ABSTRACT

Zachary L. Bolick for the degree of Master of Public Policy presented on May 24th, 2013.

Title: Organizational Shifts Within the U.S. Forest Service: A Case Study of Senior Willamette National Forest Employees

Abstract Approved:

Denise Lach

The U.S. Forest Service has been forced to adapt to numerous changes over the last three decades. These include a dramatic reduction in workforce, a declining budget, and controversial lawsuits. Moreover, recent agency wide studies suggest that within the Forest Service a new resource management paradigm has emerged that differs greatly from its previously timber dominated one. This study compliments previous research about the Forest Service by using semi-structured interviews with senior Willamette National Forest staff to examine the perceived organizational changes that have occurred within this specific forest during the last thirty years. Interviewee’s answers are analyzed and coded using Mintzberg’s and Westley’s framework for organizational change.

The results of this study suggest that in the last three decades the Willamette National Forest has been challenged to address a number of internal and external forces by becoming smaller, more collaborative, and diverse. Likewise, responses suggest that the Willamette Forest is currently within a transition stage of change and continues to search for its organizational identity.

Keywords: organizational change, national forest service, paradigm, culture

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Zachary L. Bolick, Author
Organizational Shifts Within the U.S. Forest Service: A Case Study of Senior Willamette National Forest Employees

by

Zachary L. Bolick

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# TABLE OF CONTENTS

1. **INTRODUCTION** | Page 1

2. **BACKGROUND** | 5

2.1. Willamette National Forest | 5

3. **LITERATURE REVIEW** | 10

3.1 Organization Theory | 10

3.2 Organization Change | 11

3.3 Organizational Culture | 12

3.4 A Framework for Organizational Change | 15

3.5 Change Intervention: Kurt Lewin's Three-step Model | 23

4. **METHODS** | 24

4.1 Sample Population | 25

4.2 Participants | 25

4.3 Interviews | 28

4.4 Questions | 29

4.5 Recording | 30

4.6 Transcription | 31

4.7 Coding | 31

5. **RESULTS** | 32

5.1 Changes in Culture and Vision | 32

5.2 Structure of Decision Making in the Agency | 44

5.3 Systems, Procedures, and Programs | 48

5.4 People, Jobs, and Facilities | 61

5.5 Results Summary | 72

6. **DISCUSSION** | 73

6.1 Organizational Context and Levels of Change | 73

6.2 Stages and Patterns of Change | 75

6.3 Relevance for Management | 75

7. **CONCLUSION** | 80
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 Limitations</td>
<td>81</td>
</tr>
<tr>
<td>7.2 Recommendations for Future Research</td>
<td>82</td>
</tr>
<tr>
<td><strong>BIBLIOGRAPHY</strong></td>
<td>84</td>
</tr>
<tr>
<td><strong>APPENDICES</strong></td>
<td>88</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1: National Forests in the Pacific Northwest</td>
<td>6</td>
</tr>
<tr>
<td>Figure 2: Willamette National Forest</td>
<td>8</td>
</tr>
<tr>
<td>Figure 3: Means and Processes of Change</td>
<td>17</td>
</tr>
<tr>
<td>Figure 4: Levels of Organizational Change</td>
<td>20</td>
</tr>
</tbody>
</table>
## LIST OF TABLES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 1: Resource Management Paradigms</td>
<td>3</td>
</tr>
<tr>
<td>Table 2: Contents of Organized Change</td>
<td>16</td>
</tr>
<tr>
<td>Table 3: Episodic vs. Continuous Change</td>
<td>22</td>
</tr>
<tr>
<td>Table 4: Primary Coding Levels</td>
<td>32</td>
</tr>
</tbody>
</table>
# LIST OF APPENDICES

<table>
<thead>
<tr>
<th>Appendix</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appendix A: Informed Consent</td>
<td>88</td>
</tr>
<tr>
<td>Appendix B: Interview Questions</td>
<td>93</td>
</tr>
<tr>
<td>Appendix C: Study Codebook</td>
<td>95</td>
</tr>
</tbody>
</table>
1. INTRODUCTION

Over the last several decades the United States Forest Service has seen major changes in the size and makeup of its staff (Cramer et al., 1993). Originally established in 1905 for the purpose of providing the nation with quality water and timber resources, the Forest Service is located within the Department of Agriculture and is responsible for managing approximately 193 million acres of lands, an area roughly the size of Texas. It employs nearly 30,000 people and is organized in the form of over 600 ranger districts, 150 national forests and grasslands, nine regions, and a national office located in Washington D.C.

Since its inception, the Forest Service has been an agency well known by the American public. In fact, it can be said that throughout much of U.S. history, people have relied upon the utilization of natural resources located on Forest Service lands for both economic and social livelihood. Moreover, as one of the country's largest and oldest land management agencies, the Forest Service has frequently been praised for its professionalism, efficiency, and effectiveness (Kaufman, 1960).

