always been an animal lover, but it was in the forests that I became a nature lover with a passionate interest in wildlife. I knew early on that I wanted to work in an occupation that sought to conserve the forests, and their inhabitants, but I took a circuitous route to get there, to say the least.

My deepest desire upon graduating high school was to attend university. My family's financial situation made that an implausible goal, however. I struck out on my own and I spent a large portion of my twenties in and around Los Angeles, California working various administrative positions, mostly in the advertising and graphic design industries. My interest in and passion for the natural world continued to grow during that time and I aimed to satisfy that interest by volunteering in the evenings and on weekends for various environmental and conservation organizations. The volunteer work was rewarding, but it did not satisfy my curiosity about the natural world nor did I it provide the intellectual stimulation of which I had a growing need. I was discovering the scientist in me, and she had a lot of questions!

I returned to Colorado and made a commitment to myself to become a wildlife biologist. It was at the age of thirty that I enrolled at Colorado State University (CSU) in the wildlife biology program. After three years of study, I graduated with a Bachelor of Science degree and after three more years of study, I graduated with a Master of Science degree. For the following eleven years I worked in the natural resource field for a non-governmental organization, a federal natural resource management agency, in the private sector, and as a research associate at CSU.

Throughout my education at CSU and again in my professional life, I came in contact with many federal natural resource management agency personnel and other stakeholders with varying interests and concerns about natural resource management. With my wildlife conservation interests in tack, I learned that there is more than one way to view an issue and my view about natural resource management matured into one of sensitivity to stakeholder differences through the application of scientific knowledge. During this time, I also came to realize that most environmental problems that can impact wildlife species have, at their base, a social component.

It was from this realization that I came to appreciate the benefits and difficulties of integrating collaborative processes into existing natural resource management frameworks. I decided that I wanted to learn as much as possible about the collaborative process in a natural resource context and I had developed a desire to expand my research repertoire to include social science methodology. Thus, I began my doctoral program. While my dissertation research does not directly involve wildlife, it is my strongly held belief that wildlife can benefit directly and indirectly from forests that are managed with an eye toward resiliency and sustainability.

During the course of this study, I have been encouraged by the willingness of community stakeholders and agency personnel to put aside their differences in order to seek a common goal. I have also been dismayed by those stakeholders, both from the community and within the agency, whose positions are so deeply engrained into their psyche that they are unwilling to consider the possibility of any actions that do not run parallel to their beliefs. Agency personnel have the education and expertise to make decisions, but many are open to inviting community members into their management processes far beyond the mandated public involvement process. I respect that. Most recently, I have been employed by the United State Geologic Survey (USGS) to conduct social science research that provides federal natural resource agencies with impartial

and objective information to benefit natural resource management goals. Given this experience and my background, it is sometimes easier for me to understand the issues from an agency, rather than certain community stakeholder's perspective. I've never lived in a rural forested area nor have I a multi-generational attachment to a single place. Regardless, it is my intention, challenging as it may be at times, to remain as objective as possible while conducting this and any future research.

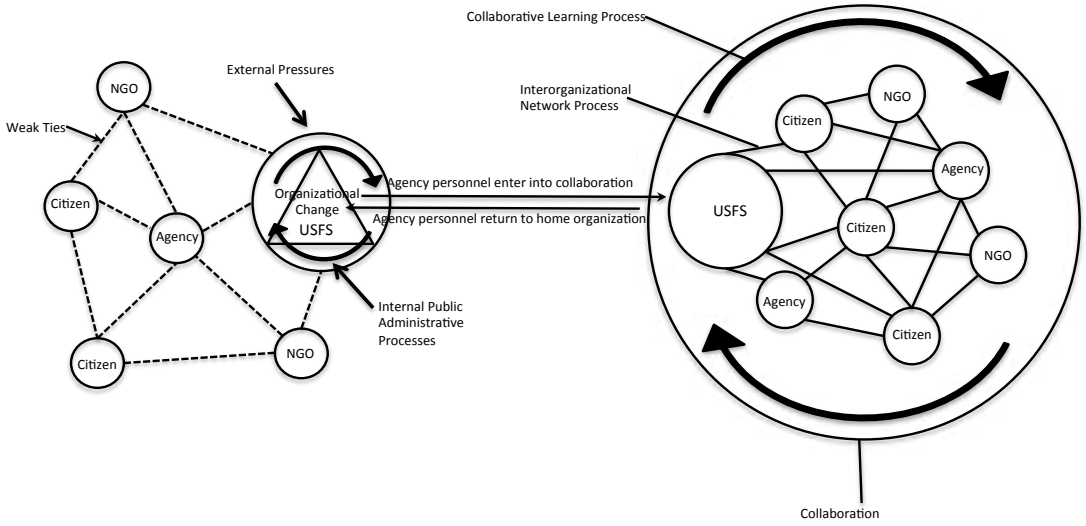

Figure 1 Conceptualization of Organizational Change Resulting from Engagement in Collaborative Efforts

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CHAPTER TWO: ORGANIZATIONAL CHANGE IN THE UNITED STATE FOREST SERVICE: CONTINUOUS CHANGE AND THE ROLE OF THE INDIVIDUAL

2.1 Introduction

Organizations must be able to adapt continuously to changes in the environment in which they are embedded if they are to survive (Tsoukas and Chia 2002). This is particularly the case in public forest management in the United States as reflected by evolving expectations concerning management priorities and increasing demands for the public to be involved with decision-making (Bengston 1994; Cortner and Moote 1999). This change in the external environment presents significant challenges to the traditional management regime of the United States Forest Service (USFS). Once known as a model of bureaucratic efficiency, economy, and expertise, it is now incumbent upon the agency to operate as one of responsiveness and inclusion (Tipple and Wellman 1991).

A new way of doing business has emerged for the USFS in the western United States as the agency joins community members in collaborative governance arrangements created to address forest restoration issues. USFS field-level personnel and the stakeholders involved in collaboration expend valuable and limited resources, to obtain collaborative outcomes such as building successful working relationships, sharing information and resources, developing trust between the agency and community members, improving communications, and implementing on-the-ground restoration projects (Bentrup 2001; Carr, Selin, and Schuett 1998; Gray 1989; Gray 1985; Leach and Sabatier 2005; Schuett, Selin, and Carr 2001; Selin, Schuett, and Carr 1997; USDA 2009). While it stands to reason that sustaining collaborative outcomes over time would be desirable and prudent, questions remain about the type, magnitude, and scale of changes that must occur within the organization. Organizational change literature examines the

durability of these changes through the concept of "initiative decay." Decay describes the process whereby gains from temporary changes in the organization can be lost when new practices are abandoned (Buchanan et al. 1999; Doyle et al. 2000) because funding for a project comes to an end, staff move on to new projects, or management's attention and priorities shift. To avoid decay, changes must become a part of the very fabric of the organization (Buchanan et al. 2005). Organizational change scholars also argue that in order for changes to become sustainable, individuals within the organization must alter their day-to-day activities and beliefs (Buchanan et al. 2005; Danter et al. 2000; Fernandez and Rainey 2006; Tsoukas and Chia 2002).

Organizational change is important, not only in the role it plays in sustaining collaborative outcomes, but implications of change can affect various actors within the organization as well (Huber et al. 1993; Weick and Quinn 1999). As collaborative efforts become increasingly involved in forest management activities, staff members and managers are asked to step out of familiar roles and into collaborative positions that are unfamiliar and for which they often have little training. Staff members and managers are affected by organizational change as it often impacts workloads, stress levels, the working environment, and social relationships (Huber et al. 1993).

Empirical studies demonstrate that collaborative approaches have been adopted by the USFS (Selin, Schuett, and Carr 1997). However, the scope and scale of organizational change within the USFS as it copes with the expanding involvement of community collaboration efforts has been understudied. Especially lacking is empirical research into the prominence of the individual in affecting organizational change within the USFS. I argue here, that understanding the organizational changes that are, or are not, taking place at the level of individual USFS personnel will afford the agency a window into its own challenges and opportunities pertaining

to collaboration, and can produce a deeper understanding of organizational resiliency within the context of the broader political-organizational environment as it integrates collaborative processes.

This chapter contributes to theoretical and practical knowledge of organizational change in USFS as it integrates collaboration into its decision-making processes and provides a window into the everyday workings of USFS personnel that managers can use to help staff, and therefore the organization, transition into collaborative entities. This chapter begins with an overview of organizational change theory. A description of the methods used in this analysis and presentation of the findings follow. This chapter concludes with a discussion of key theoretical and management implications of these findings and recommendations for future research that could further the knowledge of organizational change in the USFS.

2.2 Background

Understanding precisely how and why an organization changes has been an on-going quest for scholars of a varying array of disciplines (Van De Ven and Poole 1995). Indeed, Van de Ven and Poole (1995) note that over one million articles addressing organizational change can be found within the organizational theory literature and span disciplines such as "psychology, sociology, education, business, and economics, biology, medicine, meteorology, and geography" (p. 512-13) [1].

Organizational change is herein defined generally as, the "reweaving of actors' webs of beliefs and habits of action to accommodate new experiences obtained through interactions" (Tsoukas and Chia 2002, p. 567) and specifically as a change in the way an organization

[1] The author wishes to note that Van de Ven and Poole (1995) did not identify articles relating to organizational change within natural resource management disciplines among those collected for their comprehensive review. This corresponds with the author's literature review and the assumption is made that very few such articles exist.

functions, the form it takes, who its members and leaders are, or how it allocates its resources (Huber et al. 1993). The depth and breadth of conceptual models that aim to describe organizational change is vast. I present here some of the more enduring frameworks that have been developed to describe and understand organizational change for the purposes of context and edification. However, the reader is advised that organizational change is a complex process (Van de Van & Poole, 1995) and any description I offer here will invariably present only a cursory account. For more comprehensive reviews, I refer the reader to Pettigrew (1985) and Wilson (1992).

Despite its broad application, much of the historical literature on organizational change and development is predicated on a static change model consisting of three discrete actions - unfreezing, change, and refreezing - and usually occurs when the organization fails to adapt and faces inadequacies in meeting its central mission (Lewin 1951). Weick & Quinn (1999) highlight this point in their seminal work, quoting Hendry (1996),

> "Scratch any account of creating and managing change and the idea that change is a three-stage process which necessarily begins with a process of unfreezing will not be far below the surface. Indeed it has been said that the whole theory of change is reducible to this one idea of Kurt Lewin's." (p. 624).

The "Big Three" model of change, as an alternative to Lewin's presumed axiom (Kanter, Stein, and Jick 1992), still closely resembles the discrete actions found in Lewin's model and describes the *outcomes* of organizational change but does not facilitate an understanding of the change process itself (Chia 1999). Kanter, Stein, and Jick (1992) present a typology of change identifying three types of organizational change concisely described by Chia (1999) as,

> "macroevolutionary change involving a change in identity as it relates to its external environment; microevolutionary changes in which the internal *coordinative* mechanisms are adjusted to take into account growth, ageing, and progress; and finally, political changes involving shifts in *control* and vested interests" (p. 211).

Chia goes on to explain that Kanter, Stein, and Jick (1992) identify five drivers or "motors" of organizational change: "grassroot innovations; crisis or galvanizing events; strategic decisions; individual implementers and change champions; and action vehicles" (p.211). Similar to Lewin's change model this model provides a description of "effects and sources" (Chia 1999).

Attempts to move beyond the conventional models of change and to describe a processual model of organizational transformation have been made by numerous scholars of organizational change and management (Dawson 1996; Feldman 2000; Orlikowski 1996; Van De Ven 1987; Weick 1979). Van de Van and Poole (1995) attempt to corral the multitude of existing frameworks into a single typology from which, they argue, "all specific theories of organizational change and development can be built" (p. 511). They develop four basic process theories of change that Weick and Quinn (1999) cite as each being "characterized by a different event sequence and generative mechanism" (p. 364). Van de Van and Poole (1995) partition organizational change into: life cycle; teleological theories; dialectical theories; and evolutionary theories. Life cycle theories assume that "change is imminent" and is the dominant explanation for change in the management literature. The teleological theory can be found in organizational entities that change with the purpose of achieving a certain goal or a desired end state. Dialectical theory as described by Van de Van and Poole (1995) assumes that the organizational entity is embedded in a world of pluralistic conflict. Finally, evolutionary theory, similar to ecological evolution, is expressed when organizational change manifests from the scarcity of resources and the environment in which the organization resides selects those entities that are best suited to survive in the existing environmental niche.

Static and processual models are not the only frameworks for understanding change within an organization. Weick and Quinn (1999) argue that the tempo at which organizational

change occurs can also provide a meaningful partition. Two such tempos are episodic and continuous change. Episodic change occurs in response to a divergence from the organizations "equilibrium conditions" which presumably rests with the organizations core structure. Divergence generally occurs when an organization perceives that environmental demands run counter to its own core structure. Episodic change occurs over discrete time periods and is often driven by events that are external to the organization, although internal events can act as drivers of change as well. A change in technology can be one such external event while internally driven events such as a change in key personnel could result in an episodic organizational change per Weick and Quinn's (1999) analysis. Episodic change is Lewinian and assumes the principal of replacement. That is to say, that a primary change agent or mover defines what currently exists and sequentially defines and implements its replacement in response to a particular trigger. Episodic change is often slow, intentional, and formalized through explicit procedures.

The aforementioned frameworks may be appropriate for reviewing organizational change that is planned, but what of unplanned change? Weick and Quinn's (1999) characterization of the continuous change framework is an attempt to capture the dynamic nature of the change process and aims to describe cumulative organizational changes that are evolutionary and ongoing and follow Orkliwoski's (1996) "situated change model". The continuous change model is differentiated from other processual models in that it relies on the idea that "small continuous adjustments, created simultaneously across units, can cumulate and create substantial change" (p. 375). Indeed, organization change from a continuous perspective accentuates the small, incremental, interminable actions that can culminate into substantial organizational transformation even when change is not intentional or defined a priori (Orlikwoski 1996). Continuous change can be thought of as unplanned change that is carried out in a series of on-

going improvisations comprised of "accommodations, adaptations, and alterations" that, over time, create sufficient modifications in the organization that, in turn, lead to more variations. No specific beginning or end point is observable in this process. Could the constant sensing and learning by individuals, as they respond to a changing environment, lead to changes in their attitudes and behaviors?

Further strengthening the argument for change models that go beyond the concepts of stasis and equilibrium, Chia (1999) argues for organizational change frameworks that take into account the "movement" of change stating that typologies, hierarchies, and taxonomies that seek to classify change are reductionist and miss the "intrinsically changing, fluxing and transforming social reality" (p.210). Chia argues for a "rhizomic" model of change stating that earlier change models, while making an attempt to describe temporal and processual aspects of change are "not sufficiently 'process-based' to adequately capture the dynamics of change" (p. 209). While viewing change through this metaphysical lens is an interesting and worthwhile conceptual exercise, it does present great challenges to the researcher who wishes to study such change. How does one identify, either qualitatively or quantitatively, empirical variables that adequately describe continuous or rhizomic change? It is tempting to study only those variables that are easily identifiable, such as those mandated by managers, in order to correct a perceived short-coming or to reach a certain goal. These types of changes, however, may point to changes within the organizational structure, but are generally representative of episodic change not continuous change (Walker, Achilles, and Bernerth 2007; Weick and Quinn 1999). Such a synoptic approach could lead one to miss the subtle and nuanced changes that go on within the interior of the organization but never quite reach the status of formally recognized change (Tsoukas and Chia 2002). One method of inquiry would be to view change from a "micro-process" level, that

is, to examine organizational change not from a top-down, big picture view, but from a personal and individual analysis of the everyday workings for those who are affecting the change within the organization. This echoes the premise put forth by Oilikowski (1996) who sees organizational change as a process that is not organized from the top, rather it is,

> "grounded in the ongoing practices of organizational actors, and [emerging] out of their (tacit and not so tacit) accommodations to and experiments with the everyday contingencies, breakdowns, exceptions, opportunities, and unintended consequences that they encounter" (p. 65).

I argue here that the metamorphic process of continuous change relies on the actions of the individuals who initiate and champion change.

Studying change from an individual perspective provides one more conceptual "lens" from which organizational change can be analyzed. Indeed, change can occur, separately or concurrently, at many levels including individual, managerial, or cultural (Buchanan et al. 2005; Weick and Quinn 1999). Individual-level changes, such as changes in behavior and attitudes, however, may be of particular importance as some organizational change literature argues that individuals within the organization must alter their day-to-day activities and beliefs in order for changes to become sustainable (Buchanan et al. 2005; Danter et al. 2000; Fernandez and Rainey 2006; Tsoukas and Chia 2002;). The importance of the individual in affecting and maintaining organizational transformation underscores the need to support these key contributors of change within their organizations (Kanter 1991; Frohman 1997). Much of the previous research that follows this line of inquiry is situated within the business community; might individuals be contributing to organizational change within public administration as well?

The rise of community collaborative networks challenges public agencies such as the USFS to adjust their former way of doing business to incorporate collaboratively developed projects and plans, starting with changes individual personnel make in their work habits to

accommodate collaboration. The overarching research objective of this study is to examine the extent to which organizational changes are made by the USFS in response to its involvement with collaborative efforts. In this chapter, I assess changes made by individual USFS staff members and their roles in affecting organizational-level changes as the agency responds to community collaboration by asking the following three questions:

1) What factors indicate change in individual behaviors or attitudes that are contributing to organizational change?
2) Is there a difference in the types of changes being made by individuals occupying different positions within the organizational hierarchy?
3) To what extent do the changes being made outlast the tenure of the agent making the change?

This chapter represents a portion of a larger qualitative social science research study examining organizational change in the USFS as it participates in collaborative processes. Because of the lack of empirical research on individual level change in this context, this research takes a modified grounded theory approach to uncover the types, magnitude, and scale of organizational change in order to inform future research. As such, these questions are a sub-set of research questions that comprised the larger study. It is important to note that this study does not involve *a priori* hypothesis-testing. Rather, the research questions serve as sensitizing concepts (Bowen 2006) to focus and guide the inquiry through the vast expanse of organizational change research.

2.3 Methods

2.3.1 Case Study Approach

Because of a relative scarcity of existing studies documenting the organizational changes and adaptations made by any federal natural resource land management agency as a result of their engagement with community collaboration, this study employs qualitative research methods applied to a sampling of case studies. As Yin (2009) notes, a case study approach is useful when: 1) research questions seek to answer the "how" and "why" of a situation; 2) the researcher has little control over behavioral events; and 3) the focus of the study is a contemporary social phenomena.

Three case studies encompassing the USFS and community collaborative efforts were selected. I developed several criteria for selecting which case studies would be best suited for this investigation. From a research design perspective, I chose three case studies from which I could draw a compare and contrast analytic approach. The three case studies are situated in three separate administrative regions of the USFS. By selecting different regions of the USFS, I was interested in examining if organizational changes were common across regions or if there were perhaps differences in agency culture relating to community-based collaboration across regions. The cases also vary in time since inception and in formality of operational structure. I chose cases with differing times since inception to explore the types of organizational change that might occur at different phases of collaboration. The three collaborative groups are similar in purpose, however; with each group working with their respective national forests on forest restoration issues. A caveat of note: this study focuses only on the ranger district and supervisor office levels of the USFS in each case study. While changes may be occurring at higher levels of the USFS, this line of inquiry was beyond the scope of this study. I suggest however, that

examining these same research questions at different levels within the bureaucratic hierarchy would be an interesting line of inquiry for future studies.

From a practicality stance, it was imperative that the collaborative group and the corresponding national forest be amenable to the idea of being studied. It was also important to me that the cases I chose had not been intensively studied in the past as to add uniqueness to my study and to not further burden any existing participant-researcher relationships. I was working with a limited travel budget as well, therefore, all case studies needed to be easily and inexpensively accessible by air or car with relatively economical accommodations nearby. To protect the anonymity of interviewees, I use pseudonyms for the case studies and the national forests throughout the dissertation. The three case studies that were chosen as units of analysis were: 1) The Northmont Forest Restoration Coalition (NFRC) - USFS Region 6; 2) The Lone Mountain Forest Restoration Collaborative (LMFRC) -USFS Region 4; and 3) The Meadow Valley Forest Collaborative (MVFC) -USFS Region 2 (Table 1).

The NFRC collaborates with the Bear Valley National Forest (Bear Valley) in the northwest region of the United States and is the oldest collaborative effort among the three case studies. The community in which the ranger district and supervisor offices under study in this research reside has a population of just below 5000 people with approximately 92% of the population identifying as white. The median annual income is approximately $33,000, well below the state median income of approximately $58,500 (United States Census Bureau 2010). Most of the current economy of the area relies on the timber, agriculture and mining industries, along with employment at state and national government offices. Some cattle, horse, and hay production can also be found in the area. The community has a long history of timber production,

which is still active today and vital to the community's economy. The most enduring timber operation in the area belongs to one family in particular and was established in the 1950s.

As elsewhere, the timber industry in the area has undergone cycles of feast and famine, but has been an important source of employment for the area throughout the years. Some of the greatest challenges for national forests and resource-dependent communities came during the 1990's and the "timber wars" that followed on the heels of the listing of the northern spotted owl (*Strix occidentalis caurina*) as a federally threatened species in 1990. In 1994, the Northwest Forest Plan provided protections for the spotted owl and other species inhabiting late-successional forests in northwest regions of the United States (ROD 1994). These new forest policies combined with the globalization of the wood products market and changes in timber availability provided a hotbed from which conflict between the timber industry and environmental groups ensued. Disputes over forest management between the two factions often resulted in gridlock and litigation, making meeting forest management objectives nearly impossible for the USFS, and resulting in consequences for forest ecosystems and local communities. Communities that were dependent on the timber industry experienced harsh economic downturns. In 1989 the Bear Valley produced 128 million board feet of timber. For the period from 1994 to 1998, timber production on the Bear Valley averaged 32.5 million board feet (Power 2000). In 2000, a nearby mill closed further damaging the economic state of the community and a local four-generation lumber mill, which remains active today, was struggling to keep its doors open for business. During this same time period, the Bear Valley, caught squarely in the middle of these competing interests, was faced with larger, more frequent wildfires, as was most of the Western United States.

Local stakeholder groups began to talk with one another and the Bear Valley, in an attempt to find ways in which economic and conservation goals could be met. In 2002, the NFRC was formed for the purposes of improving forest health through restoration practices, protecting the community from wildfire, and creating community economic viability. The NFRC represents the longest-running collaboration of my case studies. At the time of this study, the NFRC consisted predominately of representatives from the timber industry and conservation interests. In 2003, the NFRC and the Bear Valley formalized their working relationship by signing a Memorandum of Understanding (MOU). In 2006, WFRC developed a collaborative process protocol, herein referred to as the "CPP" (a pseudonym) that further describes their process for working collaboratively with the forest. While the wounds that came out of the "timber wars" are still observable today, the NFRC and the Bear Valley have collaborated on over 25 forest management projects to date, ranging from stewardship contracting to forest planning.

The LMFRC was formed in July 2006 and collaborates with the River Point National Forest (River Point) in the intermountain west region of the United States; it represents a "middle-aged" case study. The community in which the USFS offices studied here reside has a population of just over 3000 with 96.5% of the population identifying a white. The annual median income for the area is approximately $26,000 while the median annual income for the state is approximately $47,000 (United States Census Bureau 2010). The area's current economy is based chiefly on ranching with some minor logging and mining operations. Until the mid-1990's, the area was home to several, small, locally-owned sawmills, log home manufactures, post-and-pole operations, and commercial firewood businesses which provided employment for the community's citizens. Similar in history to the Bear Valley, The River Point and the local

community were not bypassed by the conflicts created by shifting national forest polices. Timber harvests plummeted and the community experienced a downturn in its economy. Mill closures in the late 1980s and early 1990s cost the local economy 250 jobs. Today, the remaining forest product businesses lack the capacity to process enough timber to make a large contribution to the area's economy. Recreation and tourism are now the majority contributors to the area's financial resources.