During the first half of the 20th century, the Forest Service enjoyed great success in implementing management policies centered on conservation era values of efficient, long-term, multiple-use development (Kaufman, 1960; Cramer et al., 1993). However, by the 1960’s and 1970’s, the passage of new environmental statutes such as the National Environmental Policy Act (NEPA),
Endangered Species Act (ESA), and National Forest Management Act (NFMA), signaled a shift in the natural resource values of Americans (Kennedy, 1985).

One consequence of this shift in public opinion about natural resources has been the emergence of a major split between citizens who view timber production as the Forest Service’s main priority and others who believe the preservation of ecological systems to be the overarching responsibility of the Forest Service (Bullis and Kennedy, 1991). Moreover, this rift in society has led, and continues to lead, to a number of contentious lawsuits that have been launched against U.S. land management agencies over the years. One such example is the Sweethome vs. Babbit case decided by the U.S. Supreme Court in 1995. In what has remained a substantially influential decision for land management agencies and natural resource extraction based communities, the court found that it is within the discretion of the Secretary of the Interior to define ESA “harm” as including adverse modification of critical habitat. Since harming an endangered species is precluded under the ESA, this decision has severely restricted many natural resource extraction activities, such as logging, that have traditionally helped to support many rural US communities, particularly within the Northwest (Eichmann et al., 2010).

In addition, it is clear that this split in ideals and conservation attitudes is not only prevalent among every day citizens, but exists within the Forest Service itself (Kennedy and Quigley, 1998; Cramer at al., 1993). Some scholars who have studied this Forest Service split posit that a new resource management paradigm within the Forest Service has emerged that stresses interdisciplinary collaboration and balanced resource use (Brown and Harris, 1992; 2000). They argue that while primarily external organizational change forces have fueled this—such as the
passage of NFMA and NEPA—in internal pressures from a more diversified workforce have also aided in bringing about change (Brown and Harris, 1992).

Other researchers have argued that Forest Service planning decisions are now more influenced by local coalitions than by bureaucratic controls from the Forest Service national office or Congress (Sabatier et al., 1995). Much of this they attribute to the involvement of the greater public, as required by NEPA, which in turn is thought to have led to an increase in communication across organizational boundaries for the Forest Service.

While a number of studies have utilized survey data at the aggregate level to demonstrate the longitudinal changes in Forest Service employee beliefs, very little in-depth work has been done within individual forests (Brown et al. 2010). Consequently, many of the nuanced organizational shifts that have occurred within prominent forests have gone undocumented. Furthermore, of the few case studies that do exist, most focus on agency performance issues such as morale and
effectiveness, and fail to properly investigate exactly what it is Forest Service employees believe has changed. This suggests a need for more in-depth research within individual forests to compliment previous studies.

For the reasons highlighted above, this study provides an inductive exploration of the perceived organizational changes that have occurred within one of the Forest Service’s largest, most productive forests—the Willamette National Forest. Specifically, semi-structured interviews with senior Willamette staff are used to examine what shifts these employees believe have come about over the last three decades. In addition, this study utilizes Mintzberg’s and Westley’s (1993) framework of organizational change to analyze the responses of these participants, and borrows from Kurt Lewin’s 3-step model of change to articulate the management implications of perceived changes. Several questions helped to guide this research:

1) What do senior Willamette National Forest employees perceive as being the major changes within the forest during their tenure?

2) How do employees believe the mission of the Willamette National Forest has evolved over the last three decades years?

3) In what ways have employees adapted to their changing work environment?

4) What similarities exist among Willamette employees regarding their perceptions of change?
To accomplish these research goals, the study first provides a background of the Willamette National Forest. A brief discussion of organization theory then follows, along with a more succinct description of organizational change. Because of the ambiguous nature of organizational change, the specific concepts of organizational institutions and culture are examined in depth. Following this, an explanation of Mintzberg’s and Westley’s framework, as well as Kurt Lewin’s intervention model, are outlined and discussed. Next, the methodology utilized by this study is described in detail and a discussion of the results is given. Lastly, management implications and the conclusion of this report are articulated, along with suggestions for future research.

2. BACKGROUND

2.1 Willamette National Forest
The Willamette National Forest, named after the Willamette River, was originally established as part of the Cascade Range Forest Reserve designated by President Grover Cleveland in 1893. It was not until 1933 however, that the forest became administratively organized as a National Forest. Today, the forest stretches for approximately 110 miles along the western slopes of the Cascade Range in western Oregon and is made up of 1,675,407 acres, about one-fifth of which is Congressionally designated as wilderness (Figure 1). In addition to containing seven of the major peaks in the Cascade range, the Willamette National Forest possesses over 1,500 miles of rivers and streams, 375 lakes, and is home to over 300 species of fish and wildlife, including the northern spotted owl and other sensitive or threatened species. Other important characteristics of
the forest include its glacially scoured topography and the fact that it contains over 15 species of conifers, many of which are commercially valuable.