With declining timber production the River Point saw increasing forest health and wildfire issue. Although the issues have changed in recent years, many of the old conflicts persevered. Prior to the formation of the LMFRC, the River Point was mired in gridlock, facing appeals and litigation over forest management issues from protecting old-grown stands to firewood sales. The group facilitator and a non-agency participant who I interviewed for this study told the following story of how the LMFRC came to be. In 2006, environmentalists and the USFS were in disagreement over the issues of how much designated old-growth needed to be protected. A lack of understanding between the two factions was rooted in disagreements over the quality of old-growth maps that were created in 1985. The USFS and interested participants conducted field trips into old-growth ponderosa pine and Douglas fir stands and it became apparent that forest units designated as old growth in 1985 didn't meet current old growth criteria and some stands that met the criteria were unprotected. It was out of the willingness on the part of the USFS to consider ground-truthing old growth stands that the beginnings of a collaborative relationship was forged.

Today the LMFRC is a self-governed group comprised of landowners, timber industry representatives, retired USFS personnel, the environmental community, non-federal government entities, and community leaders. The LMFRC, through a MOU between the River Point and the

collaborative group, works to restore the forest to a condition that mimics the historic range of variability in terms of stand structure, composition, and disturbance regimes. At the time of this research was conducted, the group had completed one major restoration project with two more slated as future activities.

The MVFC is the most newly formed of the collaborative efforts studied, with inauguration in the fall of 2010. The MVFC works collaboratively with the Sunset Ridge National Forest (Sunset) in the rocky mountain region of the United States. The community from which I conducted this research has a population of approximately 1,700 people with a mixed-race composition of approximately 53% of the population identifying as white and 41% identifying as Hispanic. The median annual income for the area is approximately $40,000 with the overall median annual income for the state is just under $59,000 (United States Census Bureau 2010).

Contrary to the first two case studies, the collaborative effort underway here was born out of a proactive desire to address forest issues rather than a reactive need to resolve conflict. Because the forest is geographically situated far from the area of of the "timber wars" and the habitat in the forest is unsuitable to the northern spotted owl, the area does not bear the scars of the long-standing conflict born of that controversy. That isn't to say, however, that logging has not been part of the area's story. Historically, the community in which the district ranger office of the USFS, and to some degree the community in which the supervisor's office reside, were lumbering communities. The area experienced intensive, albeit short-lived, logging between 1890 and 1945. By the 1970s, a dwindling supply of large-diameter trees spelled the end of major logging operations in the area. Today, the forest provides recreational and aesthetic

benefits to the community's citizens, many of who have taken an interest in forest health issues on the Sunset.

In the late 1990's the Sunset enlisted the assistance of the scientific community to obtain a better understanding of general ecological conditions on the forest in anticipation of an upcoming revision to the forest plan. The forest identified a specific need to understand the mixed-conifer forest type as they had received little research attention. The MVFC was formed following a stakeholder-based workshop that examined the "state of the science" hosted by the local ranger district of the Sunset and a "bridging" organization housed at a public university. This organization serves to advance the knowledge and practice of forest restoration and wildfire hazard reduction. Prior to the formation of the MVFC, most stakeholder processes in the Sunset were focused on ponderosa pine management. An interest in and need for greater stakeholder involvement in mixed conifer forest management was identified from the workshop and subsequent stakeholder meetings. The MVFC was established to include stakeholders' perspectives and to collaboratively develop science-based forest management priorities. One of the group's early successes was the award of a long-term stewardship contract in June of 2012. The contract marries collaborative forest health with a renewable energy business model. The model involves building a 5-megawatt electrical power plant that would use wood chips made from small diameter trees thinned from the forest.

2.3.2 Data Collection

Data were collected between March and August 2012 using qualitative social science research methods encompassing semi-structured individual interviews, participant observation of group meetings, and compilation and review of meeting minutes and reports. I chose to conduct interviews because I wanted to develop a nuanced and rich storyline for each case study.

Interviews are often chosen by researchers, when a direct line of questioning is desired and are well-suited for an exploratory study such as this. Inquiry of this sort can lead to an in-depth evaluation of details and can provide an historical context to the study that may not be acquired from other methods (Creswell 2009). I chose a semi-structured format rather than a structured format for the interviews because I wanted the flexibility to follow especially interesting avenues as they emerged during our conversations (Smith 1995). The interview guide was organized around four question categories:

1) Interviewee's background: What is your position or role within your organization? Please describe your involvement with (group's name).
2) Organizational change: Please describe any changes or adaptations that have been made in your organization in response to (Group's name)'s collaborative efforts. These may be changes that you have made or changes that have been made by others within the organization.
3) Enablers and hinderers of organizational change: What factors do you think allowed for the changes you described to occur? Please describe factors that act as barriers to change.
4) Agency as enabler of change: What steps could your organization take to facilitate change and/or incorporate ideas, plans, and programs developed by collaborative efforts in the future?

Although my study focuses on changes within the USFS, I chose to interview both USFS personnel and collaborative group members. I did so because I wanted to investigate a wide perspective on organizational change. Often when someone is immersed in their day-to-day job functions, they may not realize how things have changed and I reasoned that an outside perspective would add depth to the study. Twenty-six semi-structured, open-ended interviews

yielded approximately 18 hours and 35 minutes of audio recordings (Table 2). Of the twenty-six interviews 16 were with agency personnel and 10 were with non-agency personnel. I chose interview respondents by both purposive and network sampling (Granovetter 1976). I composed a list of key agency personnel and collaborative group members and sent an email to each describing the study and asking if they would be willing to participate. Additionally, at the end of each interview, I asked interviewees if they could suggest other potential interviewees. I developed my interview questions directly from the research questions. I asked respondents questions about changes or adaptation they made or had observed in the USFS in response their respective collaborative efforts (corresponds to research question one and three) and their roles within their home organizational and within the collaborative effort (corresponds to research question two). Additional interview questions were asked, the results of which are reported elsewhere.

In all three case studies, I timed my field visits to coincide with collaborative group meetings, which I attended. In addition to the group meetings, I attended a joint meeting of the NFRC and the USFS during my visit to Colville, Washington. I did not record meetings; rather I took extensive observational notes and recorded my thoughts and impressions in a personal journal after the meetings. The journal facilitated reflexivity throughout the research process (Ortilipp 2008). Interview notes were transcribed verbatim into a text format for content analysis and coding. Ground-truthing of interview data was accomplished by sending transcripts to each respective interviewee. Changes were made to the final transcripts based on interviewee comments and suggestions.

Written reports created by the collaborative groups, meeting minutes, and memoranda of understanding (MOU) for the NFRC and the LMFRC case studies were also collected. At the

time data were gathered for this study, the MVFC did not have a signed MOU with the USFS. The intent of adding these documents to the analysis was to enhance the reliability of results by data triangulation (Golafshani 2003). To further understand my case studies and to aid in my data interpretation I became immersed within each community in which the collaborative efforts reside. I spent a total of ten consecutive days in each of the communities. During this time, I visited restaurants, grocery stores, parks, shops, and other venues where local people gathered. I engaged as many people as appropriate in informal conversations and observed social cues and constructs. At the end of each day, I recorded my impressions in my personal journal. This process has its obvious limitations in that I did not spend enough time in each community to develop a comprehensive and accurate picture nor can my singular observations be representative of the community at large. However, these observations did aid my investigation by providing context to my case studies.

2.3.3 Data Coding and Analysis

Content analysis via coding and constant comparison was conducted for 24 interviews and all generated and collected documentation employing a modified grounded theory approach (Strauss and Corbin 1990). Two interviews were dropped from the analysis because of lack of pertinent and useful information. In grounded theory, the researcher attempts to identify themes that emerge from the data within the context of the respondents point-of-view rather than "testing" a specific idea as in hypothesis-driven research. It is an interpretive, iterative process that is particularly well-suited to exploratory inquiry into a new research frontier. The coding procedure that I used followed the traditional coding process of grounded theory which includes the generation of categories of topics or concepts (open coding), linking codes to one another in order to produce themes (axial coding), and developing a story line from the interconnects of

these categories (Creswell 2009; Strauss and Corbin 1990). I modified the coding process as described by grounded theory in that I also developed *a priori* codes based on the sensitizing concepts derived from the literature that gave a general sense of reference and guidance and structurally-driven codes that were derived from my research goals and questions (DeCuir-Gunby, Marshall, and McCulloch 2011). Examples of codes based on sensitizing concepts included words derived from the collaboration literature such as capacity and conflict. Words like change or adaptation are examples of structurally-driven codes. The initial open coding process yielded 144 codes. Superfluous codes such as "sell-out" were eliminated because the same concept or quotation was also included in the code "compromise". The remaining codes were grouped and then linked together through an axial coding process to form themes and sub-themes about organizational change at the individual level.

2.4 Findings

This section presents the dominant storylines, represented as themes and subthemes, that were developed from the data. Because the story is best told by those affected by and effecting organizational change, selected quotations from interviewees are presented. In some cases, quotations were edited for clarity. The analysis revealed that organizational changes are occurring within the case studies primarily by individuals and in an incremental fashion. Of the 24 subjects interviewed, evidence of individual, incremental changes came from 17 interviewees. One non-governmental stakeholder from the collaborative groups did provide insightful information. Meeting minutes provided some conceptual and general supporting evidence of the themes identified here but did not yield direct quotations. As such, only data gleaned from the interviews are presented here.

Three dominant themes relating to individual, incremental changes emerged from the data, two of which are broken into subthemes. The first theme, comprised of observations made by USFS personnel, indicated that they have experienced administrative changes including an increase in assignments and tasks, an increase in data and information sharing, and a change in hiring requirements for new employees. The second theme focuses on changes in the way individuals perceive their role in decision-making, from expert to collaborator, and in their contributions to meeting the procedural requirements pursuant to the National Environmental Policy Act (NEPA). The role of leaders and the importance of leadership support in making sustainable changes relating to collaboration emerged as the third noteworthy theme. I present the total number of USFS personal interviewees (expressed as *n*) and the resulting percent of USFS personnel interviewees (both active and retired) that identified incremental changes in activities, behaviors, and attitudes in Table 3.

The reader is reminded to heed Chia's (1999) caution that, although these findings are categorized for reporting purposes, organizational change, as discussed here, is a dynamic and fluid process and each of the following themes and subthemes should be considered as a limited window within the overall organizational change process.

2.4.1 Theme One: Administrative Changes

As defined here administrative actions are the everyday behaviors of individuals through which a bureaucracy carries out its work. Four categories of behaviors emerged from the data: (1) increases in assignments and tasks, (2) data and information sharing, and (3) changes to hiring requirements of USFS employees. The prevalence of administrative changes across all case studies is presented in Table 4.

2.4.1.1 Subtheme One: Increases in assignments and tasks

This subtheme depicts an increase in the assignments and tasks that USFS employees are asked to perform as a result of their involvement with community collaboration groups. Interviewees sometimes identified the specific assignment or task that had increased and these are discussed in further subthemes, but they moreover described their general perception of an increase in their workloads. This finding was consistent across all three case studies examined. The following quote from a USFS staff member from the NFRC is illustrative of this finding.

> "What working with the NFRC has done, is added to the workload of the current employee. We haven't hired additional people to cover the workload that comes with the additional effort."

The increase in workload was not only expressed by resource specialists as is evidenced by the following quote from a line officer from the LMFRC.

> "After every meeting I have tasks, additional tasks that come about so I know that [the collaborative] involvement always is going to require more work."

The following quote from a USFS staff member from the MVFC notes that not only does he have an increase in his workload, but the nature of the work may also be different.

> "The collaborative definitely has added to my overall workload. It's also a different kind of work. If we hadn't worked with the group, we might have ended up an appeal on that decision. So my workload may have gone from dealing with an appeal, if not litigation on a court case, to working with a group collaboratively and getting to know some different folks in the community and coming to a better understanding of forest management."

These quotes are representative if other USFS personnel who made similar comments. Of the 16 agency personnel interview, 14 specifically noted or implied an increase in workload attributed to the collaborative effort. Hence, collaboration increases the front-end pre-decisional work required for projects, but has the potential to decrease back-end post-decisional work, as well as a decrease in potential project implementation delays due to administrative appeals. Nonetheless, the front-end work puts a strain on already under-capacity USFS field offices. One

line officer from the LMFRC eloquently described his observation of the impact collaboration has had on the workload of USFS employees.

> "There are lots of pitfalls to be had with the collaboration. The biggest thing that I see is it is a lot more work and with an agency that's in financial difficulty – we're asking way more of our employees than we did in the past."

Another change in administrative behavior that results from USFS personnel's involvement with collaborative groups is a marked increased in the time spent in meetings. Three interviewees from two of the case studies noted this change; however, a review of the meeting notes provides evidence that an increase in the time USFS employees spend in meetings pertaining to collaboration is occurring across all three case studies. This finding was consistent across the hierarchy of positions within the USFS. One USFS staff member from the NFRC noted,

> "We go to lots of meetings. We are so consumed during that critical time period during the planning process where we are supposed to be reaching out to lots of different kinds of publics and we are just consumed with these meetings with these guys and it can be quite difficult."

Similarly, one line officer, also from the NFRC commented,

> "So we have coordination meetings with [collaborative group] every two months. But one of the agenda items that has been on the agenda since I've been here is, "What are our budgets as it relates to timber output and planning?" They always seem to have an opinion that it shouldn't be that way, it should be this way. And so we spend a lot of time discussing those same issues every single time rather than trying to work with what we have and what we can move forward with, and spending an hour or two hours of every meeting disagreeing with what we have to work with."

2.4.1.2 Subtheme Two: Data and Information Sharing

Five interviewees specifically identified an increase in the amount of data and information that they are require to share as part of the overall increase in assignments and tasks. USFS personnel reported that because of their involvement with collaborative groups, they spend a portion of their work time retrieving data and information that is requested by the collaborative

group. This is work time that would be spent on other tasks if they were not working with collaborative groups. This finding is consistent across all three case studies, however, it was more prevalent from the NFRC. The interviewees either noted a general increase in the sharing of data and information and occasionally mentioned the type of information shared as noted in the following quotation. One staff member from the NFRC commented:

> "I guess we just spend more time on organizing data and finding ways to present it in a way that is understandable and consistent. Not that we shouldn't be doing that anyway, but I feel like we just spend more time on it that we normally would. It slows down the process. We would probably plan quicker without having to go through that."

The increased time spent on information compilation and presentation to the collaborative is an example of the front-end work needed by collaboration. In this regard, it is a cost for being more transparent and bringing along stakeholders in order to minimize the likelihood of project implementation delays due to back-end objections. Regardless of these front-end costs, it was common for interviewees to follow a statement of increased workloads or time spent in meetings with a declaration of the benefit of collaboration by concluding "it's worth the extra effort."

2.4.1.3 Subtheme Three: Changes in Hiring Requirements

The data suggest that, in some cases, the hiring requirements for successful job candidates in the regional offices of the USFS has changed to include experience in collaboration and the personal attributes of cooperation. Five interviewees from all three case studies noted these changes, as one interviewee noted,

> "As far as hiring people, we just hired a fuels person and one of the things we looked at was, had they done collaboration before and what did it mean to them and that kind of thing."

When one USFS staff member from the LMFRC was discussing what was expected of them, in terms of knowledge of collaborative processes, she commented,

> "…we're not provided any formal training but there is definitely an expectation from my supervisor that I participate in the collaborative. It's just an accepted as part of the job;

> it's something I know we have to do. Sitting on hiring panels, that's definitely something that we look for when we are hiring people under the bench program – what is their experience with working with outside parties, that sort of thing."

One line officer from the LMFRC, who is in a position to hire others commented,

> "I think certainly we look for people with a cooperative aspect of their personality or their career. For line officers, we really like people that can bring groups together and listen. I think we're going to be interviewing for a District Ranger position here soon and that's one of our questions. Tell me what kind of collaboration you've been involved in and how did it work? What were the results?"

These findings indicate that, for the case studies examined here, the USFS is undergoing changes in the everyday administrative behaviors of its personnel as it incorporates collaboration with community groups. These data also suggest that these changes are occurring at the individual level in a constant and incremental fashion. No significant differences were found between the case studies in the overall increase in workload, however; the NFRC did report more data sharing than the other two cases. This could be owing to the storied and strained history of that case study and initial indications are that there is perhaps a lack of trust between the USFS and the collaborative group that leads to a need to verify and justify forest management actions on the part of the USFS.

2.4.2 Theme Two: Changes in Decision-Making

Interview data also suggest a change in behavior among agency personnel relating to the inclusion of social values and needs into forest management decisions. The collaborative model of decision-making is a departure from the synoptic or "expert" model under which the USFS has operated since the Progressive Era (Leifer 2007). The USFS has long held the "culture of expertise" as a core value throughout the agency's history (Hirt 1994; Kaufman 1960; Mohai and Jakes 1996). But there is ample evidence, as presented in Table 4, to suggest that within the three cases examined here, a shift in the way decisions are made is underway. The two most telling indicators of change in the decision-making model of the USFS are: (1) shifts in the role of

individual USFS employees in decision-making from expert to collaborator; and (2) alterations in the way that those employees carry out the NEPA process. Evidence of these changes was found in comments made from all three case studies and from personnel from both the District Ranger and Supervisor's offices. The prevalence of changes in decision-making across all case studies is presented in Table 4.

2.4.2.1 Subtheme 1: Role in Decision-Making: From Expert to Collaborator

Twelve interviewees indicated a notable change in behavior in how interviewees carry out their daily work and in how decisions are made. Because of the expectation of collaboration, agency personnel are now required to take into account the needs and values of the collaborative group with whom they work. These data indicate that USFS are experiencing a shift away from the traditional role of "expert" to one of being a "collaborator". A general theme that emerged from the data was that USFS employees are undergoing an "identity crisis" as they negotiate the collaborative terrain. As evidenced by the following quotations, this shift in roles has lead to frustration for some USFS personnel. One line officer from the NFRC, when describing how the agency is incorporating collaboration with community members, commented,

> "The agency is over 100 years old, but collaboration is only pretty new, relatively speaking. We still have employees internally that would suggest that "I'm the expert", how dare someone come in and tell me what the right thing to do is."

When discussing how the culture of expertise in the USFS can sometimes come in conflict with collaboration, one retired USFS employee from the LMFRC noted,

> "For the Forest Service people who felt that we don't want to, we don't have to, and we don't need to - that is the basis from that point of view. They'll say, 'I went to school and they are paying me good money to be an expert and I wish that they would get out of my way.' I have known so many people in the agency and in several other agencies – I have heard them say that many, many times. It is definitely a barrier. I don't know what percentage of the new people that are coming in to the Forest Service feel that way. There is probably some of them that still do. They figure if they go to school for eight years, they probably still feel like they probably know better than the average guy in the

> street as to how the forest ought to be managed. Hopefully that will change over time, but it only will if the culture changes."

One line officer from the MVFC goes on to further describe how the existing culture of the USFS is affecting individual personnel,

> "Because the Forest Service has this culture of 'we're the experts, don't tell us how to manage our forests' - I think that's what's probably been the biggest struggle. You go back to Gifford Pinchot's direction to his Forest Service employees, these are kind of the tenants that I believe in. And he doesn't use the word collaboration, I don't believe, but essentially, at least a couple of those bullets speak to that. And I think there for a long time, the Forest Service got away from that and they came away, yes we are the experts. And you should listen to us. Why is it that we're getting these appeals? We've gone to college. We've learned all this stuff!"

This perceived role shift is a profound one and is occurring at the individual level. Over time, these individual-level self-identity adjustments may be leading to a cultural change in how employees see their agency and how the agency portrays itself to the public.

2.4.2.2 Subtheme 2: Beyond NEPA

The second area where social values are being included in the decisions of the USFS is in how employees carry out the NEPA process. While the inclusion of social values is inherent in the NEPA process through the public comment period, these data suggest that USFS personnel are including the public, through collaboration, above and beyond the requirements of NEPA. In this subtle way, the organization is changing how it conducts this process. Nine of the 24 interviewees mentioned this change and the data were consistent across all three case studies.

One staff member from the LMFRC, in discussing how the NEPA process is carried out differently with the addition of collaboration is quoted as saying,

> "The biggest adaptation that we probably had to make is the time that it takes from project in NEPA to when that final NEPA document is signed, recognizing that with the collaborative involvement, it takes a lot longer. But we also recognize that it may take longer, but having that group on board from day one all of the way to that document getting signed, it's just been huge for us in getting all parties involved and on board with what we are doing."

This sentiment is echoed by a line officer and a staff member from the MVFC, both of whom noted that the collaborative group is involved in the NEPA process more continuously and in different ways than in the traditional public involvement process. The line officer commented,

> "We are talking about working with them earlier in the process. We have a project that is going through the NEPA analyses and the environmental groups will get with the team members, walk the ground, and go tree by tree and decide what they are going to cut. I am not kidding you."

The resulting effect of increased involvement in the NEPA process by the collaborative groups is the longer timeframe from initiation to completion. As a line officer from the NFRC comments,

> "It makes it really slow. It's already slow, but collaboration makes it even slower, and it makes it really hard for us sometimes because the NEPA process might move faster than with these collaborative groups. In the case of [the current proposed project], we are outside of the official NEPA comment period, but they are still going. These are totally open meetings, they put the minutes on the web every month, and their press releases are out all the time. I think when we do our final EIS we are going to be pretty safe in saying we can't ignore what has taken place in the community during this time. So we will actually bring that in and build that into our alternatives."

For this theme, evidence of changing attitudes and behaviors of USFS personnel is consistently found across the three cases; there is little difference between the cases. What is also evident is that the traditional agency culture and practices concerning public involvement is proving to be a barrier to the collaboration process. This tension between expert vs. collaborator is challenging fundamental professional norms and role-identities for USFS personnel. In turn, this shift in agency personnel roles and practices has affected the NEPA process.

2.4.3 Theme Three: The Changing Role of Individual Leaders and the Importance of Leadership Support

The third theme of individual-level change emphasizes leadership. Eight of the 24 interviewees reported the pivotal role that individual leaders exert in having collaboration accepted by agency staff. The prevalence of changes in leadership across all case studies is presented in Table 4.

Although there were nuances between the responses of interviewees discussing the role of leadership in relation to the acceptance of collaboration and therefore, the resulting changes in the organization, the overall sentiments did not differ widely between the three groups. Participants, both USFS personnel and non-USFS personnel, expressed that it is essential for leadership to support the agency's collaborative efforts. Without that support, they expressed, collaborative efforts would not be sustained within the agency. The following two quotes, the first by a non-agency member of the collaborative group from the MVFC and the second by a USFS staff member, also from the MVFC, are illustrative of those sentiments.

> "There have been numerous policy statements over the years by the Chief and other Forest Service leadership that collaboration is important. But that doesn't necessarily translate from policy to the ground. It's been largely a result of individuals. In my experience since the early '90s, that leadership came from the ranger and it's where it's still coming from, but also sometimes forest supervisors. I don't know how to explain this any better than just to say it seems to be individuals who are willing to take the risk and who are strong enough or see the importance of working with the community."

Line officers, USFS officials who serve in a direct line of command from the Chief and who have the delegated authority to make and execute decisions, (limited to the District Ranger or Forest Supervisor in this study), in particular are seen as the essential leaders in collaboration in each of the case studies. This is the level of authority where on-the-ground decisions and actions occur, and where collaborative groups can exert the greatest influence over management decisions and outcomes.

> "I could probably speak both from my experience here and elsewhere. Here [the district ranger] has, I think, bought into this whole collaborative thing lock, stock and barrel. I mean, he wants to do it, but he also understands it is the best way to do it. He works hard at it and he has changed the way rangers would normally do business. Not every district ranger in the Forest Service has done that. The next one who comes here – unless he was forced to – might not do what [district ranger] is doing. So a lot of what is going on is generated by key individuals at the ground level and sometimes when that ground level person changes things get put back five years."

An important observation here is that the gains made in the collaborative relationship could be lost if new leadership does not support the collaborative efforts of the outgoing leadership. Because of the high turnover rate that is indicative of the culture of the USFS this observation brings to the forefront what could be a major barrier to collaboration and to organizational change (Cheng et al. 2015; Moote and Becker 2003).

As noted in Table 3, 100% of USFS interviewees from the NFRC and the LMFRC responded that they have seen administrative changes, while only 40% of USFS interviewees from the MVFC noted similar changes. No observable difference was found between the case studies in regard to the theme of changes in decision making with 40% of the LMFRC, 43% of the NFRC, and 40% of the MVFC of USFS interviewees responding in the affirmative. The percentage of interviewees noting the importance of leadership support in collaboration was varied with 20% of the LMFRC, 43% of the NFRC, and 60% of the MVFC of USFS interviewees speaking to this importance.

2.5 Discussion

This study investigated the evidence of individual-level changes in response to USFS involvement in collaboration. I conducted semi-structured interviews with USFS participants and non-agency participants in three collaborations. Evidence of individual changes pertaining to an increase in assignments and tasks, changes in desired hiring qualifications, changes in roles from expert to collaborator, and the importance of leadership influence to make collaboration an accepted practice were presented.

2.5.1 Theoretical Implications:

As Weick and Quinn (1999) so aptly state, “Any description of organizational change is going to be dependent upon the theoretical “lens” through which the researcher chooses to view

his or her data." If one were to only view the changes at the USFS from a distance it may be tempting to conclude that organizational change in response to collaboration is not occurring. At this macro-process level of analysis one does not see the expected sequence of events that have traditionally defined organizational change. We do not see planned sweeping changes across the landscape of the agency as a whole nor do we find strict mandates coming from the top down requiring collaboration to become institutionalized. In the strictest Lewian sense, we do not see the failure of the agency to carry out its mission resulting in the unfreezing-change-refreezing change process. If, however, we chose a micro-process level of analysis we do see evidence of ongoing adjustment and adaptation (Moseley and Charnley 2014). Incremental adaptations such as increases in the amount of data that is shared, time spent in meetings, or a shift in the role of agency personnel in decision-making are observable on the individual and field office levels. These incremental changes, if they are in fact, performed frequently and continuously, may be capable of changing the structure and strategy of the organization. This corresponds to the theoretical construct of Weick and Quinn's (1999) continuous change model. Indeed, Orikowski (1996) goes so far as to suggest that these types of ongoing, incremental changes are the very essence of organizations – that organizations are in a constant process of organizing in response to changes internal and external to the organization.

Within the organizational research community, change continues to be a major topic of discussion (Repenning 2000). By providing further evidence that continuous change is occurring in large-scale organizations, this study adds to the current discourse and encourages researchers of organizational change to look for change in places that they may not have traditionally studied. This requires field-level investigations of "street-level bureaucrats" charged with day-to-day implementation of organizational missions and programs (Myers and Vorsanger 2007).

2.5.2 Management Implications:

Huber et al. (1993) notes that "the true test of managers occurs when they must manage change" (p. 245). They further note that managers are involved in change in two change-related processes: by creating change and by coping with change. The results presented here will come as no surprise to those USFS personnel involved with collaboration. As collaboration is integrated into decision-making strategies by leaders within the agency, agency staff will, no doubt, continue to find themselves in positions of having to share more information and spending more time in meetings with collaborative group members. Having these types of changes documented may give managers a more complete picture of how collaboration is impacting their staff. By understanding the day-to-day changes and challenges of agency personnel, line officers will be better able to understand the needs of their staff and will be better prepared to adapt to the changing political-organizational environment. By managing new expectations about front-end work needed to address stakeholders' demands and working through the often times onerous collaborative process, line officers could see the benefit on the back-end by not having to deal with mounting appeals and litigation.

It is interesting to note that an increase in administrative tasks was reported with equal frequency for the LMFRC and the NFRC (100% of participants), but this phenomena was reported considerably less often by interviewees from the MVFC (40% of participants). This could be owing to the fact that the MVFC is a newly formed collaborative effort with no on-the-ground collaborative projects yet planned or executed. I would anticipate that as this collaborative group begins to engage in collaboratively planned and implemented projects, more of the interviewees would note an increase in their administrative tasks.

This study also provides evidence that line officers should realize and manage their importance of their role in adapting collaboration. In the truest sense of the word, these leaders have the power to encourage or discourage collaborative activities within their areas of influence. Because collaboration is becoming an expected norm for many stakeholders in communities throughout the western United States, line officers can either inhibit or facilitate the changes that their staff makes in response to collaboration. Leadership also has a role to play in helping their staff understand and accept their new collaborative work assignments and ease the transition of specialists from "experts" to "collaborators", a transition that is oft met with a measure of resistance and frustration. By understanding the incremental adjustments made by staff, line officers can anticipate the subsequent impact on the organization and will be better able to define opportunities for and impediments to collaboration.

2.5.3 Suggestions for Future Research

While this study answered the research questions it asked, it has also generated questions that could serve as future lines of inquiry. While no apparent differences were found between the case studies in the overall increase in workload, the NFRC did report more data sharing than the other two cases. This could be owing to the fact that that particular case has a history of conflict and there is perhaps a lack of trust between the USFS and the collaborative group. A future line of inquiry could examine this relationship further to describe the relationship between indicators of collaborative progress, such as trust, and the behaviors and attitudes of USFS personnel. To further describe the impact of collaboration on the workload of USFS personnel, future longitudinal research could attempt to measure and quantify the extra time, and the resulting extra money, that individual employees spend on front-end tasks related to

collaboration. These results could be compared and contrasted with the time and money presumably saved on the back-end by avoiding appeals and litigation.

I did not get a sense of the causative factors in the varying percentage of USFS employees noting changes in the role of individual leaders and the importance of leadership in integrating collaboration into the agency between the LMFRC, the NFRC, and the MVFC (20%, 43%, and 60% respectively). My results could simply be a reflection of the small number of case studies or interviews in this study or there could be other factors that lead USFS personnel to perceive the importance of leadership differently. For example, does the amount time and number of interactions an employee has with various leaders influence this perception? Future research into the relationship of leadership turnover to agency/community collaboration and organization change could also yield findings that may have impactful on-the-ground applications. Also to note, the findings presented here are limited to the ranger district and supervisor office levels of the USFS. Might the perception of the importance of leadership support as presented here be shared with differing levels within the hierarchy of the USFS? What actions could be taken at different levels of hierarchy to reduce the impact of leadership turnover on the collaborative process?

Lastly, future research could further describe the collaboration and organizational change relationship by asking if creating a legacy or "corporate memory" of collaborative actions and agreements would keep collaborative relationships intact and reduce tension within the collaborative network that may be created by having to "reinvent the wheel" each time a new line officer or other key staff come aboard.

2.5.4 Limitations

The exploratory nature of this research, while useful in its descriptive ability, yields several limitations. Because these incremental changes were found to be occurring on all three forests involved in this study and at both the district and supervisor office levels, it is tempting to extrapolate these results to other Forest Service offices. I caution against doing so. I purposefully chose the forests examined in this study because they were known to be involved in collaborative efforts thereby "stacking the deck" as it were, in favor of finding changes relating to collaboration. Personnel who are not engaged in collaborative activities will not have the same experiences. By recruiting participants who were actively involved in collaboration, I severely limited my sample size. Ultimately, these factors reduce the generalizability of results.

While evidence of organizational change, as defined in this study, was found within the three case studies, the results were based on a limited number of informants and the study did not include the entire population of those who might have experienced the same phenomenon. The restriction of data collection to three case studies does not permit generalizations across the entire agency, but do highlight attributes of organizational change that could be tested across a large sample of USFS collaboration.

Lastly, the definition and interpretation of those variables that indicate change relies on the singular experience of one researcher. While measures were taken to assure that data collection and analysis followed closely to previous studies within the organizational change literature, the conclusions reached were undoubtedly persuaded in the direction of my personal and professional experience, or "world-view". Indeed, the vast body of literature presents many alternatives for conceptualizing organizational change and my results are predicated on only one such framework.

2.6 Conclusion

This chapter sought to answer three research questions: Is there a change in individual behaviors or attitudes that are contributing to organizational change? Is there a difference in the types of changes being made at differing levels of position within the organizational hierarchy? Are changes being made that will outlast the tenure of the agent making the change?

It is evident from the data that individual personnel are making incremental changes in their day-to-day activities as they engage in collaborative efforts that can be interpreted as continuous organizational change. USFS personnel are experiencing an increase in their workloads especially in the areas of data and information sharing and time spent in meetings. Specifically, resource specialists and planners noted a significant increase in data and information sharing while almost all interviewees mentioned their increase in time spent in meetings. Those interviewees with the authority to hire staff indicated that the qualifications they look for in staff have changed to include experience with collaboration or at a minimum, the propensity for collaboration. The way decisions are made within the USFS has also changed for these three case studies. USFS personnel affords the public, through the respective collaborative groups, a greater influence in decision-making by amending their "expertise" to include the social values and needs of the collaborative groups and by including the groups in the NEPA process in a more intensive way than by traditional public involvement standards. The data presented here also highlight the importance of leadership support for incorporating collaboration into the every-day assignments carried out by staff. Will these organizational changes outlast the tenure of the individual making the changes? A review of the data suggest that these changes can be sustained if leadership supports the changes and the knowledge, agreements, and relationships made by one individual are carried over to the next individual who

takes his or her place. As the public continues to require a deeper and broader involvement in forest management decisions, the impact of collaboration on the organizational structure and strategies will surely continue to evolve.

Table 1 Summary of characteristics of the three community-based collaborative groups included in the study

Group name (Pseudonyms)	**USFS region**	**Group mission/focus**	**Years active**	**Type of participants**	**Formality of agreements with the USFS**
Northmont Forest Restoration Coalition (NFRC)	6	Demonstrate the full potential of restoration forestry to enhance forest health, public safety, and community economic vitality.	2002 - Present	USFS agency representatives, timber industry, environmental community	Memorandum of Understanding and "Collaborative Work Plan" (a pseudonym)
Lone Mountain Forest Restoration Collaborative (LMFRC)	4	Enhance forest health and local economies in the county through stewardship contracting and restoration activities	2006 - Present	USFS and other federal agency representatives, landowners, timber industry, environmental community, community leaders, non-federal government representatives	Memorandum of Understanding
Meadow Valley Forest Collaborative (MVFC)	2	Use collaborative approaches to improve the health and long-term resilience of mixed-conifer forests and the communities located near them.	2010 - Present	USFS agency representatives, landowners, timber industry, environmental community, scientists, community leaders, elected officials, non-federal government representatives	No formal agreement at the time data were conducted

Table 2 Case studies, affiliation, and position of key informants

Case Study	Affiliation	Position
NFRC[1]	USFS[2]	Line Officer[6]
NFRC	USFS	Line Officer
NFRC	USFS	Line Officer
NFRC	USFS	Staff[7]
NFRC	USFS	Staff
NFRC	USFS	Staff
NFRC	USFS	Staff
NFRC	NGO[3]	Executive Director
NFRC	Consulting Firm	President
LMFRC[4]	USFS	Line Officer
LMFRC	USFS	Line Officer
LMFRC	USFS	Staff
LMFRC	USFS	Staff
LMFRC	Local Government	County Commissioner
LMFRC	NGO	Executive Director
LMFRC	NGO	Public Lands Director
LMFRC	Retired USFS	Citizen
MVFC[5]	USFS	Line Officer
MVFC	USFS	Line Officer
MVFC	USFS	Staff
MVFC	USFS	Staff
MVFC	USFS	Staff
MVFC	Local Business	Owner
MVFC	Retired USFS	Citizen
MVFC	Retired Academic	Citizen
MVFC	Retired USFS	Citizen

Notes. [1] = Northmont Forest Restoration Coalition, [2] = United States Forest Service, [3] = Non-governmental organization, [4] = Lone Mountain Forest Restoration Collaborative, [5] = Meadow Valley Forest Collaborative, [6] = Line officers could include District Ranger, Forest Supervisor, Deputy Forest Supervisor, Regional Forester, Deputy Regional Forester, Deputy Chief, Associate Deputy Chief, Associate Chief, or the Chief of the USFS, 7 = Staff could include resource specialists, planners, silviculturists, and administrative personnel.

Table 3 Percentage of USFS employees (including retirees) that identified individual and incremental changes across all themes and case studies.

Theme	**NFRC** *n*= 7	**LMFRC** *n*=5	**MVFC** *n*=5
Administrative changes	100	100	40
Changes in Decision-Making	43	40	40
The Changing Role of Individual Leaders and the Importance of Leadership support	43	20	60

Table 4 Prevalence of organizational changes at the level of the individual, across all themes and case studies from interview data.

	Number of interviewees mentioning changes	**Number of quotes mentioning changes**	**Number of case studies from which changes were mentioned**
Theme One: Administrative Changes - Subtheme 1: Increases in Assignments and Tasks	8	9	3
Theme One: Administrative Changes - Subtheme 2: Data and Information Sharing	5	7	3
Theme One: Administrative Changes - Subtheme 3: Hiring Requirements	5	6	3
Theme 2:Changes in Decision Making - Subtheme 1: Perception of Role in Decision-Making: From Expert to Collaborator	12	14	3
Theme 2:Changes in Decision Making - Subtheme 2: Changes in NEPA Process	9	11	3
Theme 3: Importance of Leadership Support	8	8	3

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CHAPTER THREE: ORGANIZATIONAL CHANGE IN THE UNITED STATES FOREST SERVICE: CROSSING BOUNDARIES AND THE ROLE OF THE BOUNDARY SPANNER

3.1 Introduction

For organizations to endure, they must be able to adapt to changes taking place in the external environments into which they are embedded (Tsoukas and Chia 2002). Agencies feel the pressure to work across their organizational boundaries and include community stakeholders in their decision-making processes (Bingham, Nabatchi, and O'Leary 2005; O'Leary, Gerard, and Bingham 2006). This is of particular concern in the case of public forest management in the United States. The communities in which offices of forest management agencies reside are undergoing a change in their attitudes and behaviors toward their role in decision-making due in part to increased public demands to become more involved in the management of public lands (Bengston 1994; Cortner and Moote 1999; Schultz et al. 2012).

Empirical studies have presented evidence that the United States Forest Service (USFS) is indeed traversing its organizational boundaries in response to stakeholder demands and is adopting collaborative approaches into its land management processes (Butler 2013; Cheng and Mattor 2010; Selin, Schuett, and Carr 1997). However, there is a yet unfilled need to understand the extent to which these adaptations to community collaboration involvement are or are not facilitating organizational changes in the structure and strategies of the USFS. Understanding organizational change has implications not only for the long-term survival of an organization, but the consequences of changes can affect the various actors tasked with carrying out the organization's mission and functions (Huber et al. 1993; Weick and Quinn 1999). As the communities in which USFS offices reside become increasingly involved in forest management decision-making, staff members and managers are asked to step out of familiar roles and into

collaborative positions and become a link between the community and the organization (Aldrich and Herker 1977). Such an understanding also has broader implications for examining how public organizations adapt in response to their involvement in collaborative governance arrangements.

Changes to an organization's structure are often facilitated by a rearrangement of its boundaries (Hernes and Paulsen 2003). As such, one mechanism through which we can describe and understand organizational change (or the lack of change) is through an analysis of an organization's boundaries (Aldrich and Herker 1977; Dudley and Raymer 2001; Quick 2011). The porosity of boundaries makes it possible for organizations to extend their reach beyond their own defining characteristics and into the external environment (Quick 2011; Quick and Feldman 2014). Dudley and Raymer's (2001) study of organizational change within the Veterans Health Administration (VHA) found that when actors crossed organizational boundaries such as common practices, hierarchy, time, and organizational divisions, organizational change followed. Aldrich and Herker (1977) note that innovation within, and structural changes to, the organization often result from information that is brought back to the home organization by boundary spanning personnel.

The USFS has always been immersed in the broader environment and inclusive of public commentary in their decision-making processes (Frentz, Burns, and Sperry 2000; Kaufman 1960; Voth, Fendley, and Farmer 1994); however, the degree to which the organizational structures and strategies have, or have not, changed as a result of its collaboration with non-agency actors is a topic that has been understudied. I argue here, that understanding the extent and form of boundary-crossing activities of the USFS and the mechanisms by which it engages with community collaborative efforts will afford the agency a window into its own challenges

and opportunities pertaining to collaboration. Describing and understanding the dynamic or static status of organizational boundaries will provide valuable insight into whether or not the USFS is undergoing organizational changes owing to collaboration vis-à-vis boundary-crossing activities. Empirically examining boundary changes of an organization can also advance broader theory and understanding of organizational change with respect to collaborative governance.

This chapter contributes to the empirical analysis of organizational change in the USFS as it navigates and negotiates the collaborative landscape by identifying the organizational boundaries and their attributes that are being crossed by the USFS and the community collaborative groups with which they are engaged. A description of the data and methods used in this analysis and a presentation of the results follow. This chapter concludes with a discussion of the results and their implications for theory and practice, as well as suggestions for future research.

3.2 Background

Public land management agencies in general, and the USFS specifically, are unique among bureaucracies in that they have field offices that are embedded into communities and are differentially exposed to the varying values, priorities, and needs of community stakeholders. Following economic sociology and organizational theory literature, embeddedness refers to the "embedding of a person or organization in a set of social relations or networks" (Ansell 2003). Recently, embeddedness has come to the fore in the collaborative governance literature as an important factor in shaping government structures. Embeddedness facilitates collaborative governance by enhancing "the ability of organizations to manage interpersonal or interorganizational exchanges through informal and relational mechanisms, like norms of trust and reciprocity " (Ansell 2003). Communities, in which agencies reside, are thought to provide

the trust and social capital needed to overcome polarizing and "wicked" problems (Ansell 2003). But in order for agencies to harness this benefit, they must balance the bureaucratic charge to be accountable to national standards, laws, and budgets with the community's demand to be responsive and flexible. Negotiating this tension is a significant challenge to agencies such as the USFS and requires them to reach across their organizational boundaries in order to work with the external environment (Aldrich and Herker 1977; Kettl 2006; Dudley and Raymer 2001; Langford and Hunsicker 1996; O'Flynn, Blackman, and Halligan 2014; Quick 2011; Quick and Feldman 2014).

Organizational theory literature and the literature on collaborative public administration often seek to classify boundaries. Langford and Hunsicker (1996), in the creation of their conceptual model of organizational boundaries, identify boundaries of information, perception of environment, organizational strategies, organizational structure, regulations, current vision, mission, structure, processes, and culture. In their examination of organizational change at the Veteran's Health Administration, Dudley and Raymer (2001) uncovered boundaries of practices, hierarchy, time, and organizational divisions. Kettl (2006) presents five fundamental boundaries that he argues have been historically important in shaping the behavior of American administrative institutions: mission, resources, capacity, responsibility, and accountability. While these classifications provide an overview of the different types of boundaries discussed in the literature, their abstract nature presents a problem to the researcher wishing to observe or measure boundaries. How do we know a boundary when we see one?

Boundaries are often used for purposes of separating who is in and who is out of an organization, a distinction that risks becoming obfuscated in a collaborative setting (Quick and Feldman 2014). Boundaries are also used for demarcating the policies and actions of actors

within the organization (Heracleous 2004). At its most basic function, the organizational boundaries of a bureaucracy serve to distinguish the government from the citizens it serves (Kettl 2006). The social science literature is replete with descriptions of boundaries. O'Flynn (2014) note that boundaries can be "real, imagined, or objective" (pp. 1991). Lamont and Molnar (2002) make the distinction between symbolic (e.g. cultural traditions, conceptual distinctions) and social boundaries (e.g. class, gender). Heracleous (2004) note that boundaries can exist in the mind or they can be solid and objective and can be, "social structures that are in the final analysis and in a fundamental way produced by, based on, and legitimated by ongoing social processes at the action level of analysis." (pp. 99). Regardless of how a boundary is defined, as Aldrich and Herker (1977) note, the "definition and location of a specific boundary may be possible only given a specific conceptual and empirical context" (p. 218). That is to say, that a boundary is not an isolated entity, but is influenced by the organization in which it is found and by the behaviors of agents of the organization (Aldrich and Herker 1977).

Hence, organizational boundaries are complex, dynamic entities constructed of various properties that emerge through negotiations between actors (Aldrich and Herker 1977; Heracleous 2004; O'Flynn, Blackman, and Halligan 2014; Quick and Feldman 2014). Therefore, in order to observe a boundary, one must parse out the emergent properties of a specific boundary as the unit of analysis. For example, Kettl (2006) defines "resources" as a type of boundary, but how does one wishing to investigate this boundary go about doing so? It is only through the analysis of the "parts" or attributes of the boundary that we can begin to understand where and how the boundary is drawn. If we want to study "resources" we need to look at properties such as budget, materials, or work loads. There may be other, less formal, but no less

important, attributes as well, such as skill sets (e.g. interpersonal communication) and time spent on projects.

The type of boundaries that exist and their static or dynamic nature can also be observed and examined by investigating boundary-crossing activities by individuals within the organization (O'Flynn, Blackman, and Halligan 2014). The act of crossing sectoral and organizational boundaries is indeed the very mechanism that drives many forms of collaborative relationships including partnerships, networks, and joint working arrangements (Williams 2002). Skillfully working across boundaries is key to facilitating collaborative processes (Agranoff 2006). In their writing on boundary work, Quick and Feldman (2014) note that working across boundaries is a,

> "complex process of transfer, translation, or transformation among numerous individuals and types of knowledge (Carlile 2002), frequently producing learning and change to address a problem (Ernst and Yip 2009, Levina and Vaast 2005, Star and Griesemer 1989)."

Much of the collaboration literature details the reasons for crossing boundaries including pooling resources to increase capacity, obtaining new resources, or reducing transaction costs (Cortada, Dijkstra, and Mooney 2008). Simply put, organizations must often work across boundaries in order to achieve their goals (O'Flynn, Blackman, and Halligan 2014). I argue here that boundary spanning is a function and result of agency-community collaboration. However, boundary spanning can occur without the intention of collaboration. This study focuses only on the former and not the later.

In order for organizations to traverse their boundaries, there must be a mechanism to facilitate boundary-crossing activities. Most often, these activities are carried out by people (O'Flynn, Blackman, and Halligan 2014). Those who occupy boundary roles, known as boundary spanners, are those individuals who traverse boundaries in order to provide the link between the

organization and the external environment in which the organization is embedded (Aldrich and Herker 1977; Langford and Hunsicker 1996). Most organizations have at least one boundary spanner, usually a person holding a top executive or managerial position. However, as external environmental pressures increase and the organization recognizes the need to better link its mission and activities with changes in the external environment, the number of boundary spanners within the organization tends to increase and those individuals previously uninvolved in boundary spanning activities may find themselves occupying this pivitol role (Aldrich and Herker 1977; Langford and Hunsicker 1996; Williams 2002).