Figure 1: National Forests in the Pacific Northwest

Source: U.S. Forest Service

Administratively, the Willamette National Forest is located within Region 6 of Forest Service, contains one supervisor’s office located in Springfield, and is divided into four ranger districts: (1) Sweet Home (2) McKenzie (3) Detroit (4) Middle Fork. According to Forest Service
officials, the forest currently employees approximately 300 permanent federal employees and provides seasonal employment to contractors throughout the year. This makes the forest one of the most heavily staffed in the nation, though at one time the forest contained nine districts and almost 1,000 employees.
As one of the largest and most productive forests in the country, the Willamette National Forest has played a major role in influencing federal timber management policies throughout its existence. Though much of its formative years were spent trying to establish relationships with local communities and forest users, the time period around WWII saw huge growth in the planning and harvesting of timber resources from the forest. This included four decades
following WWII that emphasized sustained yield of timber and suppression of forest fires (Franklin and Forman, 1987). By the late 1980s however, many people had become concerned about the effects of clear-cut harvesting on old-growth dependent wildlife species such as the northern spotted owl (Harris, 1984). Following this concern were a number of contentious lawsuits in the Willamette area that resulted in a court-ordered injunction against further harvest of northern spotted owl habitat. The result was a severe reduction in the amount of timber harvest at the Willamette (Cissel et al., 1999), which then led to a substantial decline in its overall budget.

In 1994, the controversy of the northern spotted owl culminated in the creation and adaptation of the Northwest Forest Plan (NWFP). As Thomas et al. (2006: 278) note, “More than anything else, the NWFP was driven by the need to meet the requirements of the Endangered Species Act of 1973 and the “viability clause” of the USFS regulations issued pursuant to the National Forest Management Act of 1976.” The NWFP, which shifts the overarching objective of these lands from domestic timber supply to the protection of biodiversity, focuses on species associated with late successional forests and aquatic systems, and has resulted in an 80% projected reduction in timber harvest levels (Molina et al. 2006). Specific requirements of the plan include maintaining an interim riparian buffer of two site-potential tree lengths or 300 feet (whichever is larger) on both sides of fish-bearing streams, one site-potential tree length or 150 feet (whichever is greater) on both sides for non-fish bearing stream (USDA Forest Service and USDI Bureau of Land Management 1994), and providing for a survey and manage program, whose purpose is to
deal with species that are not fully accounted for or understood by federal landowners because of a lack of scientific data.

Overall, the impacts of the NWFP and other environmental statutes on the Willamette National Forest and its surrounding local communities have been the subject of countless debate and litigation. While some researchers maintain that federal conservation protection produces amenities that support job growth and attracts migrants (Power, 2006; Niemi et al., 1999; Power and Barrett, 2001; Charnley, 2006), others argue that this protection reduces commodity production and thus reduces local employment and increases out migration (Eichman et al. 2010). One thing that remains certain, however, is that the Willamette National Forest and its staff have been challenged to adapt to these shifts in policy over the last three decades.

3. LITERATURE REVIEW

3.1 Organization Theory

Theories are statements that convey connectivity among concepts (Greenwald et al. 1986). They rest on a set of assumptions and from these assumptions make a series of interrelated and logical claims. Organization theory attempts to explain different aspects of organizations. Yet, because an organization can be defined in a number of different ways, organization theory is a field of study that is both broad and draws from a variety of disciplines (Pfeffer, 1993). Simply put, it cannot be thought of as a theory that supposes a single overarching truth about organizations. This makes the task of explaining the phenomena and characteristics within organizations difficult.
Despite this, scholars have offered useful ways in which to look at organizational theory. One of the most well established approaches is provided by Hatch (1997), who differentiates between three perspectives of organization theory: 1) Modernist 2) Symbolic-Interpretive 3) Postmodern. Whereas modernists tend to rely upon statistical methods and believe in “objective” measures—symbolic-interpretive followers place value on “subjective” perceptions and champion methods such as ethnographic viewing and participant observation. Postmodern theorists on the other hand, are distinct in that they often utilize deconstruction – or critique of established authority - as a method for analysis and focus on theorizing practices. Put another way, postmodern theory is unique in its rejection of authority in all guises.

Within these three perspectives are several ways to divide and study organization theory. One of the more prominent is by defining organizations as part of an environment, technology, social structure, or culture. Another is by examining them in terms of the “central issues and recurring themes of organizing including control, conflict, decision making, power and politics, and change” (Hatch, 1997: 9). For the reasons mentioned earlier, it is the phenomenon of change that this study endeavors to explore. Nonetheless, as the literature makes clear, the topic of organizational change is anything but narrow and simplistic (Smith and Graetz, 2011). Rather, it is as Collins (2003: 5) notes, “a fuzzy, deeply ambiguous process.”

3.2 Organization Change
It has been said that organizational change is the domain of the entire discipline of organizational
development and that descriptions of it vary with the level of analysis (Hatch 1997; Weick and
Quinn, 1999). As Huber et al. (1993: 216) point out, concerning organizations, change involves
differences, “…in how an organization functions, who its members and leaders are, what form it
takes, or how it allocates its resources.” Nonetheless, a few select scholars have offered
comprehensive frameworks for assessing and analyzing organization change, including one
developed by Mintzberg and Westley (1992). However, before moving on to a description of
this framework, it is first necessary that the ambiguous topic of organizational culture be
illuminated. In doing this, it will be easier to understand Mintzberg’s and Westley’s framework
for organizational change and their differentiation between conceptual changes and concrete
changes.