The role of the boundary spanner must be differentiated from their assigned jobs. While a "job" is defined by a set of elements that are often relatively static and prescribed by the structural properties of the organization, Perrone, Zaheer, & McEvily (2003) describes a "role" as the "more emergent, dynamic and socially defined component of the very same experience" (p. 23). A role connects the individual to the organizational norms where constraints on behavior are imposed. For those performing boundary spanning roles there exists two primary functions: to retrieve information from external sources and bring this information back into the organization, and to link the existing organizational structure to the external environment by acting as a buffer between these elements and moderating behaviors, or by exerting direct influence over the external environment (Aldrich and Herker 1977). Aldrich and Herker (1977) caution that because boundary spanners are individual people, their behaviors are influenced by their own decision processes, but note that the organization necessarily expects their actions to reflect the policies of the decision makers within the organization and to maintain the "organizational image" and to enhance the organization's "social legitimacy" (p. 220-221).

Boundary spanners have the ability to influence the nature of interactions and relationships that are developed between the organization and the external elements (Williams 2002). In addition to exerting influence over the external social interactional environment, boundary spanners may also be mechanisms that facilitate structural change of their home organizations. By using their expertise and discretion to summarize and interpret information they affectively become "gatekeepers" with the power to decide what information is brought back to the organization and how the information is interpreted. Although the boundary spanning individuals may not hold a position of power within the organization their gatekeeping behaviors can lead to influential roles (Aldrich and Herker 1977).

Studying boundary-spanning activities and the mechanisms that facilitate such activities provides one more conceptual "lens" from which organizational change can analyzed. As reported in Chapter Two, organizational change is occurring within the USFS at the field level in the three case studies as evidenced by the actions of individual USFS personnel. This chapter provides another perspective for examining those changes by investigating alterations in organizational boundaries as USFS field offices engage with community-based collaborative groups. It is reasonable to assume that any organization that expends valuable resources engaging in collaboration would want to sustain collaborative outcomes. Organizational change at the individual level, such as changes in behavior and attitudes, may be of particular importance to the USFS as some organizational change literature argues that individuals within the organization must alter their day-to-day activities and beliefs in order for changes resulting from collaboration to become sustainable (Buchanan et al. 2005; Danter et al. 2000; Fernandez and Rainey 2006; Tsoukas and Chia 2002;) and underscores the need to support these key contributors of change within their organizations (Frohman 1997; Kanter 1991). As noted in the

introduction of this chapter, organizational change can occur when agency actors cross organizational boundaries (Dudley and Raymer 2001) and structural changes to the organization can be facilitated by the information that boundary spanning personnel bring back to their home organization (Aldrich and Herker 1977).

Quick and Feldman (2014) argue that understanding boundaries and boundary-crossing activities is key for public managers to enhance resiliency by developing the ability to, "use collaboration to reassemble resources and activities to continue addressing critical public problems despite disruption or adversity" (p. 674). They argue that boundaries can be seen as either barriers that reinforce separation or junctures that enable connections. Their assertion is that boundary-crossing activities create junctures, rather than barriers, and enhances resiliency.

In order to understand the extent, form, and static or dynamic nature of boundaries, I examine the attributes that make up organizational boundaries as the unit of analysis. Changes in attributes such as budget, time to project completion, and the type of information being shared with the public, contribute to organizational change and have on-the-ground implications for public investment and accountability of federal land agencies in general, and the USFS in particular. In this study, five research questions to guided the analysis:

1) Are USFS personnel crossing organizational boundaries as a result of the USFS' engagement with community collaborative groups?

If personnel are crossing organizational boundaries:

2) What type of organizational boundaries of the USFS are being crossed as a result of their engagement with community collaborative groups?
3) In what ways are USFS personnel crossing boundaries?

4) What are the factors that hinder boundary crossing as a result of the USFS' engagement with community collaboration groups?
5) What are the factors that facilitate boundary crossing as a result of the USFS' engagement with community collaborative groups?

3.3 Methods

3.3.1 Case Study Approach

Because of a relative scarcity of existing studies documenting the organizational changes and adaptations made by any federal natural resource land management agency as a result of their engagement with community collaboration, this study employs qualitative research methods applied to a sampling of case studies. As Yin (2009) notes, a case study approach is useful when: 1) research questions seek to answer the "how" and "why" of a situation; 2) the researcher has little control over behavioral events; and 3) the focus of the study is a contemporary social phenomena.

Three case studies encompassing the USFS and community collaborative efforts were selected. I developed several criteria for selecting which case studies would be best suited for this investigation. From a research design perspective, I chose three case studies from which I could draw a compare and contrast analytic approach. The three case studies are situated in three separate administrative regions of the USFS. By selecting different regions of the USFS, I was interested in examining if organizational changes were common across regions or if there were perhaps differences in agency culture relating to community-based collaboration across regions. The cases also vary in time since inception and in formality of operational structure. I chose cases with differing times since inception to explore the types of organizational change that might occur at different phases of collaboration. The three collaborative groups are similar in

purpose, however; with each group working with their respective national forests on forest restoration issues. A caveat of note: this study focuses only on the ranger district and supervisor office levels of the USFS in each case study. While changes may be occurring at higher levels of the USFS, this line of inquiry was beyond the scope of this study. I suggest however, that examining these same research questions at different levels within the bureaucratic hierarchy would be an interesting line of inquiry for future studies.

From a practicality stance, it was imperative that the collaborative group and the corresponding national forest be amenable to the idea of being studied. It was also important to me that the cases I chose had not been intensively studied in the past as to add uniqueness to my study and to not further burden any existing participant-researcher relationships. I was working with a limited travel budget as well, therefore, all case studies needed to be easily and inexpensively accessible by air or car with relatively economical accommodations nearby. To protect the anonymity of interviewees, I use pseudonyms for the case studies and the national forests throughout the dissertation. The three case studies that were chosen as units of analysis were: 1) The Northmont Forest Restoration Coalition (NFRC) - USFS Region 6; 2) The Lone Mountain Forest Restoration Collaborative (LMFRC) -USFS Region 4; and 3) The Meadow Valley Forest Collaborative (MVFC) -USFS Region 2 (Table 1).

The NFRC collaborates with the Bear Valley National Forest (Bear Valley) in the northwest region of the United States and is the oldest collaborative effort among the three case studies. The community in which the ranger district and supervisor offices under study in this research reside has a population of just below 5000 people with approximately 92% of the population identifying as white. The median annual income is approximately $33,000, well below the state median income of approximately $58,500 (United States Census Bureau 2010).

Most of the current economy of the area relies on the timber, agriculture and mining industries, along with employment at state and national government offices. Some cattle, horse, and hay production can also be found in the area. The community has a long history of timber production, which is still active today and vital to the community's economy. The most enduring timber operation in the area belongs to one family in particular and was established in the 1950s.

As elsewhere, the timber industry in the area has undergone cycles of feast and famine, but has been an important source of employment for the area throughout the years. Some of the greatest challenges for national forests and resource-dependent communities came during the 1990's and the "timber wars" that followed on the heels of the listing of the northern spotted owl (*Strix occidentalis caurina*) as a federally threatened species in 1990. In 1994, the Northwest Forest Plan provided protections for the spotted owl and other species inhabiting late-successional forests in northwest regions of the United States (ROD 1994). These new forest policies combined with the globalization of the wood products market and changes in timber availability provided a hotbed from which conflict between the timber industry and environmental groups ensued. Disputes over forest management between the two factions often resulted in gridlock and litigation, making meeting forest management objectives nearly impossible for the USFS, and resulting in consequences for forest ecosystems and local communities. Communities that were dependent on the timber industry experienced harsh economic downturns. In 1989 the Bear Valley produced 128 million board feet of timber. For the period from 1994 to 1998, timber production on the Bear Valley averaged 32.5 million board feet (Power 2000). In 2000, a nearby mill closed further damaging the economic state of the community and a local four-generation lumber mill, which remains active today, was struggling to keep its doors open for business. During this same time period, the Bear Valley, caught

squarely in the middle of these competing interests, was faced with larger, more frequent wildfires, as was most of the Western United States.

Local stakeholder groups began to talk with one another and the Bear Valley, in an attempt to find ways in which economic and conservation goals could be met. In 2002, the NFRC was formed for the purposes of improving forest health through restoration practices, protecting the community from wildfire, and creating community economic viability. the NFRC represents the longest-running collaboration of my case studies. At the time of this study, the NFRC consisted predominately of representatives from the timber industry and conservation interests. In 2003, the NFRC and the Bear Valley formalized their working relationship by signing a Memorandum of Understanding (MOU). In 2006, WFRC developed a collaborative process protocol, herein referred to as the "CPP" (a pseudonym) that further describes their process for working collaboratively with the forest. While the wounds that came out of the "timber wars" are still observable today, the NFRC and the Bear Valley have collaborated on over 25 forest management projects to date, ranging from stewardship contracting to forest planning.

The LMFRC was formed in July 2006 and collaborates with the River Point National Forest (River Point) in the intermountain west region of the United States; it represents a "middle-aged" case study. The community in which the USFS offices studied here reside has a population of just over 3000 with 96.5% of the population identifying a white. The annual median income for the area is approximately $26,000 while the median annual income for the state is approximately $47,000 (United States Census Bureau 2010). The area's current economy is based chiefly on ranching with some minor logging and mining operations. Until the mid-1990's, the area was home to several, small, locally-owned sawmills, log home manufactures,

post-and-pole operations, and commercial firewood businesses which provided employment for the community's citizens. Similar in history to the Bear Valley, The River Point and the local community were not bypassed by the conflicts created by shifting national forest polices. Timber harvests plummeted and the community experienced a downturn in its economy. Mill closures in the late 1980s and early 1990s cost the local economy 250 jobs. Today, the remaining forest product businesses lack the capacity to process enough timber to make a large contribution to the area's economy. Recreation and tourism are now the majority contributors to the area's financial resources.

With declining timber production the River Point saw increasing forest health and wildfire issue. Although the issues have changed in recent years, many of the old conflicts persevered. Prior to the formation of the LMFRC, the River Point was mired in gridlock, facing appeals and litigation over forest management issues from protecting old-grown stands to firewood sales. The group facilitator and a non-agency participant who I interviewed for this study told the following story of how the LMFRC came to be. In 2006, environmentalists and the USFS were in disagreement over the issues of how much designated old-growth needed to be protected. A lack of understanding between the two factions was rooted in disagreements over the quality of old-growth maps that were created in 1985. The USFS and interested participants conducted field trips into old-growth ponderosa pine and Douglas fir stands and it became apparent that forest units designated as old growth in 1985 didn't meet current old growth criteria and some stands that met the criteria were unprotected. It was out of the willingness on the part of the USFS to consider ground-truthing old growth stands that the beginnings of a collaborative relationship was forged.

Today the LMFRC is a self-governed group comprised of landowners, timber industry representatives, retired USFS personnel, the environmental community, non-federal government entities, and community leaders. The LMFRC, through a MOU between the River Point and the collaborative group, works to restore the forest to a condition that mimics the historic range of variability in terms of stand structure, composition, and disturbance regimes. At the time of this research was conducted, the group had completed one major restoration project with two more slated as future activities.

The MVFC is the most newly formed of the collaborative efforts studied, with inauguration in the fall of 2010. The MVFC works collaboratively with the Sunset Ridge National Forest (Sunset) in the rocky mountain region of the United States. The community from which I conducted this research has a population of approximately 1,700 people with a mixed-race composition of approximately 53% of the population identifying as white and 41% identifying as Hispanic. The median annual income for the area is approximately $40,000 with the overall median annual income for the state is just under $59,000 (United States Census Bureau 2010).

Contrary to the first two case studies, the collaborative effort underway here was born out of a proactive desire to address forest issues rather than a reactive need to resolve conflict. Because the forest is geographically situated far from the area of of the “timber wars” and the habitat in the forest is unsuitable to the northern spotted owl, the area does not bear the scars of the long-standing conflict born of that controversy. That isn’t to say, however, that logging has not been part of the area’s story. Historically, the community in which the district ranger office of the USFS, and to some degree the community in which the supervisor’s office reside, were lumbering communities. The area experienced intensive, albeit short-lived, logging between

1890 and 1945. By the 1970s, a dwindling supply of large-diameter trees spelled the end of major logging operations in the area. Today, the forest provides recreational and aesthetic benefits to the community's citizens, many of whom have taken an interest in forest health issues on the Sunset.

In the late 1990's the Sunset enlisted the assistance of the scientific community to obtain a better understanding of general ecological conditions on the forest in anticipation of an upcoming revision to the forest plan. The forest identified a specific need to understand the mixed-conifer forest type as they had received little research attention. The MVFC was formed following a stakeholder-based workshop that examined the "state of the science" hosted by the local ranger district of the Sunset and a "bridging" organization housed at a public university. This organization serves to advance the knowledge and practice of forest restoration and wildfire hazard reduction. Prior to the formation of the MVFC, most stakeholder processes in the Sunset were focused on ponderosa pine management. An interest in and need for greater stakeholder involvement in mixed conifer forest management was identified from the workshop and subsequent stakeholder meetings. The MVFC was established to include stakeholders' perspectives and to collaboratively develop science-based forest management priorities. One of the group's early successes was the award of a long-term stewardship contract in June of 2012. The contract marries collaborative forest health with a renewable energy business model. The model involves building a 5-megawatt electrical power plant that would use wood chips made from small diameter trees thinned from the forest.

3.3.2 Data Collection

Data were collected between March and August 2012 using qualitative social science research methods encompassing semi-structured individual interviews, participant observation of

group meetings, and meeting minutes and reports. I chose to conduct interviews because I wanted to develop a nuanced and rich storyline for each case study. Interviews are often chosen by researchers, when a direct line of questioning is desired and are well-suited for an exploratory study such as this. Inquiry of this sort can lead to an in-depth evaluation of details and can provide an historical context to the study that may not be acquired from other methods (Creswell 2009). I chose a semi-structured format rather than a structured format for the interviews because I wanted the flexibility to follow especially interesting avenues as they emerged during our conversations (Smith 1995). The interview guide was organized around four question categories:

1) Interviewee's background: What is your position or role within your organization? Please describe your involvement with (group's name).
2) Organizational change: Please describe any changes or adaptations that have been made in your organization in response to (Group's name)'s collaborative efforts. These may be changes that you have made or changes that have been made by others within the organization.
3) Enablers and hinderers of organizational change: What factors do you think allowed for the changes you described to occur? Please describe factors that act as barriers to change.
4) Agency as enabler of change: What steps could your organization take to facilitate change and/or incorporate ideas, plans, and programs developed by collaborative efforts in the future?

Although my study focuses on changes within the USFS, I chose to interview both USFS personnel and collaborative group members. I did so because I wanted to investigate a wide perspective on organizational change. Often when someone is immersed in their day-to-day job functions, they may not realize how things have changed and I reasoned that an outside

perspective would add depth to the study. Twenty-six semi-structured, open-ended interviews yielded approximately 18 hours and 35 minutes of audio recordings (Table 2). Of the twenty-six interviews 16 were with agency personnel and 10 were with non-agency personnel. I chose interview respondents by both purposive and network sampling (Granovetter 1976). I composed a list of key agency personnel and collaborative group members and sent an email to each describing the study and asking if they would be willing to participate. Additionally, at the end of each interview, I asked interviewees if they could suggest other potential interviewees. I developed my interview questions directly from the research questions. I asked respondents questions about changes or adaptation they made or had observed in the USFS in response their respective collaborative efforts (corresponds to research question one and three) and their roles within their home organizational and within the collaborative effort (corresponds to research question two). Additional interview questions were asked, the results of which are reported elsewhere.

In all three case studies, I timed my field visits to coincide with collaborative group meetings, which I attended. In addition to the group meetings, I attended a joint meeting of the NFRC and the USFS during my visit to Colville, Washington. I did not record meetings; rather I took extensive observational notes and recorded my thoughts and impressions in a personal journal after the meetings. The journal facilitated reflexivity throughout the research process (Ortilipp 2008). Interview notes were transcribed verbatim into a text format for content analysis and coding. Ground-truthing of interview data was accomplished by sending transcripts to each respective interviewee. Changes were made to the final transcripts based on interviewee comments and suggestions.

Written reports created by the collaborative groups, meeting minutes, and memoranda of understanding (MOU) for the NFRC and the LMFRC case studies were also collected. At the time data were gathered for this study, the MVFC did not have a signed MOU with the USFS. The intent of adding these documents to the analysis was to enhance the reliability of results by data triangulation (Golafshani 2003). To further understand my case studies and to aid in my data interpretation I became immersed within each community in which the collaborative efforts reside. I spent a total of ten consecutive days in each of the communities. During this time, I visited restaurants, grocery stores, parks, shops, and other venues where local people gathered. I engaged as many people as appropriate in informal conversations and observed social cues and constructs. At the end of each day, I recorded my impressions in my personal journal. This process has its obvious limitations in that I did not spend enough time in each community to develop a comprehensive and accurate picture nor can my singular observations be representative of the community at large. However, these observations did aid my investigation by providing context to my case studies.

3.3.3 Data Coding and Analysis

Content analysis via coding and constant comparison was conducted for 24 interviews and all generated and collected documentation employing a modified grounded theory approach (Strauss and Corbin 1990). Two interviews were dropped from the analysis because of lack of pertinent and useful information. In grounded theory, the researcher attempts to identify themes that emerge from the data within the context of the respondents point-of-view rather than "testing" a specific idea as in hypothesis-driven research. It is an interpretive, iterative process that is particularly well-suited to exploratory inquiry into a new research frontier. The coding procedure that I used followed the traditional coding process of grounded theory which includes

the generation of categories of topics or concepts (open coding), linking codes to one another in order to produce themes (axial coding), and developing a story line from the interconnects of these categories (Creswell 2009; Strauss and Corbin 1990). I modified the coding process as described by grounded theory in that I also developed *a priori* codes based on the sensitizing concepts derived from the literature that gave a general sense of reference and guidance and structurally-driven codes that were derived from my research goals and questions (DeCuir-Gunby, Marshall, and McCulloch 2011). Examples of codes based on sensitizing concepts included words derived from the collaboration literature such as capacity and conflict. Words like change or adaptation are examples of structurally-driven codes. The initial open coding process yielded 144 codes. Superfluous codes such as "sell-out" were eliminated because the same concept or quotation was also included in the code "compromise". The remaining codes were grouped and then linked together through an axial coding process identify organizational boundaries and their attributes.

3.4 Findings

This section presents the dominant storylines, represented as boundaries and their properties, which emerged from the data. Because the story is best told by those closely involved in boundary crossing, selected quotations from interviewees are presented. In some cases, quotations were edited for clarity. Evidence obtained from documentation such as meeting minutes, agreements between the USFS and the collaborative groups, and personal observation notes are also presented. The analysis revealed that organizational boundaries are being crossed within the case studies. Of the 24 subjects interviewed, evidence of boundary crossing came from 15 individuals. I use non-identifying means when presenting quotations to protect the anonymity of participants.

Evidence of the crossing of three predominant boundaries is presented here: 1) boundary of knowledge; 2) boundary of responsibility; and 3) boundary of capacity. The data suggest that the properties of information and data sharing make up the boundary of knowledge. Boundaries of responsibility are composed of interorganizational and intraorganizational boundaries where Memoranda of Understanding (MOU) and personnel, who act as "boundary spanners", are mechanisms by which these boundaries are crossed. The boundary of capacity is shown to be crossed by way of increased funding and on-the-ground work, and a decrease in litigation.

3.4.1 Crossing Boundaries of Knowledge

As defined here, the boundary of knowledge, or who knows what, is one of the founding principals of the USFS and is exemplified by the agency's "culture of expertise" (Cortner and Moote 1999; Kaufmann 1960; Voth, Fendley, and Farmer 1994). The development of expert knowledge on the part of agency specialists has traditionally demarcated a separation between the agency and the public it serves (Kaufman 1960). The findings from this study suggest that knowledge is being transferred, across this traditional organizational boundary, both to and from USFS agency personnel and that some stakeholders are seeking to become experts in their own right. One prominent mechanism for crossing the boundary of knowledge, field trips, came to the fore during data analysis.

3.4.1.1 Sharing Information Across the Boundary of Knowledge.

Providing information to the public is not a new function for the USFS, as public involvement is a necessary component of the National Environmental Protection Act (NEPA) process. However, the information now being shared goes well beyond that which has been traditionally transferred during review and comment procedures, suggesting that the public is more intimately involved in aspects of planning and implementation of projects on forest land.

Five USFS interviewees mentioned that they routinely share information with non-agency members of collaborative groups that they would not traditionally share. Because the non-agency stakeholders are involved in the decision-making process prior to the traditional public comment period they are requesting more and different kinds of information. This finding was consistent across all three case studies, however; three of the five interviewees noting this boundary crossing were from the NFRC. As one USFS line officer from the NFRC commented:

> "Traditionally, I would write the proposed action and then send it out for comment, but now, because of the collaborative, they're involved with developing the proposed action from the beginning".

While sharing information with stakeholders is not a new practice for USFS personnel, the data suggest that the stakeholders are not only the recipients of information, but that they also transfer information to the USFS. Six USFS interviewees commented that they receive information from stakeholders. These findings were consistent across all three case studies. While stakeholders have traditionally relayed information to the USFS through the comment and review period of proposed actions, the interaction and relationship building aspects of the collaborative process allows for a deeper level of understanding of the information received from stakeholders. One USFS staff member from the MVFC noted,

> "we start to learn things from the community. Sometimes it's factual knowledge about the area. Sometimes it's their perspectives – the way they see the land."

Stakeholders are also proactively presenting their desires and expectations to the USFS, prior to the traditional comment period, sometimes in quite substantial ways. In discussing the collaborative group's involvement with recommendations for stewardship contracting, an interviewee from the LMFRC who was representing a non-governmental organization stated:

> "So, we informed the USFS that we want to do forest restoration using the stewardship contracting tool whenever possible. This forest was not at all familiar with stewardship contracting. They did the pilot on the west coast – so western Oregon and parts of California and a little bit of western Washington- those forests were familiar with

> stewardship contracting, but not here. Contracting wasn't being used because we don't have a lot of value in our timber at this point. But, we wanted it to be used because that was one of the few ways we could insist on best-value criteria. So, our group created a recommendation memo on a specific restoration area outlining how to use the stewardship contracting. That was part of the design process. We gave the recommendation memo to the Forest Service before they started the NEPA process. Then after the NEPA process, we delivered what we call an implementation memo. Now that you're implementing the project, we want to have involvement in publicity and outreach to the public and the contracting aspect in stewardship contracting . So we specifically spelled out the type of involvement we wanted to have. That was one area where the Forest Service definitely changed the way they do business."

In this example, the collaborative group was not only expressing their desire to use stewardship contracting, but there was also an element of the group educating the USFS how to best utilize one of its own administrative tools. As a result, the USFS began using stewardship contracting, and at the time this research was conducted, was continuing to do so, suggesting a durable change in the organizational processes directly attributable to the collaborative group.

3.4.1.2 Developing Expertise Across the Boundary of Knowledge

Because most of the collaborative group members do not have the same level of expertise as the USFS when it comes to project planning and implementation, USFS staff members noted that they spend extra time educating the collaborative groups about silvicultural concepts, wildlife habitat requirements, and fire ecology. Six interviewees mentioned that the USFS transfers knowledge to the collaborative groups for the purposes of educating the groups on technical aspects of forestry that is traditionally only held by forestry "experts". Interviewees from all three case studies noted this finding. As one staff member from the MVFC noted when discussing the data and information shared with stakeholders,

> "The stakeholders want to learn. They want to know about the forest, and forest conditions, fire, and ecology. We try to accommodate that."