3.2 Organizational Culture

The concept of organizational culture presents a dilemma because it lies at the intersection of
several social sciences, each with its own definitions and characterizations of culture making the
concept of culture itself ambiguous (Williams, 1973). In fact, one can readily argue that culture
is the most difficult of all organizational concepts to define. Yet, despite this ambiguity, scholars
have legitimized the topic of culture within organizational studies and have shown that concepts
such as beliefs, ideology, language, ritual, and myth can be applied in the study of organizations
(Alvesson and Berg, 1992). As a result, a variety of theories exist to operationalize and analyze
culture as it pertains to groups.
One way in which organizational researchers have sought to distinguish between approaches to culture is by concentrating on culture as something an organization has versus something an organization is (Smircich, 1983). From the former perspective, researchers tend to focus on the characteristics of organizations that are different and thus differentiate them from one another (Schneider et al., 2012). This approach often leads to comparative studies between various organizations. The latter perspective centers on the goal of description and frequently utilizes inductive case study research (Ashkanasay et al., 2000). Simply put, there is no consensus as to what culture is, nor have scholars universally agreed upon the way in which culture should be studied. As Schneider et al. (2012: 10) point out, “For every definition of what culture is, there is an important contradictory view”.

Concerning the issue of levels in organizational culture research, Schneider et al. (2012) note that scholars have remained particularly concerned with the extent to which facets of culture are readily observable. While a certain amount of debate still exists among researchers, the most recognizable and influential framework on levels of organizational culture is undoubtedly that developed by Schein (2010). According to Schein, culture can be thought of as “(a) a pattern of basic assumptions, (b) invented, discovered, or developed by a given group, (c) as it learns to cope with its problems of external adaptation and internal integration, (d) that has worked well enough to be considered valid and, therefore (e) is to be taught to new members as the (f) correct way to perceive, think, and feel in relation to those problems” (1990: 111). Furthermore, Schein argues that three levels exist at which culture reveals itself: (a) basic underlying assumptions, (b)
values, and (c) observable artifacts (1990). Of these levels, it is a group’s beliefs and assumptions that are said to make up the core of an organization's culture.

Assumptions are believed to characterize what members consider to be reality and as a result affect what these members take in and feel. These underlying assumptions are for the most part subconscious and have the capacity to steer the perceptions and actions of group members. Schein maintains that these core assumptions find their way into a variety of facets of organizations and can be grouped into two categories: (1) external adaptation and (2) internal integration (Hatch, 1997). He further claims that norms, values, and artifacts, insofar as they relate to culture, most heavily influence these core assumptions (Schein, 1996).

Values can be thought of as moral and ethical codes. They are the social beliefs, aspirations, and benchmarks believed to possess inner worth. Because they are used in making moral judgments and decisions, they are often more conscious than basic assumptions (Hatch, 1997). Unlike values, norms establish the type of behavior that is expected within a specific culture rather than dictating what is important (Ott, 1989).

Artifacts include a variety of things such as the physical reports of an organization or the emotional connections among members. In other words, they are the visible, tangible, and audible remains of behavior grounded in cultural norms, values, and assumptions (Gagliardi, 1990), and are observed and felt immediately by individuals who enter an organization. However, because of the nature of artifacts, it is often difficult to interpret them correctly since
we are unaware of how they connect to underlying assumptions (Pondy et al., 1988; Wilkins, 1983).

Because of the nature of these characteristics of culture, researchers often use techniques such as interviews, questionnaires, and survey instruments. Open-ended interviews provide a particularly useful means of getting at how people feel because they are less prone to prejudge the dimensions to be studied (Schein, 1990). By making known the underlying assumptions of an organization, techniques such as open-ended interviews, allow researchers to better understand the contradiction and ambiguity of many cultures (Martin and Meyerson, 1988). Two prime examples of this type of research are the previously mentioned works of Brown and Harris (1992; 2000) and Brown et al. (2009) who utilized longitudinal survey research to reveal the emergence of a new resource management paradigm within the Forest Service. It is largely for this reason that this study chooses to utilize the methodology described later.

3.4 A Framework for Organizational Change

Built on various cycles: “concentric to represent the contents and levels of change, circumferential to represent the means and process of change, tangential to represent the episodes and stages of change, and spiraling to represent the sequences and patterns of change” Mintzberg’s and Westley’s framework stresses the need to make organizational context very clear in organization change studies (Mintzberg and Westley, 1993: 39). For example, in describing the concentric portion of their framework, the authors argue that change can take place from the broadest, most conceptual level—say culture—to the narrowest and most concrete—say facilities and people. Not surprisingly, changes at the conceptual level tend to be
more strategic than those at the more concrete level, and are often the hardest to analyze. As discussed earlier, this level of change has been the purview of many scholars, most notably Edgar Schein (1985).