This finding was more prevalent in the NFRC , however; with four of six quotations coming from USFS personnel from that case. The type of information and data shared, such as map

layers and stand density data are typically internal to the agency specialists. Personal observation notes and meeting minutes confirm this trend. It is not uncommon for members from the NFRC to request maps and data from the USFS that would ordinarily be used only internally. One silviculturist from this case study noted that group members will even accompany USFS specialists into the field to make suggestions regarding which individual trees should be treated. Another USFS staff member from the NFRC noted that,

> "Just from an educational standpoint, we've had to educate the [collaborative group] on terminology, data, and research, so that they can understand why we do what we do and what our justifications are. We create tons of tables, GIS layers, and all kinds of stuff to help accommodate their data needs".

These data suggest that the collaborative groups, especially the NFRC, now want to acquire the same knowledge that USFS specialists hold, for their own edification and, in essence, to become 'experts' in their own right. USFS participants from the LMFRC and the MVFC also mentioned sharing information and data with the respective collaborative groups, however, it occurs more informally through, as one participant from the LMFRC mentioned, "focus group- type" meetings and informal field trips.

The collaborative group in the NFRC is also requiring greater transparency about the data being used by the USFS specialists to develop management actions and make decisions. As one interviewee from the NFRC commented,

> "Presently, anytime we have a meeting with the [collaborative group] I am usually there to take notes and I send those notes out for their final approval and then I communicate with them by sending them information that they ask for and data and map layers."

USFS staff members of the NFRC mentioned this increased need to "justify" their decisions by providing information and data to the collaborative group, suggesting a growing frustration with having to do so. The tension that this creates suggests the potential for creating a barrier to the

collaborative process and potentially a barrier to integrating organizational change brought about from collaboration . As one interviewee from the NFRC commented,

> "In the end, I feel like it limits our flexibility when we are going to go out and implement these projects because we have agreed to all these things that make them feel better".

This could be owing to the storied and strained history of that case study and initial indications are that there is perhaps a lack of trust between the USFS and the collaborative group that leads to the need to verify and justify forest management actions on the part of the USFS.

3.4.2 Crossing the Boundaries of Responsibility

Kettl (2006) states that, "With networks increasingly sharing the job of service delivery, it becomes more difficult for administrators in government – or in one of the legion of government's private and nonprofit partners – to determine their role in contributing to a program's success" (p. 16). Kettl (2006) goes on to say that it is imperative to define the boundaries of responsibility if partnerships are going to function efficiently and effectively. Any actions taken at cross-purposes or duplication of efforts between the agency and its partners could potentially derail progress and harm the collaborative relationship. As defined here, boundaries relating to responsibility seek to define what actions are taken by whom. Boundaries of responsibility can be drawn interorganizationally – between USFS employees and the collaborative group, and intraorganizationally – between individuals within the agency.

3.4.2.1 Interorganizational Boundaries of Responsibility

One defining attribute of boundaries of responsibility is the presence of Memoranda of Understanding (MOU). MOUs serve a dual purpose in relation to boundary crossing. MOUs can help define the loci along the organizational and administrative boundary of responsibility where crossing is possible, effectively negotiating the "decision space" between the agency and the collaborative group. In direct opposition to this shared responsibility premise, MOUs can also

reinforce and solidify boundaries between the agency and the collaborative. At the time that this research was conducted, two of the three case studies examined in this study, the LMFRC and the NFRC, had MOUs in place with their corresponding forests. The third case study, the most newly formed of the three, had not yet developed a MOU but planned to do so in the future.

The MOU which has been negotiated by the NFRC contains language that indicates that the group and the USFS cross the boundary of responsibility to the degree that the collaborative is involved in defining the core direction that the agency will undertake in forest management decisions. The MOU states,

> "Forest Service Shall: In cooperation with the [collaborative group], examine the current ecological conditions on the jointly selected forest-wide landscapes, including community wildfire protection plan areas, and work with the [collaborative group] to facilitate broad community discussions to involve the public in developing desired future conditions for the selected area within the landscapes."

Additional data, in the form of interview quotations, further highlight the influence that this collaborative group has in USFS decision-making. The following quotation, from a USFS staff member, illustrates this idea.

> "One of the things that the silviculturists are having a hard time with is we have less and less money to do the actual implementation, so we are going to stewardship contracting, not marking trees, that kind of thing. But we are having to do more and more detailed and precise prescriptive things to meet some of these requirements of the [collaborative group]. Where as before we didn't have to put them in the contract and we were able to mark that stuff in, less formally. But now we have to put their requirements in the contract. … If the USFS is doing it all themselves, we would have a lot more control over these factors than we do now."

In contrast, the MOU for the collaborative group in the LMFRC acknowledges the involvement of the collaborative group in the decision-making process, but defines the limits of the expected involvement of the collaborative by indicating that the agency will consider the input from the collaborative group, but the influence over the content of the management decisions is less so than in the case study mentioned above. The MOU states,

> "The USFS shall: Utilize the [collaborative group] input and proposals to the maximum extent possible, consistent with legal requirements and responsibility. The U.S. Forest Service will appropriately involve the [collaborative group] where involvement would be necessary or of benefit to the process. The U.S. Forest Service will ensure that input from the [collaborative group] is appropriately considered and incorporated in management decisions."

The following quotation from a non-governmental participant of the same collaborative group further illustrates this point.

> "Really, this is kind of a local focus group on forestry, saying 'Hey, if you had to do something in this landscape, what would it be?' 'I don't know. What's the Forest Service say?' 'The Forest Service provides maps and things.' 'What about this and this?' 'Well, how are you going to address the road issue and the wildlife issues?' Then we come up with some ideas further informed by presentations from advised Forest Service officials. Then we come up with some recommendations and basically transfer them through this blood-brain barrier to the agency, like 'Hey, we're just a group of folks on the ground who are interested. Here are some recommendations to how we might proceed here. This is not to take away your responsibility to go through the NEPA process and involved the public on public lands. But for our local concerns, this would address the majority of our issues here.' I think that's an important thing to state that basically in some ways these are recommendations to the agency. They're not the agency's only recommendations. They would inform the agency's recommendations."

In sum, MOUs serve to more clearly define boundaries between the USFS and community collaborative groups. They effectively serve as a portal through which expectations, communications, interactions, and resources travel between the USFS and the collaborative groups. Comparing the two MOU examples, the first commits the USFS to specific activities and outputs, whereas the second paints broader, more generalized expectations.

3.4.2.2 Intraorganizational Boundaries of Responsibilities

No formal agreements were found to define the intraorganizational boundaries, those boundaries that define the responsibility of action relating to the collaborative arrangement between individuals within the organization. However, in all three case studies, there is evidence suggesting that there are specific USFS personnel who are expected to work with the collaborative groups in informal ways. These personnel have frequent contact with the respective

group and can be classified as “boundary spanners”. One line officer from the NFRC in discussing his role with the collaborative group stated,

“It's my job to make sure that the collaboration occurs, that the relationships are strong.”

A USFS staff member from the MVFC, in discussing his role with the collaborative group commented that he not only works with the group, but also was involved in its formation.

> “It’s not official, but I might be called a core member because myself and a few others were there at the inception of this group and involved in the first discussions about whether we should have one or not.”

This same USFS staff member also discusses the daily interactions he has with the group indicating that he functions as an important “go-between” for the collaborative group and the agency. The information from this individual was revealing and suggests that for the MVFC, the ranger district-level staff are leading the way in forging collaborative relationships with the community. Meeting minutes and participant observation notes for the LMFRC and the NFRC suggest that it is the line officers who bear the responsibility for the collaborative process.

These findings indicate that boundaries of responsibility are being crossed for the purposes of shared decision-making in the NFRC. In the MVFC, however, the boundaries of responsibility are being reinforced. These data also suggest that personnel who act as “boundary spanners” are important mechanisms for facilitating boundary crossings.

3.4.3 Crossing Boundaries of Capacity

In order to accomplish its mission, an organization must have the capacity to get work done (Kettl 2006). Decreasing budgets and increasing demands on resources, including staff, are not new circumstances to the USFS. Indeed, collaboration is noted as a way for organizations to accomplish goals they could not be accomplished alone (Gray 1985, 1989). Evidence of the USFS crossing the boundary of capacity was found in all three case studies. A total of fifteen

interviewees across all three case studies discussed ways in which the collaborative group brings resources to the USFS and the agency accepts to get work done.

In 2006, the LMFRC became involved in a collaboratively planned 13,000-acre forest restoration and monitoring project that sought to reduce the density of vegetation in order to inhibit potential crown fire occurrence and reduce the potential for fire spread within the watershed and surrounding communities. A retired USFS staff member who is now an active member of the collaborative group discusses the difficulty that the USFS had in getting this restoration project off the ground, which led to the collaboratively designed restoration project .

> "Before they got involved with [collaborative group] the USFS had been trying to use a stewardship contract in [watershed]. But, for a number of reasons, mostly internal to the USFS in this region, they had a lot of trouble getting that done, so they opted then to go with a stewardship agreement with the [non-governmental organization] which turned out to be fairly short lived. Eventually, the project was developed with the [collaborative group]."

Because of the collaborative relationship between the USFS and the LMFRC, the restoration project was able to move forward without objections or litigation. Further to the point of crossing the boundary of capacity, several members of the collaborative group put in on-the-ground hours on private property adjacent to USFS land, restoring streams and treating noxious weeds. When neighboring landowners take restorative actions on their properties, it provides an impetus for the USFS to invest in matching actions in order to create a larger spatial impact on improving watershed conditions.

A USFS staff member from the NFRC noted that the agency was having trouble getting restoration and other work accomplished because "to a significant extent we have capacity issues", referring primarily to financial capacity shortfalls. Another staff member within the same case study noted that the forest was able to receive Collaborative Forest Landscape

Restoration Program (CFLRP) funding because they had an established relationship with the collaborative group. He is quoted as saying,

> "Typically, some of the projects that were collaborated on already - we wouldn't be implementing them unless we had money set aside. So these CFLRP dollars increase our capacity to complete some of those restoration projects that we wouldn't have received dollars to implement. Our work with the [collaborative group] allowed us to get that funding. "

A retired USFS staff member who is now an active member of the MVFC talked about future monitoring work and the importance of the collaborative group in accomplishing treatments on the forest.

> "I think we'll end up with some multi-party monitoring. You've heard that discussion. I think people want to do it. We just need to have some resources in place before starting out. I mean, the other thing that's really come out of the relationship with the group that's been really helpful overall, is has allowed us to do a lot of the treatments that needed to be done….and I think, just the very existence of the group helped make that happen."

These data suggest, that for the three cases examined here, the USFS has been able to cross over their boundary of capacity and increase the amount of restoration actions, and potentially monitoring, work that otherwise may not have been accomplished. In some instances, the restoration work was physically carried out by collaborative group members on private property adjacent to national forest land that aided in implementation of a fire reduction strategy. In other situations, treatments were carried out with funding received through monetary schemes that required collaborative group involvement. While the type of capacity (funding, lack of litigation, on-the-ground-work) varied between the three case studies, all three case studies experienced greater capacity resulting from the boundary being crossed.

3.5 Discussion

As evidenced here, the porosity of boundaries makes it possible for organizations to extend their reach beyond their own defining characteristics and into the external environment (Dudley and Raymer 2001; Quick 2011; Quick and Feldman 2014). I have presented evidence

that organizational boundaries of the three cases examined are being crossed by USFS personnel and non-agency stakeholders as they engage in collaborative governance over local national forest management. The data suggest that the offices of the USFS in this study are crossing the boundaries of knowledge, responsibility, and capacity as they engage in collaborative decision-making. Crossing boundaries is resulting in changes to the organizational structures and processes of the USFS. As Agranoff (2006) suggests, skillfully working across boundaries is key to facilitating collaborative progress, and evidence presented here is in agreement with this assertion.

The embeddedness of federal land management agencies into the communities in which they have offices isn't unique to the USFS as other federal agencies that provide public services are similarly embedded. As Ansell (2003) discusses, embeddedness facilitates collaborative governance because the communities provide the trust and social capital needed to overcome difficult and confounding problems. Thus, the external environments can both facilitate and necessitate boundary crossings that, in turn, become catalysts to organizational change. Organizational change literature makes clear that organizations can be vulnerable to externally-enforced change when their values and actions are misaligned with the surrounding environment (Miller and Friesen 1980; Weick and Quinn 1999).

The boundary of knowledge, a boundary that has traditionally separated the USFS and the public it serves is being crossed by both agency personnel and non-agency stakeholders. Here I present evidence that the agency provides information and data to the non-agency stakeholders earlier in the planning and decision-making processes than would be found in the traditional public involvement model. The traditional public involvement model in natural resource management under NEPA requires an agency to take into consideration public comments and

information and data sharing is not an uncommon practice during the collaborative process. It is indeed an important component relationship building and adaptive learning processes. In this study, however; I highlight an unexpected new finding that suggests it is not only the agency crossing this boundary, but the non-agency stakeholders themselves are crossing the USFS's organizational boundaries. I also present evidence that in one case study, the NFRC, the non-agency stakeholders are behaving in a manner that suggests that they are trying to obtain the status of forestry "experts" by requesting and expecting specialized and technically explicate information and data. This could indicate a lack of trust between the agency and non-agency stakeholders.

Trust is at the foundation of many public natural resource planning processes and is a key determinant in shaping planning outcomes (Lachapelle, McCool, and Patterson 2003). Davenport et al. (2007) suggest that reserachers generally agree upon a defintiion of trust following Rousseau (1998). Rousseau (1998) defines trust as ''a psychological state comprising the intention to accept vulnerability based upon positive expectations of the intentions or behaviors of another'' (p. 395). Smith et al. (2012) describes four dimensions of trust involved in community-agency relations: 1) dispositional trust; 2) trust in the federal government; 3) shared values; and 4) moral and technical competencies. Dispositional trust refers to an individual's propensity to trust or distrust others. Smith et al. (2012) comment that dispositional trust is generally a stable personality characteristic attributable to "early-life social interactions" (p. 454). Trust in the federal government stems from an individual's "level of confidence in the ability of the federal government to carry out its fiduciary responsibilities" (p. 454) and this level of confidence translates to the level of trust an individual extends to a management agency. A belief that a resource management agency shares an individual's values and holds the same

"perspectives, opinions, and desired outcomes" of resource management portends that individual's trust in the agency. Finally, the trust that an agency will do what it is expected and obligated to do relies on several factors relating to moral and technical competencies. Smith et al. (2012) suggest that for trust to exist in the agency-community relationship,

> "there must be some expectation on the part of the trustor (e.g., local community member) that the trustee (e.g. management agency) will adhere to moral codes, show respect for the trustor's values, and be technically capable and able to perform specific tasks that yield benefits for the trustor" (p. 455).

Using Smith et al.'s (2012) framework, the requests for specialized information from the agency by the NFRC could stem from a concern that the agency does not share the same values and expectation of outcomes as the community stakeholders. The storied history of the relationship between the agency and community members is rife with conflict. During the "timber wars" disputes over forest management often resulted in intensively strained relationships between the community and the USFS and the community experienced harsh economic downturns. While the collaborative effort between the USFS and the NFRC has resulted in a decrease in litigation and increased funding for restoration projects, the wound from the aforementioned difficulties has not completely healed. The economy of the community in which the NFRC resides is still timber-dependent and influential in the area. Many of the NFRC's members are individuals who were involved in the earlier conflicts and their memory is long. Although the community that encompasses the LMFRC shares a similar history with the NFRC, the economy of the area is no longer dependent upon timber and many of the timber operations in the area have closed. Perhaps one reason that we do not see a similar desire to develop expertise among the LMFRC's non-agency members it is that those individuals and businesses involved in the earlier conflicts are no longer an influential part of the community.

A desire on the part of the non-agency stakeholders to become "experts" could be also be driven by other contextual factors. Timber industry representatives make up a portion of non-agency stakeholders in the NFRC. A need to ensure that any treatments or plans that the USFS executes meet timber industry objectives could be a driving factor in the desire of some stakeholders to fully understand USFS's methodologies and the agency's justifications of proposed actions. A long-standing conflict between the timber industry stakeholders and representatives of the environmental community could point to mistrust between the non-agency stakeholders themselves. The need to "level the playing field" as it were, by making information used in decision-making available to all parties within the collaborative, is yet another potential motivation to obtaining knowledge and developing expertise.

One interpretation of the data, that the source of the behavior of non-agency members of the NFRC is a lack of trust between the agency and stakeholders, could have implications for the understanding the finer dimensions of boundaries themselves. An initial conclusion could be drawn that the less trust that exists between the agency and stakeholders, the more porous the boundary of knowledge will become through increased stakeholder demands on agency personnel to provide more information and data and that the information and data provided yield greater specificity. The fact that the LMFRC and the MVFC appear to have less porous boundaries of knowledge while yielding little evidence of trust issues could potentially signify a correlation between these factors; stakeholders are placing fewer demands on the agency in both cases as they place greater trust in the agency's ability to share stakeholder values and expectations. On the one hand, and in a positive sense, the greater the porosity of the boundary, the greater the opportunities for building positive communication, knowledge development, and working relationships, in essence, social capital. On the other hand, too much porosity may

negatively affect individual staff members if they feel their expertise is challenged or divested. This could have to potential to hinder their willingness to act as boundary spanners. Thus, it is important for agency leadership to understand what collaborative activities are taking place at which organizational boundaries, and find ways to negotiate cross-boundary actions that are mutually beneficial to the agency and stakeholders. Future research aimed at further exploring the relationship between community-agency trust and the porosity of organizational boundaries, knowledge and others, could aid agency leadership carry out their negotiation tasks. Future research could aim to quantify the porosity of boundaries by enumerating the points or "nodes" at which boundaries are crossed and describing the intensity of activities at these nodes. Correlating the resultant data with qualitative information regarding the level of trust could provide beneficial insights to theorists and practitioners. Alternatively, a regression analysis of these same variables could confirm or refute the causal relationship between porosity and trust.

The finding from the NFRC that the agency has allowed its boundaries to be open to the extent that the collaborative group, to a certain degree, is providing direction to the agency on the agency's direction and goals is also a new finding. Evidence was presented from the NFRC that the collaborative group was able to exert their will and caused an opening in the boundary of knowledge. Likewise, the findings further suggest that limitations set by the MOU for the LMFRC reinforce the boundary of responsibility, but in the NFRC, I observed that the MOU allows for greater decision-space, and therefore more influence, from the collaborative group over the direction and content of land management decisions. These differences potentially speak, once again, to the storied past and the relationship characteristic of trust of the NFRC group as I have described above. Another plausible explanation for this difference could involve the leadership qualities and priorities of the USFS involved in the MOU negotiation with non-

agency representatives. Throughout my interviews with both the agency personnel and non-agency members of the NFRC, the name of a past line officer was brought up several times. The impression that I got from these discussions was that this particular individual was exceedingly pro-collaboration and maintained close relationships with the non-agency members of the collaborative group, especially those representing the timber industry. This line officer has since moved out of the community, but held his USFS position during the timeframe that the MOU was signed. Could this individual's objective of developing and retaining a close collaborative relationship have influenced the porosity of the boundary of responsibility? Surely this is a possibility and future research that describes in detailed the history of collaborative group could yield findings that further underscore the importance of individual leaders in the collaborative process. The fact that only two of the case studies I investigated had signed MOUs between the USFS and the collaborative group at the time of this study is most likely explained by the short timeframe since inauguration of the third case study, the MVFC.

I also presented evidence that the USFS's boundary of capacity was being crossed in all three case studies; however this resulted in different resources gained in each case. One potential explanation for these differences is that each case study holds different goals and objectives and the those individual goals aligned with the specific opportunities available.

Kettl (2006) and Langford and Hunsicker (1996) describe the boundaries of knowledge, responsibility, and capacity in a generalized fashion. This study further describes these boundaries by their attributes. The data presented here suggest that the organizational boundaries are not monolithic entities, rather they are composed of dynamic properties that provide nodes of opportunities for boundary crossing and are influenced by the contextual factors that make up the case studies. Evidence was presented that the properties of information

and data sharing make up the boundary of knowledge, while MOUs compose inter-organizational boundaries of responsibility and the expectation of acting as "go-betweens" of some personnel make up intra-organizational boundaries of responsibility. The boundary of capacity was shown to be crossed by way of increased funding and on-the-ground work. The data suggesting that the boundary of responsibility is being crossed by the NFRC as it asserts itself into the decision-making arena, represents a significant change in the organizational processes and structure of the USFS. Further research is needed into the prevalence of this type of activity across a broader cross-section of case studies as implications of such actions could potentially lead to power shifts resulting in unfavorable outcomes including a weakening of authority and potentially, agency capture.

In order for organizational boundaries to be crossed, some mechanism must exist by which boundary crossing is facilitated. Evidence presented here suggests that that one way boundaries of responsibility are being crossed is through the use of MOUs. Boundaries of knowledge are crossed through the presentation of information during field trips and data are often transferred by individual USFS personnel. Agency personnel at varying levels within the hierarchy are not only responsible for data transfer, but often act as "boundary spanners" who play a pivotal role in collaborative relationships (O'Flynn, Blackman, and Halligan 2014; Williams 2002). As noted in the findings section, that for the MVFC, the ranger district-level staff are leading the way in forging collaborative relationships with the community. Meeting minutes and participant observation notes for the LMFRC and the NFRC suggest that it is the line officers who bear the responsibility for the collaborative process. This could be owing to the different collaborative skills and nature of the individuals taking on these tasks. A future line of inquiry into the skills and personality characteristics of those that self-identify or are assigned the

role of boundary spanner could be beneficial to agency managers are they hiring new staff that will help steer their organization deeper into collaboration. Langford and Hunsicker (1996) noted that the boundary spanner for most organizations is an individual holding a top executive or management position. Contrary to Langford and Hunsicker's (1996) assertion, however, I presented data that suggest that it is not only the line officers that are leading the way in the collaborative relationships, but staff specialists also perform this pivotal role. A future line of inquiry could seek to further describe the relationship between the bureaucratic hierarchy and the role of boundary spanners by examining the proposition that not all boundary spanners in community-agency collaborations are in leadership positions. This could be empirically tested by measuring the correlation between the known characteristics and functions of boundary spanners and the positions in which those individuals are employed.

While evidence of boundary crossings and resultant organizational change, as defined in this study, was found within all three case studies, it is important to note that the results were based on a limited number of informants and the study did not include the entire population of those who might have experienced the same phenomenon. The reader is cautioned that the restriction of data collection to three case studies does not permit generalizations across the entire agency, but do highlight the organizational boundaries and the mechanisms by which they are crossed which could be tested across a large sample of USFS collaboration in future studies.

3.6 Conclusion

This study brings awareness to the importance of boundaries as a way of understanding how public land agencies engage in community-based collaborative processes and how the organization is changing as a result of this engagement. The linkage between trust and the porosity of boundaries has the potential to reveal opportunities for collaborative governance as

well as identify the ways in which boundary crossing could act as barrier to collaborative decision-making. The actions that represent crossing boundaries can be have a positive impact on collaborative efforts if they build trust, engage stakeholders productively, and result in outcomes that are environmentally sustainable and socially supported. These same actions can be negative if they skew decisions towards one set of perspectives and hamper agency personnel from meeting broader public trust responsibilities. By understanding the role of boundary spanning, there exists an opportunity for agency leadership to be more conscientious of the daily changes and challenges these individuals are experiencing and help them manage workload, expectations, and relationships internally and externally. There also exists an opportunity for agency personnel to be more conscientious of the roles they can play in aligning agency trust responsibilities for public lands and resources with public expectations.

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CHAPTER FOUR: ORGANIZATIONAL CHANGE IN THE UNITED STATES FOREST SERVICE: COLLABORATIVE GOVERNANCE AND THE ROLE OF POWER

4.1 Introduction

If everyone is in charge, is anyone in charge? Kettl (2006) poses this "profoundly difficult and important" question in his seminal work, *Managing Boundaries in American Administration: The Collaborative Imperative* (2006, p.17). As public agencies increasingly engage in collaborative governance networks, this question becomes central to those parties vying for decision-making power and highlights a fundamental tension between agencies and the publics they are charged with regulating. Collaborative governance, as defined herein, refers to a decision-making process that is consensus-oriented and brings together public and private stakeholders in collective forums (Ansell and Gash 2008) where "interactions among structures, processes, and traditions" determine how "power and responsibilities are exercised, decisions are made, and who is included in collective decisions" (Leong, Emmerson, and Byron 2011, p. 237).

Power is an elusive concept yet its importance is reflected in every facet of our human relations. Indeed, as Castells (1997) states, "Power is everywhere and nowhere: it is in mass production, in financial flows, in lifestyles, in the hospital, in the school, in television, in images, in messages, in technologies…" (p. 309). Power is often a guiding force in collaborative governance arrangements. Actors within the collaborative network, on behalf of the interests they represent, enter into relationships with one another in order to negotiate a seat at the decision-making table. Previous research has identified two primary concerns regarding the role of power in collaborative processes: convening stakeholders and managing power imbalances (Purdy 2012). I define power imbalances in collaborative governance, which assumes shared power, as the result of stronger parties manipulating other parties within the collaboration. As

Purdy (2012) notes, there must exist adequate power to convene stakeholders. Government agencies are often in the position to invite community stakeholders into the collaborative process while, at the same time, being actors in the process themselves. This leads to concerns that agency personnel may opt to dominate the process by including or excluding certain stakeholders. This dominating behavior may be exhibited by non-agency members of the collaboration as well (Lukes 1975). Power imbalances are often cited as a common problem in collaborative governance arrangements and can have a lasting, deleterious impact on the collaboration process and its outcomes (Gray 1989). If stakeholders, including agencies, do not have power in terms of "resources, voice, or legitimacy" they risk being co-opted by more powerful stakeholders within the collaborative arrangement (p.410).

The question of "who is in charge" in collaborative governance arrangements also points to a significant challenge to a given agency's organizational structure and processes. As Kanter et al. (1992) point out, struggles for decision-making power within the collaborative governance network may result not only in changes in control of the collaborative process, but in a reallocation of resources or changes in the direction of the organizations within the network. In addition to reallocating resources, organizational change, or a "reweaving of actors' webs of beliefs and habits of action to accommodate new experiences obtained through interactions" (Tsoukas and Chia, 2002, p. 567) can produce profound changes in the way an organization functions, the form it takes, and who becomes its members and leaders (Huber et al. 1993).

Organizations must be able to adapt to the changes taking place in their external environments in order to endure (Tsoukas and Chia 2002). In Chapters 2 and 3, I present evidence that changes are occurring in the organizational structures and processes of the USFS, in answer to agency-community stakeholder collaborative efforts. Continuous and dynamic

individual-level changes and the spanning of administrative boundaries are occurring at the field level offices of the USFS explored in this study. Although I did not seek to investigate power and power dynamics as an overarching theme in this study, it emerged as a critical variable in the agency-community case studies that I examined. An important social dynamic in community collaboration over public lands is the constant push-and-pull exertion of power and negotiating who has what power in the relationship. If we are to view organizational change as a constant dynamic process, power is an integral part of that dynamic. Hence, if we are better able to understand power in collaborative governance arrangements, we will be better able to understand collaborative governance's impact on organizational change.

For all its importance, however, there is a yet unfulfilled need to understand the extent to which power and power imbalances affect collaborative relationships (Cook 2015, Purdy 2012). More to the point, despite the integral role that power-sharing plays in collaborative governance, relatively few empirical studies have been dedicated to understanding the role of power in natural resource management at the field level (Raik, Wilson, and Decker 2008). Examining power dynamics in federal natural resource agencies and the extent to which power affects organizational change is understudied despite its potential to significantly alter the organizations structures and processes (Huber et al. 1993; Kanter, Stein, and Jick 1992; Weick and Quinn 1999).

This chapter contributes to the empirical analysis of the role of power in collaborative governance arrangements and its integral role in organizational change, by qualitatively examining the attributes of power at play in three offices of the United State Forest Service (USFS) and the collaborative groups in which they are involved. A description of the data and

methods used in this analysis and a presentation of the results follow. The chapter concludes with a discussion of the results and their implications as well as suggestions for future research.

4.2 Background

4.2.1 The Promise of Collaboration

Over the past three decades, collaborative governance has come to the fore as a way to address natural resource management problems that are often complex and contentious (Cestero 1999; Dukes 2001; Scardina, Mortimer, and Dudley 2007; Singleton 2002). These collaborative efforts have been created in response to the inability of any single entity to address the interconnected ecological, economic, and social complexities arising from resource management and as a method of answering the public's demand to be more involved in making decisions about the management activities on public lands. Additionally, as budgets are stretched and human resources constrained in natural resource management agencies, collaborative governance arrangements have been touted as an important avenue for getting on-the-ground-work completed, particularly in the areas of forest planning and forest restoration (Cheng and Burns 2007; Carr, Selin, and Schuett 1998; Leach, Pelkey, and Sabatier 2002; Selin and Chevez 1995; Selin, Schuett, and Carr 1997; USDA 2009). Collaboration with community groups, particularly in the western United States, has also proliferated as a way to address threats to life, property, and infrastructure from wildfires (Jakes et al. 2011).

Because of these increasingly complex issues, collaboration with community stakeholders has been portrayed as a way to find win-win solutions in which these issues can be addressed beyond the traditionally adversarial political discourse (Walker and Hurley 2004). Conventional top-down, bureaucratic regulation of natural resource management has been marked as ineffective and calls for collaborative governance, with its focus on community

stakeholder involvement, are common in the collaboration literature (Ansell and Gash 2008; Cheng and Strutevant 2012; Gerlak, Heikkila, and Lubell 2013; Leong, Emmerson, and Byron 2011;). Lachapelle, McCool, and Patterson. (2003) state "synoptic-based approaches are no longer appropriate in the messy situations commonly found in natural resource planning" (p. 476). Indeed, the engagement of community collaborative groups has become so much a part of the new way of doing business for state and federal land management agencies that it has become institutionalized (Cheng 2006).

Collaboration scholars have highlighted structural and procedural factors that are required for the collaborative policy-making process to be effective. Collaborative groups should have "clear process rules, open lines of communication, active and sustained stakeholder engagement, mutual learning, and transparent flow of technical information" (Gerlak et al., 2013, p. 422). Cheng and Sturtevant (2012) note that collaborative groups should include a wide variety of participants who represent a broad spectrum of perspectives, and that information should be shared among the collaborative group members. Participants should have a shared understanding of the problem that the group seeks to address. Ideally these same participants should openly share monetary and technical resources as well as human capital such as time and work with the goal of developing novel solutions to address the agreed upon problem. Cook (2015) argues that "when these factors are present, the process should lead to a more beneficial outcome from an environmental perspective" (p.4). Power, however, and its distribution within the institutions involved in collaboration, can affect how problems are defined and solutions are ultimately implemented (Strutevant and Donoghue 2008).

4.2.2 Power Defined

Robert Dahl (1957) in his seminal work, *The Concept of Power* notes that most people have an intuitive sense of what power means, yet scientists have struggled to articulate its precise meaning. A review of the social science and collaborative governance literature proves that a mutual definition remains elusive (Cook, 2015; Shively, 2011; Gerlak et al. 2013). In its simplest form, power refers to the influence one person or group has over the other. Applying this definition to collaborative governance, power can be thought of as the desire and ability of a subset of the members of a collaborative network to influence the decision made on behalf of the network as a whole. Power, however, is seldom expressed in such simple terms.

Kanter (1992) writes that power "is a function of formal authority, resources controlled, and contingencies managed" (p. 46). Agrawal and Ribot (1999) define power as the authority to create rules and make decisions. Egan et al. (2011) refer to three phases of power; the ability to control the behavior of others or the "power over", and the ability to authorize the participation of stakeholders who might otherwise be marginalized or the "power for", and the "power to" which he defines as the ability to measure another entity's ability to realize its goals. Regardless of how power is defined, I argue here, that power can become a complex and dynamic association when a government agency, that is legally accountable for its decisions, negotiates and shares decision-making power with non-governmental stakeholders. Collaboration, by its very nature and definition, assumes some level of shared power (CEQ 2007). However, if power is not shared equally among all collaborative group members, it has the ability to prevent equitable relationships from emerging or transform symmetrical collaborative networks into asymmetrical decision-making bodies with the potential to further strain already tenuous

relationships. Analyzing power in collaborative processes is challenging, not only because of its inherent complexity, but as Purdy (2012) states, "because they [collaborative processes] are ambiguous, complex contexts in which participants, social structures, and processes can change rapidly" (p.410). Power and ensuing power dynamics can best be understood through the examination of the observable attributes that constitutes power and the dynamics it creates. In this study, I examine the attributes of power through three focal areas of analysis: the sources of power, the application of power, and the consequences and outcomes resulting from the application of power.

4.2.3 Sources of Power

Congress confers regulatory authority directly to the USFS through the agency's statutory mission and mandates, along with substantive and procedural limitations to that power (Coggins 1999, Nie 2004). While these congressional mandates are binding, they are broad and vague in nature. Nie (2004) presents the example of the 1897 Forest Service Organic Act (Organic Act) as a mandate that provides explicit instructions, but little guidance, and leaves the interpretation of the instructions to the agency. The Organic Act calls for the USFS to improve and protect forested lands within its boundaries as well as secure favorable water flows. Congress leaves the terms of "improvement" and "protection" undefined and does not offer guidance as to the priority of these mandates. This leaves the door open for interest groups with competing goals and values, to impose their own definitions and priorities on the USFS (Nie 2004). As Nie (2004) contends, the vagueness of the Multiple Use Sustained Yield Act of 1960 (MUSYA), the National Forest Management Act of 1976 (NFMA), and the National Environmental Protection Act or 1970 (NEPA) further takes the hard decisions out of Congress's hands and places it squarely on the backs of USFS field-level personnel in the form of administrative discretion and

rulemaking. In this way, power is conferred to USFS line officers to make decisions they interpret as meeting broad Congressional intent, but also tailored to local environmental, economic, and socio-political contexts.

On the other hand, the MUSYA, NEPA, and NFMA all provide substantive opportunities for public participation and indeed, agencies are required by law to invite public participation (Coggins, 1999). In essence, the power of authority is passed from Congress to the agency and the agency, in turn, passes a measure of this power down to the public by inviting their comments on the specifics of rulemaking. However, as Coggins (1999) states, no statue delegates decisions regarding federal natural resources to the public. Nonetheless, as Nie (2004) writes, "from an interest group standpoint, rulemaking can also be a very effective organization tool because rules are so specific and thus, provide a focal point of the debate" (p. 252). Authority is not a fixed, objective form of power, however, and is not limited to the agency. As stakeholders often seek to limit an agency's authority and discretion by imposing their values and views on the decision-making process, agencies must then negotiate their discretionary authority with stakeholders, effectively defining their "decision space" which, over time, can lead to an imbalance of power between agency and non-agency stakeholders. The public also gains authoritative power through litigation and administrative appeals.

Hardy and Phillips (1998) note that, along with authority, "resource-based power" and the "power of discursive legitimacy" can be useful in understanding interorganizational dynamics. Resource-based power recognizes that those organizations that hold important and valuable resources can wield power to their advantage (Purdy 2012). As Purdy (2012) states, resources can include such tangibles as: "financial resources, people, technology, and supplies; and intangibles such as knowledge, culture, and capabilities" (p. 410). Scholars of bureaucracy

recognize that the expertise, knowledge, and information retained by the agency are also attributes of resource-based power (Clarke and McCool 1996; Rourke 1984,). Expertise, knowledge and information are intimately linked, where the resource-based power of expertise lies in the accumulation and acquisition of a specific body of knowledge through formal academic training or job experience (Greiner and Schein 1988). Weber's (1958) classic research suggests that the element of expertise is indeed, the bureaucracy's primary source of power. It is important to note, however, that these resources, and the power they connote, are not limited to the agency; other parties within the collaborative group can bring these resources to the table and use them to assert their power (Gray 1985).

Discursive legitimacy refers to a type of power that can be amassed when an organization has the ability to speak on behalf of the public on issues of importance to the public and advance a public discourse on that issue and manage the meaning related to it (Hardy and Phillips 1998). Purdy (2012) writes,

> "Organizations exercise discursive legitimacy when they act on behalf of the values or norms of society, such as the rule of law, the logic of economic rationality, or principles such as democracy or respect for diverse cultures. An organization with discursive legitimacy draws its power from the status of the values or logic it represents" (p. 411).

Two additional sources of power, external support and trust, have the potential to alter the dynamics within a collaborative governance arrangement. There is power in the external support, from interest groups or from political associations, that an agency garners for its' programs and positions. Clark & McCool (1996), in their research on power across seven federal natural resource agencies, found external support to be comprised of,

> "the size of the constituency, the nature of the interests clustering around the organization, the nature of the agency's mission, and the extent of intragovernmental support for the organization" (p. 11-12).

Trust is an often overlooked source of power in the collaborative governance literature as it is most often intertwined with other power sources; however, trust is at the foundation of many public natural resource planning processes and is a key determinant in shaping planning outcomes (Lachapelle, McCool, and Patterson 2003). It stands to reason that community-agency relations would be heavily based on trust, especially when negotiating the collaborative decision-space; per Nie's (2004) analysis, agencies which enjoy a high level of trust on the part of public stakeholders are more likely to be granted a greater degree of discretion. Smith et al. (2012) describes four dimensions of trust involved in community-agency relations: 1) dispositional trust; 2) trust in the federal government; 3) shared values; and 4) moral and technical competencies. Dispositional trust refers to an individual's propensity to trust or distrust others. Smith et al. (2012) comment that dispositional trust is generally a stable personality characteristic attributable to "early-life social interactions" (p. 454). Trust in the federal government stems from an individual's "level of confidence in the ability of the federal government to carry out its fiduciary responsibilities" (p. 454) and this level of confidence translates to the level of trust an individual extends to a management agency. A belief that a resource management agency shares an individual's values and holds the same "perspectives, opinions, and desired outcomes" of resource management portends that individual's trust in the agency. Finally, the trust that an agency will do what it is expected and obligated to do relies on several factors relating to moral and technical competencies. Smith et al. (2012) suggest that for trust to exist in the agency-community relationship,

> "there must be some expectation on the part of the trustor (e.g., local community member) that the trustee (e.g. management agency) will adhere to moral codes, show respect for the trustor's values, and be technically capable and able to perform specific tasks that yield benefits for the trustor" (p. 455).

4.2.4 Application of Power

Purdy (2012) provides a framework for assessing power in collaborative governance processes by examining how three sources of power – authority, resources, and discursive legitimacy – are applied in three separate arenas: the participation arena, the process design arena, and the content arena. The participant arena considers who the participants and leaders will be in the collaboration process. Purdy (2012) notes that participants need to include those "with formal power to make a decision, those affected by a decision, and those with relevant information or expertise" (p. 411). Those who possess the power of authority can apply their power by determining who will be invited to participate in the collaboration process and what range of interests the participants represent. The power of resources, when applied in the participation arena, can influence how deeply participants engage in the collaborative process by influencing the number of people to be involved and level of information and expertise brought to the collaboration. Discursive legitimacy is applied when judgment is passed regarding who deserves to be involved in the collaboration and who can be trusted to make follow through on commitments made on behalf of the organizations that the participants represent (Purdy 2012).

The second arena in which power can be applied, according to Purdy (2012), is the process design arena. Process design occurs prior to the formation of the goals of the collaboration and determines the "where, when, and how" of the collaborative process (p. 411). Purdy (2012), following Straus (2002), stresses that the process design must be adaptable to allow for trial and error as the collaborative process proceeds. Authority is applied when participants feel they "own" the process and have a right to impose their expectations about how the process will unfold and the degree to which other participants will be active during deliberations and negotiations. The availability of resources can shape the collaborative process

by facilitating or limiting factors such as meeting location and frequency, access to technology, and other costs associated with meeting hosting and attendance. Those holding the greater amount of power derived from discursive legitimacy "can lead to domineering behavior and one-way flows of information" (p.411). Discursive legitimacy can also be applied as a gatekeeping function and can aid in determining the status of other participants and how and with whom the collaborative process is discussed (Purdy 2012).

The final arena in which Purdy (2012) suggests that power is applied is the content arena. Applying power in this arena determines the issues that the collaborative effort will address and what desired outcomes will be pursued. As Purdy (2012) writes, "authority allows an organization to set the agenda and establish other participants' expectation regarding the outcome of the process" (p. 412). The participants who hold the power of resources have the ability to control avenues of communication such as meeting documentation, which, in turn, as Purdy (2012) suggests, might influence future meetings. Discursive legitimacy is applied in the content arena when participants attempt to influence the prioritization of issues and how those issues are framed (Purdy 2012).

While Purdy's (2012) framework presents a good starting point from which to analyze power in collaborative governance processes, her discussion of the application of authority is incomplete. Per Nie's (2004) analysis, Congress passes authority to make decisions regarding federally managed land to natural resource agencies in the form of administrative discretion and rulemaking. The agency, in turn, transfers some of this power to the public in the form of public involvement (Nie, 2004) and administrative and judicial action (Scardina, Mortimer, and Dudley 2007). Stakeholders can also apply their power of authority through lawsuits and appeals of the USFS's actions. An alternative interpretation is that Congress devolves its oversight power to the

public by requiring the agency to provide public involvement opportunities. It can also be argued that, through the public involvement process, stakeholders seek to limit agency discretion by imposing their values and views, and agencies seek to negotiate their discretion with stakeholders. Indeed, the role of collaboration for some agencies is to reduce litigation and rebalance the power of authority between themselves and stakeholders.

4.2.5 The Consequences and Outcomes of the Application of Power

For all its promise of beneficial outcomes, collaborative governance is not without its pitfalls. Purdy (2012) notes that many of the pitfalls of collaboration can be "linked to power disparities among participating organizations and how power affects such issues as representation, participation, and voice" (p. 409). Selin and Chavez (1995) suggest that collaboration involves joint decision-making and assumes shared power and shared responsibility for subsequent outcomes and consequences of decisions. Similarly, Amy (1987) notes that a common assumption of informal negotiations, such as in many community collaborative efforts, is that power is equally distributed among the participants. However, a review of the collaborative governance literature shows that a jockeying for power is common in collaboration processes (Gray 1989; Short and Winter 1999; Susskind and Cruikshank 1987; Tett, Crowther, and O'Hara 2003). Ansell and Gash (2007) writes,

> "If some stakeholders do not have the capacity, organization, status, or resources to participate, or to participate on an equal footing with other stakeholders, the collaborative governance process will be prone to manipulation by stronger actors"(p. 551).

Inconsistent expectations of the collaborative process and lack of commitment of necessary resources have been labeled as obstacles that can impede, if not derail, collaborative efforts (Moote and Becker 2003). Critical interests may not be adequately represented (Leach 2006) and negotiations that seek to balance private interests with public authority are not always successful (Walker and Hurley 2004). Power differences between the parties can heighten conflict and often

result in a depletion of human resources as well as the potential to harm the very resources for which the collaboration was trying to protect (Buckles & Rusnak, 1999). A lack of trust between agencies and stakeholders (Davenport et al. 2007; Leach 2006; Schuett, Selin, and Carr 2001) and an unwillingness to compromise on strongly-held, value-based positions often result in difficult and sometimes unsuccessful collaborative efforts (Donoghue and Sturtevant, 2008). And finally, Coggins (1999) famously warns that collaboration is an abdication of responsibility and regulatory authority on the part of federal national resource agencies and as such, is illegal. At its best, power can be used to level the playing field, giving all participants of a collaborative group equal representation (Purdy 2012). At its worst, power imbalances can create scenarios in which the more powerful stakeholders can co-opt the process and in some cases "capture" the agency with whom they are collaborating (Singleton 2000; Seidenfeld 2000).

Collaborative governance has been looked to, by scholars and practitioners alike, as a means to avoid litigation and resolve increasingly complex social, economic, and ecological issues. Despite collaboration's proliferation, there is a need for more research on the role of power in those processes (Cook, 2015). This gap in the collaborative literature is especially troublesome in the face of the potential deleterious consequences such as co-option and agency capture (Ansell and Gash 2008; Cook 2015; Imperial 2005; Purdy 2012). This study aims to address this gap in the literature.

I draw on results from semi-formal interviews with participants from three case studies inclusive of USFS personnel and collaborative group members. I apply Purdy's (2012) framework to examine the attributes of power organized around three focal areas of analysis: the sources of power, the application of power, and the consequences and outcomes resulting from the application of power. In this study, I used three research questions to guide the analysis

1) What are the sources of power at play in the USFS-community collaboration interactions?
2) How is power being exerted in the USFS-community collaboration interactions?
3) What are the outcomes and consequences of the application of power to the USFS's organizational structures and processes?

4.3 Methods

4.3.1 Case Study Approach

Because of a relative scarcity of existing studies documenting the organizational changes and adaptations made by any federal natural resource land management agency as a result of their engagement with community collaboration, this study employs qualitative research methods applied to a sampling of case studies. As Yin (2009) notes, a case study approach is useful when: 1) research questions seek to answer the "how" and "why" of a situation; 2) the researcher has little control over behavioral events; and 3) the focus of the study is a contemporary social phenomena.

Three case studies encompassing the USFS and community collaborative efforts were selected. I developed several criteria for selecting which case studies would be best suited for this investigation. From a research design perspective, I chose three case studies from which I could draw a compare and contrast analytic approach. The three case studies are situated in three separate administrative regions of the USFS. By selecting different regions of the USFS, I was interested in examining if organizational changes were common across regions or if there were perhaps differences in agency culture relating to community-based collaboration across regions. The cases also vary in time since inception and in formality of operational structure. I chose cases with differing times since inception to explore the types of organizational change that

might occur at different phases of collaboration. The three collaborative groups are similar in purpose, however; with each group working with their respective national forests on forest restoration issues. A caveat of note: this study focuses only on the ranger district and supervisor office levels of the USFS in each case study. While changes may be occurring at higher levels of the USFS, this line of inquiry was beyond the scope of this study. I suggest however, that examining these same research questions at different levels within the bureaucratic hierarchy would be an interesting line of inquiry for future studies.

From a practicality stance, it was imperative that the collaborative group and the corresponding national forest be amenable to the idea of being studied. It was also important to me that the cases I chose had not been intensively studied in the past as to add uniqueness to my study and to not further burden any existing participant-researcher relationships. I was working with a limited travel budget as well, therefore, all case studies needed to be easily and inexpensively accessible by air or car with relatively economical accommodations nearby. To protect the anonymity of interviewees, I use pseudonyms for the case studies and the national forests throughout the dissertation. The three case studies that were chosen as units of analysis were: 1) The Northmont Forest Restoration Coalition (NFRC) - USFS Region 6; 2) The Lone Mountain Forest Restoration Collaborative (LMFRC) -USFS Region 4; and 3) The Meadow Valley Forest Collaborative (MVFC) -USFS Region 2 (Table 1).