In addition, Mintzberg and Westley claim that change appears to occur in two spheres: one pertaining to organization—or basic state—and another pertaining to strategy—or directional thrust (Table 2). Of particular concern to the authors are the ways in which these contents and levels of change interact with one another. “To try and change culture without changing vision (or vice versa) would seem to make little sense, but people can certainly be changed without changing facilities (and vice versa)” (Mintzberg and Westley, 1993: 40). The case is similar when analyzing up and down the two dimensions. While one may be able to change an organization’s structure and systems without changing its culture, it is unlikely for the opposite to hold true.

Table 2: Contents of Organized Change

<table>
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<th>Change in organization (state)</th>
<th>Change in strategy (direction)</th>
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<tr>
<td>more conceptual (thought)</td>
<td>culture</td>
<td>vision</td>
</tr>
<tr>
<td></td>
<td>structure</td>
<td>positions</td>
</tr>
<tr>
<td>more concrete (action)</td>
<td>systems</td>
<td>programs</td>
</tr>
<tr>
<td></td>
<td>people</td>
<td>facilities</td>
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An implication of this is that change in an organization tends to be revolutionary, piecemeal, focused, isolated, or incremental (Figure 3). While piecemeal change rearranges elements independently, isolated change tends to be very specific. On the other hand, revolutionary change is one that is all encompassing, whereas focused change can be encompassing at different levels. Likewise, the latter two changes can at times, be considered incremental, or slowly occurring changes.

![Means Processes of Change](image)

Figure 3: Means Processes of Change

The next layer of Mintzberg’s and Westley’s framework is their circumferential cycles, or means and processes of change. Importantly, the authors note that change in an organization can be directed or brought about by a number of different things, including actors, teams (Mintzberg and Waters, 1985), and external sources or events. The significance of external impacts on
organizations cannot be stressed enough, particularly when analyzing changes in the Forest Service—an organization that, as was noted earlier—has been forced to deal with numerous external events. Moreover, as Greening and Hinings (1996: 1022) point out, “The ability to cope with often dramatically altering contextual forces has become a key determinant of competitive advantage and organizational survival.”

Mintzberg and Westley further claim that it is useful to reduce the various approaches to organization change to three: procedural planning, visionary leadership, and inductive learning (Mintzberg, 1973; 1989). In practice, these approaches are often combined—the first being a more formal and deductive type of change—the latter two being informal and often unexpected. As the authors note, “What this suggests is that a full process of change (at any level) proceeds through the steps of conceiving the change (learning), shifting the mindset (vision), and programming (where necessary) the consequences (planning) (Mintzberg and Westley 1992: 3).

The third level of Mintzberg’s and Westley’s framework consists of tangential cycles, or episodes and stages of change. This level rests on the premise that organizations are always changing, and that as a result, it is important to understand that change typically takes the form of episodes. These shifts can be precipitated by changes in the external or internal context of an organization, and divided into five distinct stages: 1) development, 2) stability, 3) adaptation, 4) struggle, and 5) revolution. In the case of episodic changes, such as those within the Forest Service, change tends to occur when adaptation begins to lag (Weick and Quinn, 1999).
1. *Development* is the period when an organization is building itself up and is characterized by continuous change, such as the hiring of people and the establishment of systems and programs.

2. *Stability* is considered a relative term and is the time during which an organization’s broad aspects, such as culture and vision, are for the most part set. It should be noted that concrete aspects of the organization could still be undergoing marginal changes during this stage.

3. *Adaptation* is similar to stability in that changes across levels are still occurring. The main difference is that marginal changes occurring at the concrete levels may be influencing more conceptual levels. In other words, the organization is adapting to its situation at this stage.

4. *Struggle* is a period during which an organization has lost its sense of direction and is still attempting to create a new one. This period can be made up of either perceptual or actual change. Moreover, struggle periods tend to be ones of confrontation, experimentation, and delay.

5. *Revolution* describes the time when numerous elements in an organization are all shifting at once, from the most conceptual to the most concrete. This stage can either be sudden, or can take place over a period of several years.
Lastly, Mintzberg’s and Westley’s framework of organizational change concludes with a layer consisting of spiraling cycles, or sequences and patterns of change. They note that in their research on strategy formation, they have found a number of different patterns of change, including periodic bumps, oscillating shifts, life cycles, and regular progress. While this level of change is generally less developed in the literature, some scholars have nonetheless augmented Mintzberg’s and Westley’s ideas over the years. An example of this augmentation is a review of organization change carried out by Weick and Quinn (1999), who argue that analyzing the tempo of change is also a useful way of dividing organizational change literature. In their article, the authors differentiate between what they believe to be episodic change and continuous change, and note that while episodic organization changes tend to be rare, sporadic, and planned,
continuous changes are usually ongoing, evolving, and cumulative (Weick and Quinn, 1999). Many organizations tend to exhibit a combination of these two forms of change; in the case of the Forest Service it is reasonable to argue that the organization falls predominately within the category of episodic change. This assumption is supported by the previously mentioned stability of the Forest Service throughout the beginning of its history and the sudden changes it was forced to deal with starting in the 1970s and continuing through the 1990s.
Table 3: Episodic vs Continuous Change