The NFRC collaborates with the Bear Valley National Forest (Bear Valley) in the northwest region of the United States and is the oldest collaborative effort among the three case studies. The community in which the ranger district and supervisor offices under study in this research reside has a population of just below 5000 people with approximately 92% of the population identifying as white. The median annual income is approximately $33,000, well

below the state median income of approximately $58,500 (United States Census Bureau 2010). Most of the current economy of the area relies on the timber, agriculture and mining industries, along with employment at state and national government offices. Some cattle, horse, and hay production can also be found in the area. The community has a long history of timber production, which is still active today and vital to the community's economy. The most enduring timber operation in the area belongs to one family in particular and was established in the 1950s.

As elsewhere, the timber industry in the area has undergone cycles of feast and famine, but has been an important source of employment for the area throughout the years. Some of the greatest challenges for national forests and resource-dependent communities came during the 1990's and the "timber wars" that followed on the heels of the listing of the northern spotted owl (*Strix occidentalis caurina*) as a federally threatened species in 1990. In 1994, the Northwest Forest Plan provided protections for the spotted owl and other species inhabiting late-successional forests in northwest regions of the United States (ROD 1994). These new forest policies combined with the globalization of the wood products market and changes in timber availability provided a hotbed from which conflict between the timber industry and environmental groups ensued. Disputes over forest management between the two factions often resulted in gridlock and litigation, making meeting forest management objectives nearly impossible for the USFS, and resulting in consequences for forest ecosystems and local communities. Communities that were dependent on the timber industry experienced harsh economic downturns. In 1989 the Bear Valley produced 128 million board feet of timber. For the period from 1994 to 1998, timber production on the Bear Valley averaged 32.5 million board feet (Power 2000). In 2000, a nearby mill closed further damaging the economic state of the community and a local four-generation lumber mill, which remains active today, was struggling

to keep its doors open for business. During this same time period, the Bear Valley, caught squarely in the middle of these competing interests, was faced with larger, more frequent wildfires, as was most of the Western United States.

Local stakeholder groups began to talk with one another and the Bear Valley, in an attempt to find ways in which economic and conservation goals could be met. In 2002, the NFRC was formed for the purposes of improving forest health through restoration practices, protecting the community from wildfire, and creating community economic viability. The NFRC represents the longest-running collaboration of my case studies. At the time of this study, NFRC consisted predominately of representatives from the timber industry and conservation interests. In 2003, NFRC and the Bear Valley formalized their working relationship by signing a Memorandum of Understanding (MOU). In 2006, WFRC developed a collaborative process protocol, herein referred to as the "CPP" (a pseudonym) that further describes their process for working collaboratively with the forest. While the wounds that came out of the "timber wars" are still observable today, the NFRC and the Bear Valley have collaborated on over 25 forest management projects to date, ranging from stewardship contracting to forest planning.

The LMFRC was formed in July 2006 and collaborates with the River Point National Forest (River Point) in the intermountain west region of the United States; it represents a "middle-aged" case study. The community in which the USFS offices studied here reside has a population of just over 3000 with 96.5% of the population identifying a white. The annual median income for the area is approximately $26,000 while the median annual income for the state is approximately $47,000 (United States Census Bureau 2010). The area's current economy is based chiefly on ranching with some minor logging and mining operations. Until the mid-1990's, the area was home to several, small, locally-owned sawmills, log home manufactures,

post-and-pole operations, and commercial firewood businesses which provided employment for the community's citizens. Similar in history to the Bear Valley, The River Point and the local community were not bypassed by the conflicts created by shifting national forest polices. Timber harvests plummeted and the community experienced a downturn in its economy. Mill closures in the late 1980s and early 1990s cost the local economy 250 jobs. Today, the remaining forest product businesses lack the capacity to process enough timber to make a large contribution to the area's economy. Recreation and tourism are now the majority contributors to the area's financial resources.

With declining timber production the River Point saw increasing forest health and wildfire issue. Although the issues have changed in recent years, many of the old conflicts persevered. Prior to the formation of the LMFRC, the River Point was mired in gridlock, facing appeals and litigation over forest management issues from protecting old-grown stands to firewood sales. The group facilitator and a non-agency participant who I interviewed for this study told the following story of how the LMFRC came to be. In 2006, environmentalists and the USFS were in disagreement over the issues of how much designated old-growth needed to be protected. A lack of understanding between the two factions was rooted in disagreements over the quality of old-growth maps that were created in 1985. The USFS and interested participants conducted field trips into old-growth ponderosa pine and Douglas fir stands and it became apparent that forest units designated as old growth in 1985 didn't meet current old growth criteria and some stands that met the criteria were unprotected. It was out of the willingness on the part of the USFS to consider ground-truthing old growth stands that the beginnings of a collaborative relationship was forged.

Today the LMFRC is a self-governed group comprised of landowners, timber industry representatives, retired USFS personnel, the environmental community, non-federal government entities, and community leaders. The LMFRC, through a MOU between the River Point and the collaborative group, works to restore the forest to a condition that mimics the historic range of variability in terms of stand structure, composition, and disturbance regimes. At the time of this research was conducted, the group had completed one major restoration project with two more slated as future activities.

The MVFC is the most newly formed of the collaborative efforts studied, with inauguration in the fall of 2010. The MVFC works collaboratively with the Sunset Ridge National Forest (Sunset) in the rocky mountain region of the United States. The community from which I conducted this research has a population of approximately 1,700 people with a mixed-race composition of approximately 53% of the population identifying as white and 41% identifying as Hispanic. The median annual income for the area is approximately $40,000 with the overall median annual income for the state is just under $59,000 (United States Census Bureau 2010).

Contrary to the first two case studies, the collaborative effort underway here was born out of a proactive desire to address forest issues rather than a reactive need to resolve conflict. Because the forest is geographically situated far from the area of the "timber wars" and the habitat in the forest is unsuitable to the northern spotted owl, the area does not bear the scars of the long-standing conflict born of that controversy. That isn't to say, however, that logging has not been part of the area's story. Historically, the community in which the district ranger office of the USFS, and to some degree the community in which the supervisor's office reside, were lumbering communities. The area experienced intensive, albeit short-lived, logging between

1890 and 1945. By the 1970s, a dwindling supply of large-diameter trees spelled the end of major logging operations in the area. Today, the forest provides recreational and aesthetic benefits to the community's citizens, many of who have taken an interest in forest health issues on the Sunset.

In the late 1990's the Sunset enlisted the assistance of the scientific community to obtain a better understanding of general ecological conditions on the forest in anticipation of an upcoming revision to the forest plan. The forest identified a specific need to understand the mixed-conifer forest type as they had received little research attention. The MVFC was formed following a stakeholder-based workshop that examined the "state of the science" hosted by the local ranger district of the Sunset and a "bridging" organization housed at a public university. This organization serves to advance the knowledge and practice of forest restoration and wildfire hazard reduction. Prior to the formation of the MVFC, most stakeholder processes in the Sunset were focused on ponderosa pine management. An interest in and need for greater stakeholder involvement in mixed conifer forest management was identified from the workshop and subsequent stakeholder meetings. The MVFC was established to include stakeholders' perspectives and to collaboratively develop science-based forest management priorities. One of the group's early successes was the award of a long-term stewardship contract in June of 2012. The contract marries collaborative forest health with a renewable energy business model. The model involves building a 5-megawatt electrical power plant that would use wood chips made from small diameter trees thinned from the forest.

4.3.2 Data Collection

Data were collected between March and August 2012 using qualitative social science research methods encompassing semi-structured individual interviews, participant observation of

group meetings, and meeting minutes and reports. I chose to conduct interviews because I wanted to develop a nuanced and rich storyline for each case study. Interviews are often chosen by researchers, when a direct line of questioning is desired and are well-suited for an exploratory study such as this. Inquiry of this sort can lead to an in-depth evaluation of details and can provide an historical context to the study that may not be acquired from other methods (Creswell 2009). I chose a semi-structured format rather than a structured format for the interviews because I wanted the flexibility to follow especially interesting avenues as they emerged during our conversations (Smith 1995). The interview guide was organized around four question categories:

1) Interviewee's background: What is your position or role within your organization? Please describe your involvement with (group's name).
2) Organizational change: Please describe any changes or adaptations that have been made in your organization in response to (Group's name)'s collaborative efforts. These may be changes that you have made or changes that have been made by others within the organization.
3) Enablers and hinderers of organizational change: What factors do you think allowed for the changes you described to occur? Please describe factors that act as barriers to change.
4) Agency as enabler of change: What steps could your organization take to facilitate change and/or incorporate ideas, plans, and programs developed by collaborative efforts in the future?

Although my study focuses on changes within the USFS, I chose to interview both USFS personnel and collaborative group members. I did so because I wanted to investigate a wide perspective on organizational change. Often when someone is immersed in their day-to-day job functions, they may not realize how things have changed and I reasoned that an outside

perspective would add depth to the study. Twenty-six semi-structured, open-ended interviews yielded approximately 18 hours and 35 minutes of audio recordings (Table 2). Of the twenty-six interviews 16 were with agency personnel and 10 were with non-agency personnel. I chose interview respondents by both purposive and network sampling (Granovetter 1976). I composed a list of key agency personnel and collaborative group members and sent an email to each describing the study and asking if they would be willing to participate. Additionally, at the end of each interview, I asked interviewees if they could suggest other potential interviewees. I developed my interview questions directly from the research questions. I asked respondents questions about changes or adaptation they made or had observed in the USFS in response their respective collaborative efforts (corresponds to research question one and three) and their roles within their home organizational and within the collaborative effort (corresponds to research question two). Additional interview questions were asked, the results of which are reported elsewhere.

In all three case studies, I timed my field visits to coincide with collaborative group meetings, which I attended. In addition to the group meetings, I attended a joint meeting of the NFRC and the USFS during my visit to Colville, Washington. I did not record meetings; rather I took extensive observational notes and recorded my thoughts and impressions in a personal journal after the meetings. The journal facilitated reflexivity throughout the research process (Ortilipp 2008). Interview notes were transcribed verbatim into a text format for content analysis and coding. Ground-truthing of interview data was accomplished by sending transcripts to each respective interviewee. Changes were made to the final transcripts based on interviewee comments and suggestions.

Written reports created by the collaborative groups, meeting minutes, and memoranda of understanding (MOU) for the NFRC and the LMFRC case studies were also collected. At the time data were gathered for this study, the MVFC did not have a signed MOU with the USFS. The intent of adding these documents to the analysis was to enhance the reliability of results by data triangulation (Golafshani 2003). To further understand my case studies and to aid in my data interpretation I became immersed within each community in which the collaborative efforts reside. I spent a total of ten consecutive days in each of the communities. During this time, I visited restaurants, grocery stores, parks, shops, and other venues where local people gathered. I engaged as many people as appropriate in informal conversations and observed social cues and constructs. At the end of each day, I recorded my impressions in my personal journal. This process has its obvious limitations in that I did not spend enough time in each community to develop a comprehensive and accurate picture nor can my singular observations be representative of the community at large. However, these observations did aid my investigation by providing context to my case studies.

4.3.3 Data Coding and Analysis

Content analysis via coding and constant comparison was conducted for 24 interviews and all generated and collected documentation employing a modified grounded theory approach (Strauss and Corbin 1990). Two interviews were dropped from the analysis because of lack of pertinent and useful information. In grounded theory, the researcher attempts to identify themes that emerge from the data within the context of the respondents point-of-view rather than "testing" a specific idea as in hypothesis-driven research. It is an interpretive, iterative process that is particularly well-suited to exploratory inquiry into a new research frontier. The coding procedure that I used followed the traditional coding process of grounded theory which includes

the generation of categories of topics or concepts (open coding), linking codes to one another in order to produce themes (axial coding), and developing a story line from the interconnects of these categories (Creswell 2009; Strauss and Corbin 1990). I modified the coding process as described by grounded theory in that I also developed *a priori* codes based on the sensitizing concepts derived from the literature that gave a general sense of reference and guidance and structurally-driven codes that were derived from my research goals and questions (DeCuir-Gunby, Marshall, and McCulloch 2011). Examples of codes based on sensitizing concepts included words derived from the collaboration literature such as capacity and conflict. Words like change or adaptation are examples of structurally-driven codes. The initial open coding process yielded 144 codes. Superfluous codes such as "sell-out" were eliminated because the same concept or quotation was also included in the code "compromise". The remaining codes were grouped and then linked together through an axial coding process to identify the power dynamics at play within the three case studies. Power emerged from the data as consistent theme and as an important facet of community-agency collaboration. Uncovering this line of inquiry triggered the need to conduct further literature review on power dynamics in order to fully analyze the data and develop the power dynamic storyline.

4.4 Findings

In this section, I present the dominant storylines, represented as the sources of power and their application, which were developed from the data. Because the story is best told by those closely involved in collaborative governance arrangements, selected quotations from interviewees are presented. In some cases, quotations were edited for clarity. Evidence obtained from documentation such as meeting minutes, agreements between the USFS and the collaborative groups, and personal observation notes are also presented. I use non-identifying

means when presenting quotations to protect the anonymity of participants. The analysis of the 24 interviews revealed five sources of power in play within the three case studies examined. These power sources include the: 1) power of authority; 2) power of resources; 3) power of discursive legitimacy; 4) power of external support; and 5) the power of trust. I use Purdy's (2012) framework, for assessing collaborative power, to organize the examples of the application of power from the sources of authority, resources, and discursive legitimacy as highlighted in her work. I extend this framework, however, by further applying it to the power of external support and the power of trust. Thirty-two quotations were coded as relating to power with 21 quotations coming from the NFRC. Table 5 at the end of this chapter, is aimed to aid the reader in comparing results across case studies and represents the number of quotations relating to each source of power, the arena in which the power is applied, and the case study from which the quotations came.

4.4.1 Power of Authority

The power of authority refers to the regulatory authority passed to the agency from Congress and the administrative discretion that allows the agency to negotiate decision-space with stakeholders in a collaborative setting. The power of authority was mentioned 10 times in interviews by both agency personnel and stakeholders across all three case studies. The NFRC provided the strongest evidence of shifting power dynamics with seven of the 10 quotations coming from that group.

In the participant arena, the LMFRC and the MVFC had representation from a broad spectrum of interests and perspectives and were open to including new members. For example, the LMFRC includes representatives from: local outfitters, state fish and game, timber industry, conservation organizations, and Bureau of Land Management. One USFS staff member from the

MVFC noted that they encourage a diverse array of participants in the collaborative effort because,

> "the more diverse your group becomes the less likely that one interest will rise to power over the other members."

The range of stakeholder interests in the NFRC was more narrow, involving the agency and two polar community interests rather than a broad spectrum. One line officer from the NFRC spoke about the need to include other stakeholders and commented,

> "I think there is an opportunity to make this less of an insular collaborative group so that there is more representation, more voices".

Leadership is also an important source of power in the participant arena and the application of leadership was varied across the three case studies. In the MVFC the line officer that works with the collaborative group is clear about the agency's role in decision-making and claims his leadership authority when working with the group. He states,

> "I chose to be very clear with the [collaborative group] that the Forest Service is the ultimate decision-maker, and that it was not their role to be decision-makers. It was to understand how the Forest Service gets to a decision."

No participants from the LMFRC mentioned leadership in the context of power during the interviews, however; their Memorandum of Understanding (MOU) clearly defines the limits of the collaborative group by asserting that the agency is the ultimate decision-maker. The MOU states,

> "The USFS shall: Make all decisions or determinations for National Forest Systems lands".

In stark contrast to the LMFRC and the MVFC, six interviewees from the NFRC made comments that suggest the USFS leadership is relinquishing some authority to the collaborative group. The way leadership is applied had consequences in the process arena where some

participants felt that they have the right to impose their expectations on the group as a whole. It was not uncommon for USFS participants to use language such as,

> "the [collaborative group] are always saying things like we will 'allow' you to do this or that."

Further evidence of this dynamic can be found in the following statement made by one of the non-governmental members of the NFRC when discussing the group's likelihood of supporting a USFS proposed action:

> "We were able to give a high level of support for projects if the agency followed our guidelines. It seemed like we were saying we'd like you to do this or that within the project. We can't tell them to do exactly what we want it's their choice. But we pressure them in a way. It's like if the agency doesn't go along with what we want, we won't support their project. "

In the content arena, the analysis of the NFRC yielded evidence that the non-agency members of the collaborative group were defining the group's agenda and expectations of outcomes through the group's collaborative process protocol (CPP) for collaborative action. The CPP details what the NFRC calls a "holistic management strategy" and was first drafted through a multi-stakeholder processes with foresters, scientists, conservation groups, USFS, the state department of natural resource, and forest practitioners, recreation and tribal interests. Despite the fact that the CPP was developed through a multi-stakeholder process, its application is for use only by the collaborative group members and the USFS. How and why the participation of the application of the CPP narrowed from a multi-stakeholder process to one of narrower interest is beyond the scope of this project, however; the evolution of this collaborative group to its current membership could provide valuable insights into the collaborative process and warrants further study. The CPP was in effect during the time of this research and was considered by the collaborative group, including the USFS, as the basis for negotiated decision space in determining forest management allocations. The CPP identifies three management areas: 1)

responsible management areas (RMA), 2) restoration areas; and 3) wilderness areas. It also outlines a set of guidelines that the collaborative group expects to be followed while implementing projects in the RMAs and restoration zones. There is an implied understanding between the collaborative group and the USFS that if the guidelines of the CPP are followed, the collaborative group will not file objections to those decisions. However, during an informal conversation with one line officer, I was told that the collaborative group was planning to file an objection to an action that the USFS considered in alignment with the CPP.

The outcome from working with the CPP was expressed by the USFS personnel interviewed as a continuum of responses ranging from frustration to the perception of the abdication of authority on the part of the USFS. The following quotation by one line officer aptly illustrates this point, but it also hints at the rationale for allowing such a practice.

> "I think that there is bitterness here - there is a culture of experts in the Forest Service and I think you'll find some staff have attitudes that suggest we give too much to the [collaborative group], we give them too much power, we let them make our decisions. If I go ahead and make this one decision based on what the collaborative group wants, which may be different than what is on the CPP, I will hear about it. There will be some employees who say that I caved in. I tell a different story about that. I don't consider it caving at all. I consider it an investment in something bigger than just that project. I will visit with the staff about that how they feel, but that is real difficult, especially when people go to school and learn how to do silviculture prescriptions and do the right thing and then we come in and compromise their integrity. As professionals, they see it that way sometimes. We are asking them to sell out on their profession for the [collaborative group]."

The preceding quote suggests that the line officer is assigning a deeper meaning to the collaborative interactions as a part of the larger process of organizational change in response to the stakeholders exerting their power.

These findings suggest that in the LMFRC and the MVFC, the power of authority remains predominantly in the hands of the USFS. In the NFRC, however, evidence was found that, while no change is occurring in the organization's regulatory authority, the agency is using

its administrative discretion to negotiate its decision space to include the collaborative group in a substantial way. When the leadership accepts pressure from the collaborative group and effectively abdicates some measure of power to the collaborative group, agency personnel often become frustrated that their authority expertise is questioned and often ignored.

4.4.2 Power of Resources

Resources include tangibles such as financial support, people, technology, and supplies; as well as intangibles such as knowledge, culture, and capabilities (Purdy, 2012). The acquisition and allocation of resources is a dynamic process and as such, the application of power stemming from resources is dynamic. Interview participants from all three case studies mentioned the importance of resources a total of eight times. Sharing knowledge through the transfer of information and data was the most commonly reported resource mentioned by interviewees. Because the transfer of information and data is discussed at length in Chapter Two and again in Chapter Three, I mention it only briefly here in the context of power dynamics.

The USFS was founded on the premise that professional foresters, who had obtained specific scientific training in forestry, would manage the nation's trust forests (Kaufman 1960; Tipple and Wellman 1991). Indeed, it is this professional knowledge and the culture of expertise that has placed the USFS in the position of having control, and hence, power, over the citizens who rely on the forests for commodity extraction, recreation, and ecosystem services. In the participant arena, three USFS staff from the NFRC mentioned that sharing knowledge with the collaborative group constituted much of the time and effort they put forth in the collaborative relationship and that they are sharing information and data that they would not ordinarily share with the public. The level of information and data required by the collaborative group suggests that the non-agency members of the group are attempting to become experts in their own right

and as such, the USFS is conveying a portion of its power to the collaborative group in the NFRC. While two USFS staff members from the LMFRC and the MVFC noted that they do share information with their respective collaborative groups, comments by collaborative group members such as, "the USFS are the experts, we rely on their expertise", indicate that the USFS continues to hold its power that is rooted in specialized knowledge in these two case studies.

In the process arena, three participants from the LMFRC noted that the collaborative group has contributed to the funding available to the USFS for restoration projects through the stewardship contracting process. Prior to its involvement with the collaborative group, the USFS did not frequently use the stewardship contracting process for restoration projects prior to the founding of the collaborative relationship, due to, what one USFS staff member called, "internal barriers". These barriers included lack of support for stewardship contracting from those in administrative positions. In discussing the collaborative group's involvement with recommendations for stewardship contracting, an interviewee from the LMFRC who was representing a non-governmental organization stated:

> "So, we informed the USFS that we want to do forest restoration using the stewardship contracting tool whenever possible. This forest was not at all familiar with stewardship contracting. They did the pilot on the west coast – so western Oregon and parts of California and a little bit of western Washington- those forests were familiar with stewardship contracting, but not here. Contracting wasn't being used because we don't have a lot of value in our timber at this point. But, we wanted it to be used because that was one of the few ways we could insist on best-value criteria. So, our group created a recommendation memo on a specific restoration area outlining how to use the stewardship contracting. That was part of the design process. We gave the recommendation memo to the Forest Service before they started the NEPA process. Then after the NEPA process, we delivered what we call an implementation memo. Now that you're implementing the project, we want to have involvement in publicity and outreach to the public and the contracting aspect in stewardship contracting . So we specifically spelled out the type of involvement we wanted to have. That was one area where the Forest Service definitely changed the way they do business."

In this example, the collaborative group was not only expressing their desire to use stewardship contracting, but there was also an element of the group educating the USFS how to best utilize

one of its own administrative tools. As a result, the USFS began using stewardship contracting, and at the time this research was conducted, was continuing to do so, suggesting a durable change in the organizational processes directly attributable to the collaborative group.

Three participants from the NFRC also noted an increase in funding for projects owing to the collaborative relationship. Non-agency members of the NFRC regularly lobby in Washington D.C., which has affected the local USFS budgets. According to one USFS line officer,

> "I would say the constituents of the NFRC have a large impact on what budgets and the amount we receive."

The interviewees did not expound on how those budgets were used.

In the content arena, one USFS staff member from the NFRC implied that the non-agency collaborative group members controlled the avenue of communication by requiring meeting minutes to be approved by the non-agency members before they are distributed. In discussing his role in the collaborative group the USFS staff member commented,

> "Presently, anytime we have a meeting with them I am usually there to take notes and then I send out those notes to the NFRC for their approval".

These findings suggest that knowledge is shared across all three case studies, but that the dependence by the collaborative group on the USFS to provide information that the agency would otherwise not share is most prevalent in the NFRC. The data also suggest that in the LMFRC and the NFRC, the USFS is benefiting from the collaborative governance arrangements is receiving increased funding. However, the mechanisms the collaborative groups use to obtain funding differs between the case studies. Finally, evidence from the NFRC suggests that the non-agency members of the group exert their power by controlling one source of communication via the approval and distribution of the meeting minutes.

4.4.3 Power of Discursive Legitimacy

An organization can exert the power of discursive legitimacy when it speaks on behalf of an issue of importance to the public at large or when it affects the status of other participants or limits their ability to participate (Hardy and Phillips 1998). According to Purdy (2012), those wielding the power of discursive legitimacy can display domineering behavior that may restrict who has access to certain information or with whom and how the collaborative process is discussed. Evidence of domineering behavior was found only in the NFRC and was mentioned by two participants. Falling in both the participation and content arenas, one USFS line officer noted that the agency and representatives from the timber and conservation interests are paid for their work in the collaboration by the organizations they represent. This is also true for some members of the LMFRC and the MVFC, however, for the NFRC, the perception within the community is that the fact that the timber industry and conservation interests are paid, allows the non-agency collaborative group members to dominate the direction of collaborative actions with the agency that benefit only their limited interests. One line officer noted that he believes that this creates a barrier to an inclusive collaborative effort.

> "I start thinking about how limited in membership this group is and I'm not sure I would classify it as a true collaborative group and that worries me. The fact that [collaborative group] is paid to be at the table is a barrier for others in the community who would otherwise likely engage in the collaborative effort. This [collaborative group] can afford to meet intensely and in the middle of the day. Some of the others who represent other interests can't meet because they would not be paid."

In the process area, one line officer commented that because of the history of collaborative success and an on-going relationship with the Secretary of Agriculture, the collaborative group displays an air of "righteousness" when dealing with the USFS. The following quote by a USFS line officer describes how the collaborative group controls the collaborative conversation and sometimes displays domineering behavior.

> "The conversation we have with [collaborative group] is often rooted in their ego. They think because they have all of this wonderful history, that they are world famous, and that the secretary of Agriculture talks to them -- so USFS you need to do this our way because we're great. There's this ego thing going on with this, I'm sorry, but it just isn't flying well with me and I think that it's potentially dangerous. I think that it keeps us stuck if we are not careful. They have every reason to be proud of their success, there is no question about that, but when it is used to strong-arm us, something critical has to change in the way we relate to them. I want to honor the history of success and all the work that they did to come together, that is real and important, but I want to change the nature of the conversation and I just don't know how to."

In sum, the collaborative group in the NFRC has excluded other interests from joining the collaborative effort by its frequency and timing of meetings. As such, the interests represented by the paid members of the collaborative group often take priority over the interests of other publics from the community. Notes from my personal observations and from informal conversations with community members suggest that, although the group membership is limited to a narrow set of interests, the group presents itself to the community, through its promotional materials, as inclusive of a diversity of interests. My impression is that this may have resulted in a measure of hostility from the excluded interests within the community although the examination of such is beyond the scope of this study.

4.4.4 Power of External Support

The level of external support an agency has garnered for its programs can play a significant role in the success of those programs and can be a cross-cutting attribute in the participant, process, and content arenas as external support can affect who participates, the resources available, how the process unfolds, and the prioritization of issues. A personal observation that I made during a public meeting with the NFRC suggests that the collaborative group specifically, as well as the collaborative process in general, is not supported by at least one local elected official. About thirty minutes into the meeting, the conversation changed from the USFS describing current projects, to a discussion of collaborative efforts between the USFS and

the collaborative group including an upcoming co-sponsored collaboration training workshop. At that point, the County Commissioner who was in attendance, forcefully pushed himself away from the table and upon standing, exclaimed that he, "didn't want to have anything to do with that collaborative stuff", and hastily left the meeting. The lack of support for the collaborative efforts of the USFS and the group by this Commissioner was confirmed by two line officers. One of those line officers commented that the Commissioner thinks the collaborative group is "evil, absolutely evil" and that the Commissioner echoed the sentiments of some of the interest groups in the community who are not represented by the collaborative group. Data reflecting issues of external support were not noted for the other two case studies.

4.4.5 Power of Trust

Interwoven into the power dynamics of all collaborative relationships between the collaborative groups and the USFS is the power of trust. The story of power dynamics emerged during the qualitative data analysis, and within this emergent finding, trust was a recurring theme. Within the power of authority, as discussed above, we can see examples of how the power of trust is intertwined with another source of power. Specifically, this plays out in the NFRC in the perception by non-agency members of the collaborative group, that the agency does not share their same values (Smith et al. 2002). Following the framework laid out by Smith et al. (2002) an individual's trust in an agency is predicated on the belief that the agency shares an individual's values and will act in a manner that results in the outcomes that are important to the individual. Four USFS staff members from the NFRC noted that they spend a significant amount of time and effort in "justifying", to non-agency members of the group, their recommendations for specific management prescriptions. This finding suggests that a mistrust exists between the agency and the other collaborative group members. The non-agency members of the

collaborative group perceive that agency's priorities and values are not shared with them (Smith et al. 2002) or conversely, that they do not share the same values and expectations as the agency. In either case, the power within the relationship is distributed in such way that it is the agency that must account for their decisions to the collaborative group's approval.

One non-agency collaborative group member summarized this perception of the lack of alignment between stakeholder values and agency actions leading to a lack of trust with the USFS in the following comment.

> "Hopefully, the upcoming workshop will be similar to the one that we did years ago and it will have us all talking and building trust and relationships because we need that. A lot of things came up and we thought they would be addressed in this forest plan, but they weren't. In fact, all the collaboration that had gone on, not only [collaborative group], but a lot of other stakeholders, was completely ignored in the proposed action for the forest plan. That was a reality check. It's like wow…we thought we were in the line with the Forest Service but really it doesn't look like we are".

In contrast, evidence was found in the LMFRC that a concerted effort on the part of the USFS to build trust with the collaborative is underway, and that the agency's actions are in alignment with the priorities of the collaborative group. The following quote by one USFS staff member surmises this premise.

> "We presented the data about the proposed project and basically asked [collaborative group] to consider this data in light of the actions that we're proposing. And then we…we're willing to listen to their proposals. We took them seriously. For example, we know that road list is a significant issue. From the onset of the [proposed project] we immediately got into dialoguing and talking about the road list so, there wasn't a fight. We understood that we could still be effective with this project even if we couldn't treat in ROW list. And I also think that as a result of this coming together - one of my objectives was - that if we could build enough trust to get this one project through, anybody could judge us based on the product. And the idea was integrity. We will do what we said we will do. We will not do what we said we won't do. We will have integrity in this project. We're asking you to trust us because I think trust is a big concern on both sides. And I think that was the kind of change that took place there. And it wasn't easy, I'm sure for the special interest groups, and I know within the Forest Service there were people that it was a paradigm shift for them, and it was not necessarily easy to say, okay."

It is clear from these two disparate examples, that trust is not necessarily a function of the length of time a group has collaborated with the USFS. The NFRC had been operational for more years than the LMFRC, yet there is an apparent lack of trust in the NFRC. Issues of the power of trust did not emerge from data collected from the MVFC. Within LMRRC and the MVFC, the collaborative groups have been able to avoid issues of trust through pro-active and inclusive processes that include the USFS acting on collaborative agreements and sharing similar goals and values with stakeholders. In fact, one USFS staff member from the MVFC summed up his perception of the role of power, including trust, in the collaborative effort by saying, "there are no power struggles with this group.

Trust, and the lack thereof, between the parties involved in a collaborative effort, is a well-documented requirement for, or potential barrier to, productive collaborative efforts (Lachapelle, McCool, and Patterson 2003). Trust is important to collaborative efforts because it is integral to power dynamics in collaboration over public land management. When stakeholders lack trust in public land agencies there is the potential for conflicts resulting from disagreements over decision-making, with stakeholders exerting their power over agencies precisely because of the discretion and public involvement power provided by federal law and policy.

4.5 Discussion

The results from this study indicate that, for the three case studies examined herein, the power dynamics at play within the collaborative governance arrangement include authority, resources, discursive legitimacy, external support, and trust. These powers, and the imbalance that sometimes result from their application, are representative of the underlying tensions that can be present in collaborative governance arrangements.

At its best, collaborative governance can provide solutions to complex and contentious natural resource problems through power-sharing arrangements (Cestero 1999; Dukes 2001; Scardina, Mortimer, and Dudley 2007; Singleton 2002). It can lead to positive changes in the organizational structure and processes of natural resource agencies and can result in getting more on-the-ground work completed (Carr, Selin, and Schuett 1998; Cheng and Burns 2007; Leach, Pelkey, and Sabatier 2002; Selin and Chevez 1995; Selin, Schuett, and Carr 1997; USDA 2009). Such is the case for the LMFRC and the MVFC. The USFS office in the LMFRC has seen an increase in their funding through the ability to use stewardship contracting for restoration projects, an organizational process not fully utilized by the USFS prior to its engagement with the collaborative group. Likewise, in the NFRC, the USFS noted that they had experienced an increase in funding through the lobbying efforts of the collaborative group.

The findings of this research also suggest that the application of power does not always lead to beneficial actions (Purdy 2012). As is apparent from the evidence from in the NFRC when power imbalances occur, authority is challenged, frustrations arise, community and political relations are strained, stakeholders are excluded, and trust is difficult, if not impossible to maintain. In essence, the very factors that are required for an effective collaborative effort (Cestero 1999; Cheng and Strutevant 2012; Gerlak, Heikkila, and Lubell 2013; Schuett, Selin, and Carr 2001; Wondolleck and Yaffee 2000;) may be violated when one party within the collaborative network exerts their power in ways that give them advantage over other community interests. Previous studies that look at power in natural resource decision-making are often theoretical in nature (Raik, Wilson, and Decker 2008) or examine only a single case study (Cook 2015; Purdy 2012). This study is important in that it reveals that power is exerted in varying ways between case studies resulting in different realized and potential consequences.

As mentioned above, power associated with resources, beyond financial advantages, plays a predominate role in the power dynamics between the agency and collaborative groups. The non-agency members of the collaborative groups in the LMFRC and the MVFC, acknowledge and accept the USFS position as experts. In the NFRC; however, non-agency members of the collaborative group question the actions of agency personnel and are aiming to become experts in their own right. Assuming the old adage that knowledge is power, it would appear that the NFRC is seeking to accumulate power by acquisitioning knowledge. However, contextual factors other than the quest for power could be driving the NFRC's desire to obtain specialized information and knowledge. Applying Smith et al.'s (2012) framework, the requests for specialized information from the agency by the NFRC could stem from a concern that the agency does not share the same values and expectation of outcomes as the community stakeholders. The storied history of the relationship between the agency and community members is rife with conflict. During the "timber wars" disputes over forest management often resulted in intensively strained relationships between the community and the USFS and the community experienced harsh economic downturns. While the collaborative effort between the USFS and the NFRC has resulted in a decrease in litigation and increased funding for restoration projects, the wound from the aforementioned difficulties has not completely healed. The economy of the community in which the NFRC resides is still timber-dependent and influential in the area. Many of the NFRC's members are individuals who were involved in the earlier conflicts and their memory is long. Although the community that encompasses the LMFRC shares a similar history with the NFRC, the economy of the area is no longer dependent upon timber and many of the timber operations in the area have closed. Perhaps one reason that we do not see a similar desire to develop expertise among the LMFRC's non-agency members it is that

those individuals and businesses involved in the earlier conflicts are no longer an influential part of the community.

A desire on the part of the non-agency stakeholders to become "experts" could be also be driven by other contextual factors. Timber industry representatives make up a portion of non-agency stakeholders in the NFRC. A need to ensure that any treatments or plans that the USFS executes meet timber industry objectives could be a driving factor in the desire of some stakeholders to fully understand USFS's methodologies and the agency's justifications of proposed actions. A long-standing conflict between the timber industry stakeholders and representatives of the environmental community could point to mistrust between the non-agency stakeholders themselves. The need to "level the playing field" as it were, by making information used in decision-making available to all parties within the collaborative, is yet another potential motivation to obtaining knowledge and developing expertise. Even if the initial motivation in obtaining specialized information is not to gain power, the result of doing so places the non-agency stakeholders in the position of having knowledge with which they could exert power should they chose to do so. A limitation of this research is that it does not delve deeply in the antecedents of the power relationships at play, especially from the community's perspective. A future research direction that would prove useful to collaboration scholars and practitioners alike, is to elucidate the perceived motivations for the community stakeholder's actions of information and data transfer.

An even more noteworthy finding of this study is that power is unlikely to be applied independently as some sources of power can be applied across more than one arena and the sources themselves can be interwoven with other power sources. Such is the case of the role of trust and the application of power. It is apparent, in this study, that the USFS in the NFRC is

transferring a measure of its decision-making power to the collaborative group beyond what would typically be expected in a collaborative governance arrangement. This was not found to be the case in the LMFRC and the MVFC. The curious question becomes, if the USFS has regulatory authority, why does the agency readily relinquish its authority to the collaborative group? It would be reasonable to assume that the apparent political power gained by the non-agency member's relationship with the Secretary of Agriculture places the stakeholders into a position from which they assume the power of authority.

In the NFRC, a tension between the power of authority and the power of trust results in struggles over discursive legitimacy across the arenas of participation, process design, and agenda setting (content). As Nie (2004) noted, Congress sets up this power dynamic through its devolvement of oversight of the agencies through the public involvement mandate. It is through the community-level collaboration that the power dynamic is manifested and the consequences are played out. We see this reflected in the actions of a line officer in the MVFC who asserts the USFS's authority by drawing a line in the sand when it comes to decision-making, thereby making the collaboration process simply an extension of the public involvement process. The NFRC, however; presents a very different story. Even though the USFS possesses authoritative power, a lack of trust by stakeholders, as seen in the NFRC, can undermine that power and open the space for contests over participation, process, agendas, and management actions. The consequence of this tension is that the USFS personnel can feel that their expertise and credibility is being threatened, and they react with negativity and resistance to the collaborative effort that only further tightens the tension. In the NFRC, even though there was some USFS staff resistance at first, line officers seemed open to the collaborative group's involvement in defining management goals and actions, and the stakeholders themselves placed trust in the

USFS. However, the collaborative group, because of its narrow stakeholder representation has, over time, continued to exert its power across boundaries and into areas that have heretofore, been the purview of agency personnel. A conclusion could be drawn that the smaller and more narrowly bounded the collaborative group, the more easily power can be consolidated and exerted over the agency and over other non-agency stakeholders. However, Rudeen et al. (2012) found that a full representation of interests in a collaborative effort did not guarantee the avoidance of tensions over power. Future research that further examined the relationship between stakeholder representation and power relationships would improve the understanding and practice of collaboration in natural resource management.

4.6 Conclusion

By examining the role of power in collaborative governance arrangements, I hope to illuminate the complexities of such arrangements and highlight the organizational changes that result from collaborative decision-making. Results from this study indicate that the agency and stakeholders, when entering into a collaborative relationship, are subject to an intricate and dynamic process of jockeying for power and negotiating decision space. The level of trust between the stakeholders and the agency, and in particular, the level of shared values and the perception of the alignment of agency goals and actions with the desires and expectations of the collaborative group is a key component of how power is distributed within the collaborative relationship. The agency needs to assess the stakeholders' expectations, interests, and power, and be able to proactively respond in a way that builds and maintains trust if it is to retain power. By understanding power and its role in collaborative governance arrangements, agency personnel can help balance asymmetrical power relationships, which could lead to more durable collaborative outcomes as represented by organization change.

Table 5 A comparison of results across case studies, the number of quotations relating to each source of power, the arena in which the power is applied, and the case study from which the quotations came.

Source of Power	LMFRC	NFRC	MVFC
Authority	2 – Participant	4 – Participant 3 – Content	1 – Participant
Resources	2 – Participant 3 – Process	3– Participant 3 – Process 1 – Content	2 - Participant
Discursive Legitimacy	None	2 – Crosscut[1]	None
External Support	None	1 – Participant	None
Trust	1- Process	4 – Crosscut[2]	None

[1] Cuts Across the Participant and Content Arenas
[2] Cuts Across the Participant, Process, and Content Arenas

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CHAPTER FIVE: DISCUSSION

5.1 Introduction

This dissertation focuses on the individual actor as an agent of change in organizational theory and this research sheds light on the impact of collaboration on federal natural resource agencies. Over the past three decades, public land management has seen a shift in the way public lands are managed; away from the command-and-control legacy of the progressive era, to collaborative approaches that take into account the social and ecological expectations and demands of an ever-more involved public (Ansell and Gash 2008; Burns and Cheng 2005). This shift in how land management policies are implemented has lead to organizational changes within the USFS as the agency learns to navigate and negotiate the collaborative terrain.

For organizations to endure, they must be able to adapt to changes taking place in their external environments (Tsoukas and Chia 2002). Public land management agencies in general, and the USFS specifically, are unique among bureaucracies in that they have field offices that are embedded in communities and are differentially exposed to the varying values, priorities, and needs of community stakeholders. In turn, the USFS must engage with these stakeholders in collaborative processes in order to effectively and efficiently manage public lands. The sustainability of collaborative outcomes is dependent on the organizational changes made by USFS staff members; however, the role of the individual in organizational transformation as it pertains to community collaborative efforts is understudied. This dissertation examines organizational changes in three field-level offices of the USFS brought about by the agency's response to the collaborative efforts in which they are engaged and provides practical and theoretical insight to the inclusion of collaboration into the organizational structure and processes of the USFS.

5.2 Summary of Findings

Chapter Two of this dissertation describes the day-to-day changes made by individual actors that have led to incremental and continuous organizational change. USFS personnel have seen an expansion in their assignments and tasks, spend more time in meetings, and answer to increased demands for information. The agency has even seen a shift in hiring requirements for new employees to include collaboration experience or at a minimum, a propensity for collaborative work. Agency personnel are also experiencing a change in their perceived role in decision-making, from the expert who holds proprietary knowledge to a collaborator who shares that knowledge with non-experts. The role of leaders and leadership acceptance of collaboration emerged as a key component to successful organizational change.

Chapter Three describes the processes by which the aforementioned organizational changes are occurring and, in and of themselves, represent further evidence of organizational change. The field-level offices of the USFS examined in this study work across their organizational boundaries in response to the pressure to include community stakeholders in their decision-making processes (Bingham and O'Leary 2006; O'Leary, Gerard, and Bingham 2006). Evidence of the crossing of three predominant organizational boundaries were presented, the: 1) boundary of knowledge; 2) boundary of responsibility; and 3) boundary of capacity. This research suggests that the properties of information and data sharing make up the boundary of knowledge. Boundaries of responsibility are composed of interorganizational and intraorganizational boundaries where Memoranda of Understanding (MOU) and personnel who act as "boundary spanners" are mechanisms by which these boundaries are crossed. The boundary of capacity is shown to be crossed by way of increased funding and on-the-ground work, and a decrease in litigation. Trust between the non-agency members of the collaborative

groups studied and the USFS emerged as an important finding as the data suggest that the less trust that exists between the parties, the more porous the organizational boundaries become. In one of the case studies that I examined, we saw how the non-agency members of one of the collaborative groups puts pressure on the agency to supply them with information and data to which they would not otherwise have access. In effect, stakeholders of this collaborative group are trying to become experts in their own right, presumably because of a lack of trust that the agency will act in accordance to the stakeholder's values and expectations and because of their contextual history that is fraught with distrust. In doing so, the boundary becomes more open allowing for the stakeholders to cross the organizational boundary into the agency's purview.

Trust emerged once again in Chapter Four, where I present a "cautionary tale" of shifting power dynamics within the USFS as it grapples with retaining its discretionary authority whilst the public exerts its oversight power as intended by law and policy. The scholarly works examining collaborative governance in natural resource management often describe the benefits to the agency that collaboration can bring. In this study, I present evidence that the collaborative relationship can lead to greater organizational capacity to the agency to get work done through increased budgets, stewardship contracting, and on-the-ground work. This study also suggests that collaboration can be seen as a disturbance to the agency and can form the basis for tension and conflict. Even though the USFS possesses authoritative power, an apparent lack of trust by stakeholders can undermine that power and open the decision space to negotiation and tension. Trust is but one source of power within the collaborative relationship, however; it is also interwoven into the other identified sources of power at play including, authority, resources, discursive legitimacy, and external support.

5.3 Implications

Organizational change, as presented in this dissertation, is a constantly negotiated process based on the action of individual actors. Most research on organizational change focuses on the internal drivers of change; this dissertation presents a unique perspective by examining change from an external driver, collaboration. It is necessary for the leadership of the USFS to understand their role in the collaborative process and to understand how and why these changes are taking place if they are to be sensitive to the added pressures and tensions that collaboration brings to their individual staff members. Collaboration is usually discussed in the literature as a process that builds capacity and prevents litigation. While this is undoubtedly the case for two of the case studies examined here, this study also points to potential pitfalls of collaboration, mostly in the form of power imbalances and the role of trust, or the lack thereof. Managers in the USFS will need to be cognizant of the attributes of trust and should encourage their staff to build trust with stakeholders if they wish to maintain equitable power positions in the shared decision-making process. Through boundary crossing activities that promote integrity and consistency and through the thoughtful assertion of their administrative discretion, the agency can maintain a balanced yet authoritative position. Future research that provides evidence of the linkage between organizational change, trust, and power would be useful in further understanding how the collaborative process and the collaborative behavior of individuals in natural resource management links to the outcomes of collaboration.

5.4 Limitations

As noted in Chapter Two, the exploratory nature of this research, while useful in its descriptive ability, is limited in its generalizability of results. By purposefully choosing to examine case studies because they were known to be involved in collaborative efforts, I "stacked

the deck" as it were, in favor of finding changes relating to collaboration. By recruiting only those participants for the interviews who were known to be engaged in collaboration, I limited my sample size, further reducing the generalizability of the results. While evidence of organizational change, as defined in this study, was found within the three case studies, the definition and interpretation of those variables that indicate change relies on the singular experience of one researcher. I interpreted the findings based on my impressions that were formed through my personal and professional "world view" and my impressions may differ from the participants interviewed.

During the analysis phase of this research, a methodological limitation emerged that I consider an important finding of this study. The issue of anonymity and its impact on the presentation of findings proved to be troublesome. While it is of the utmost importance to ensure that the confidentiality of participants and case studies is maintained, doing so limited the scope of the analysis. In Chapter Four, the NFRC is clearly exerting their power over the agency more so than the LMFRC and the MVFC. The data suggest that a lack of trust between the agency and non-agency members of the collaborative group is a driver of the power imbalances. However, I was unable to fully present the historical and contextual reasons for why this collaborative relationship has developed in this way because doing so would reveal which case study was being discussed, henceforth providing identifying markers of some of the interviewees. Even though I limited the level of analysis because of confidentiality issues, in some cases, I did provide enough information that some confidentiality may be compromised. This "confidentiality paradox", one in which participants provide insightful information that ultimately cannot be used in the presentation of findings, is a disadvantage of qualitative research and one that is worthy of further discussion and study among social scientists.

5.5 Concluding Comments

For all its promises and all its pitfalls, collaboration holds an optimistic place in natural resource decision-making. How federal agencies will cope with the organizational changes that an informed and engaged public will bring to those agencies in the future will provide fodder for organizational change theorists, public administration scholars, and collaborative governance researchers for many years. Current organizational change literature has been based on macro-theory, but I encourage future qualitative researchers to engage in studies that collect empirical data to develop a more nuanced understanding of the organizational changes in natural resource management agencies. Emerging issues such as the development of climate change adaptation strategies will require agencies to engage even more intensively with community stakeholders in the coming years and collaboration will, no doubt, be at the center of that engagement. I will conclude this body of work with the words of one interviewee from this study, "We are always asking ourselves if the effort we put into the collaboration is worth it. It takes a great deal of care and feeding. But repeatedly we have said, absolutely, the effort has been worthwhile".

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