<table>
<thead>
<tr>
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<th>Episodic change</th>
<th>Continuous change</th>
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<tr>
<td><strong>Metaphor of organization</strong></td>
<td>Organizations are inertial and change is infrequent, discontinuous, intentional.</td>
<td>Organizations are emergent and self-organizing, and change is constant, evolving, cumulative.</td>
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<td><strong>Analytic framework</strong></td>
<td>Change is an occasional interruption or divergence from equilibrium. It tends to be dramatic and it is driven externally. It is seen as a failure of the organization to adapt its deep structure to a changing environment.</td>
<td>Change is a pattern of endless modifications in work processes and social practice. It is driven by organizational instability and alert reactions to daily contingencies. Numerous small accommodations cumulate and amplify.</td>
</tr>
<tr>
<td>Key concepts: inertia, deep structure of interrelated parts, triggering, replacement and substitution, discontinuity, revolution.</td>
<td>Key concepts: recurrent interactions, shifting task authority, response repertoires, emergent patterns, improvisation, translation, learning.</td>
<td></td>
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<tr>
<td><strong>Ideal organization</strong></td>
<td>The ideal organization is capable of continuous adaptation.</td>
<td>The ideal organization is capable of continuous adaptation.</td>
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<tr>
<td><strong>Intervention theory</strong></td>
<td>The necessary change is created by intention. Change is Lewinian: inertial, linear, progressive, goal seeking, motivated by disequilibrium, and requires outsider intervention.</td>
<td>The change is a redirection of what is already under way. Change is Confucian: cyclical, processional, without an end state, equilibrium seeking, eternal.</td>
</tr>
<tr>
<td>2. Transition: cognitive restructuring, semantic redefinition, conceptual enlargement, new standards of judgment.</td>
<td>2. Rebalance: reinterpret, relabel, resequence the patterns to reduce blocks. Use logic of attraction.</td>
<td></td>
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<tr>
<td>3. Refreeze: create supportive social norms, make change congruent with personality.</td>
<td>3. Unfreeze: resume improvisation, translation, and learning in ways that are more mindful.</td>
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3.5 Change Intervention: Kurt Lewin’s Three-Step Model

Over the last 50 years, Kurt Lewin has been instrumental in helping to shape both the practice and theory of change management. However, despite the impressive breadth of Lewin’s work, it is his three-step intervention model of organizational change that is frequently cited as his pivotal contribution to the field. While some scholars have argued that this planned approach to change is overly simplistic and inappropriately linear in nature (Dawson, 1994; Garvin 1993; Kanter et al., 1992; Wilson 1992), others have argued that Lewin’s model is as complex and iterative as any to date (Burnes, 2004; Kippenberger, 1998).

According to Lewin (1947), a successful change project consisted of three steps:

1. Stage 1: Unfreezing. Because Lewin believed the stability of human organizations was based on competing driving and restraining forces, he posited that the equilibrium of a group must first be unfrozen before old practices and behavior could be discarded and new behavior adopted. This step, Lewin argued, could be accomplished more easily if restraining forces such as personal defenses, group norms, or organizational culture were unfrozen (Weick and Quinn, 1999).

Expanding upon this idea, Schein (1996) describes three series of actions requisite to bringing about unfreezing: disconfirmation, the induction of guilt or survival anxiety, and the creation of psychological safety or overcoming of learning anxiety. Schein argues that when members of an organization feel protected from harm and embarrassment it is unlikely that survival anxiety will be felt and change will occur.
2. **Stage 2: Moving.** Lewin understood that without reinforcement, change could often be ephemeral. Moreover, he felt that one should attempt to recognize and analyze all of the forces at work within an organization and then evaluate them on an *ad hoc* basis. As a result, the second stage of Lewin’s model describes what takes place within an organization after people have bought into the need for change. This is the point at which evaluating the old system and building the new system begins (Levasseur, 2001).

3. **Stage 3: Freezing.** This is the last step in the three-step model. Freezing attempts to stabilize the organization by establishing new behaviors and preventing members from falling back into old habits. Most importantly, this stage often requires changes in organizational culture, norms, policies, and practices (Cummings and Worley, 2009) in order for it to be successful and avoid a new round of disconfirmation (Schein, 1996).

It is important to understand that Lewin’s three-step model is seen as one of four mutually-reinforcing concepts—Field Theory, Group Dynamics, and Action Research—that Lewin used to develop his planned approach to change (Burnes, 2004). Thus, while the three-step model described above provides a useful guide for managing change within an organization, it should not be seen as a separate entity from Lewin’s other major research, nor should it be viewed as his only contribution to the field of organizational studies.

4. **METHODS**
This study employed a flexible design approach that was informed largely by qualitative data gathered through individual interviews with long time employees of the Willamette National Forest. Interview data were augmented by a robust review of the literature concerning organization culture and changes, and an examination of the major shifts federal forests have undergone since the 1980’s. Further description of the methods used to collect and evaluate the relevant qualitative data is provided below.

4.1 Sample Population

The aim of this study was to document and analyze the perceived organizational changes and adaptations that have occurred at the Willamette National Forest over the course of the last three decades. To accomplish this it was critical to interview individual employees who have extensive experience working at the Forest. Moreover, interviewees were selected from a variety of departments and from each of the Forest’s four ranger districts, as well as its supervisor’s office. Participants were not excluded for any demographic, social, or economic reasons, however, most were individuals who had been working at the forest for twenty years or longer.

4.2 Participants

Participants for this study were selected using a non-probability purposive sampling technique referred to as snowball sampling. When the intention of a study is to provide information about a specific population rather than to make generalizations outside the population, non-probability sampling is considered an acceptable technique (Bernard, 2006). Purposive sampling works particularly well where the researcher already knows something about the specific people or events chosen and their relevance to the topic of investigation (Denscombe, 2010). The intention
of this study was to investigate and assess employees’ perceived shifts over the last thirty years at the Willamette National Forest. Moreover, this study sought to examine the ways in which forest personnel have adapted to these changes. Consequently, non-probability purposive sampling was considered a valid and appropriate means for choosing participants.

Snowball sampling is perhaps the most commonly used survey technique throughout social science research (Noy, 2008). The informal term snowball sampling has likely been used for an extensive period of time with Coleman (1958) being the primary reference for the meaning of snowball sampling (Handcock and Gile, 2011). Utilizing snowball sampling provides researchers with the advantage of being able to access hidden or other difficult to reach populations (Brown, 2005; Bernard, 2006). This technique is applied by selecting and contacting, one or more key informants in the population of interest. After interviewing these individuals the researcher then asks the respondent to identify and provide the contact information of other candidates they believe would help inform the study. This process is continued until finally a point of saturation is reached in which the researcher believes they can no longer gain significant data (Robson, 2002).

The main point of entry used for acquiring access to possible participants for this study was a long-standing employee of the forest known by the principle investigator. This individual, upon being interviewed, provided a list of names of interviewees they felt were appropriate and could contribute to this research. These people were then contacted by the researcher and asked if they were interested in participating in this study. Those who agreed to be included were later interviewed at their convenience and asked to provide a list of other employees they felt might be
interested in and of value to this study. This process continued until finally the researcher felt that saturation in responses had been reached. In the case of this study, saturation was believed to be reached at ten participants.

Because of the limited sample of employees who had been working at the forest for an extended period of time, interviewees frequently recommended the same individuals to be interviewed. Participants in this study included both male and female staff members from a variety of forest departments including fire, timber, biology, administration, and others. Despite these differences, a certain degree of homogeneity among the interviewees can be assumed since by definition, participants in purposive samples are chosen based upon some common criteria (Guest et al., 2006).

As was noted earlier, the idea that a number of interviews can be predetermined is usually discouraged when conducting flexible design research. The reasoning for this is that it is often difficult to know ahead of time the amount of data that will be needed to gain insight into the topic of inquiry (Graves, 2002). To alleviate this issue, many researchers advocate for an inductive approach, where people are interviewed until they reach a point of “saturation” (Sandelowski, 1995; Bluff, 1997; Byrne, 2001; Fossey et al., 2002). Saturation is considered to be the point at which further interviews no longer add information to what has already been learned (Robson, 2002). Ryan and Bernard (2004) argue that the time and manner in which saturation is reached depends on several factors including the amount and complexity of the data, investigator experience and fatigue, and the amount of researchers combing through the data (Guest et al., 2006).
4.3 Interviews

Interviewing is a technique often used in social science research, as it affords investigators the opportunity to gain plentiful in-depth data, and probe deep into matters of inquiry (Robson, 2002). While there are concerns about the reliability and potential bias of interviews, their value and role in contributing to the advancement of science are well established (Bernard, 2011). Moreover, these potential problems can be minimized by precautions taken by the researcher (Robson, 2002). Specifically, this study utilized semi-structured interviews, which involve the researcher asking a series of predetermined questions, but still afford the researcher the ability and discretion to follow leads.

Bernard (2011) maintains that semi-structured interviews are often appropriate in situations where a researcher only has only once chance to interview someone. In addition, King (1994) recommends that semi-structured interviews be used when investigating people’s perceptions of phenomena and how those phenomena have developed. Because all of these characteristics were present in this study, semi-structured interviews were chosen as the primary means of data collection.

Each interview in this study was conducted at the respondent’s place of work and began with the researcher explaining the project and what it meant to participate (i.e., informed consent). After each had announced that they understood the project, the researcher then informed the interviewee that the interview would be audio recorded if they chose to participate in the study.
Once the interviewee acknowledged these explanations the researcher obtained their signature, indicating their willingness to be interviewed and recorded during the interview. The average length of interviews was approximately 40 minutes.

Formal questioning of the interview process began with the researcher first asking the participant to explain their position and role at the forest. When needed, the researcher used probing questions to better ascertain the details of the respondent’s work responsibilities. This method of probing was utilized as necessary throughout the interview. Overall, interview questions tended to be asked in the same order, except in cases where the participant responded in such ways as to warrant a rearrangement of the questioning.

4.4 Questions

Interviews centered primarily on five questions that sought to evaluate employee’s perceptions as to the organizational changes that have occurred at the Willamette National Forest over the last three decades.

The first core question asked interviewees, “Could you describe your role and position here at the Willamette National Forest?” This question was asked as a means of better understanding the person’s experience at the forest and assessing their ability to speak about change at the forest over lengthy periods of time. After receiving an answer to this question the researcher found that interviewees became more at ease with the interview process, thus making it easier to establish a rapport.
The second core question asked participants “What are some of the major changes that you have noticed at the Willamette National Forest during your time?” Because of the broad nature of this question, participants were often asked to describe in further detail some of these changes so that the researcher could explore their nuanced responses.

Third, participants were asked, “How have you and other Willamette National Forest Service Staff adapted to the changes you identified?” This question was usually followed up with probing questions that allowed the interviewee to give more in-depth answers about the challenges faced by employees and the ways in which they dealt and may be still be dealing with changes.

The fourth question was used as a means of gauging how the forest and its employees interact with outside organizations. It asked participants “What kinds of changes have you seen concerning the way in which the forest interacts with other organizations?” Quite often interviewees’ answers included descriptions about not only the changes in interactions with other organizations, but changes in the relationship with surrounding local communities as well.

The fifth and final question asked interviewees “How do you think the current mission of the Willamette Forest is likely to change in the future?” Moreover, this question helped to clarify how the participant believed the mission has changed over the last thirty years and is likely to change, or not change, in the future.

4.5 Recording
Interviews were recorded in two ways. The principal method involved using a Sony ICD-PX312D digital voice recorder, while the second consisted of the researcher taking hand written notes throughout the interview process. After the interview had been completed, the researcher would often elaborate upon the notes, adding observations and comments to clarify questions and responses.

4.6 Transcription

Once interviews had been recorded they were promptly uploaded to a secure laptop computer. Following the completion of all the interviews, the content was transcribed using the software program NVivo 9, which offers the benefit of both text and audio synchronization. For the purpose of preserving anonymity, each interviewee was assigned a unique identifier throughout the transcription process. In total, over eight hours of audio recording was uploaded and transcribed for analysis. Furthermore, at the end of this process over 70 pages of single-spced, 11 font-sized text, were transcribed.

4.7 Coding

After interviews were transcribed they were then coded and analyzed. This involved dividing material into portions of data that represented varying themes and ideas discussed by the study participants. Working from the established literature on organization theory, this paper developed four primary levels of code, which then allowed for more in-depth content analysis. The result of this process was the creation of secondary code levels, fourteen tertiary codes, and thirty quartile codes (Table 4).
Table 4: Primary Level Codes

<table>
<thead>
<tr>
<th>Primary</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture and Vision</td>
<td>Comments addressing culture and vision, including changes in identity, department and district relationships, career advancement and turnover, and interactions with surrounding communities.</td>
</tr>
<tr>
<td>Structure in the agency</td>
<td>Comments concerning changes in the organization’s structure regarding decision-making, including district consolidation and centralization.</td>
</tr>
<tr>
<td>Systems, procedures, and programs</td>
<td>Comments dealing with changes in systems, procedures, and programs, including funding sources, relationships with external partners, department strategies, and required trainings.</td>
</tr>
<tr>
<td>People, jobs, and facilities in the agency</td>
<td>Comments dealing with changes in people and facilities, including staff size, position specialties, employee demographics, technology and related skills, and infrastructure.</td>
</tr>
</tbody>
</table>

5. RESULTS

This section describes and discusses the analysis of interviews with the participants of this study, namely, senior employees at the Willamette National Forest. The units of analysis in this section are the individual comments provided by the interviewees. Results are discussed based on primary level codes structured around the theoretical framework described earlier and highlighted below. Primary sections include: culture and vision of the forest, changes in agency structure, changes in systems, procedures, and programs of the forest, and changes in the people, jobs, and facilities of the forest. Each participant is provided with a label to protect his or her identity and no label is used for more than one individual.

5.1 Changes in Culture and Vision
The most conceptual changes at the Willamette National Forest consisted of ideas regarding alterations in the culture and vision of the organization. More specifically, interviewee responses fell within the following four categories of cultural and vision change: changes in identity, department and district relationships, career advancement and turnover, and the Forest’s interactions with surrounding communities. In addition, these categories were broken into more nuanced descriptions, each of which is discussed below.

**Identity**

Comments about changes in identity refer both to an employee’s idea that, “Timber was King” (implying that timber no longer dominates the forest’s identity), and the resulting confusion that has brought regarding the Forest’s mission. For most individuals, these two changes are at the center of what they believe have been a series of dramatic changes at the forest over the last three decades. This is evident by the frequency in which the phrase “Timber was King” and the word “confusion” are found in the transcripts of individuals’ interviews.
Many participants noted how the mission at the Forest had been much clearer during the 1980’s—that it was a “get the cut out” and “harvest as much timber as was sustainably possible”. For example, one interviewee pointed out:

We were very production oriented as a group. We had a clear mission. We were going to lay out a 100 million board feet every year. We knew what we were supposed to do and we knew how we were supposed to do it. (Interviewee, 6)

Another interviewee commented:

Just the whole organizational purpose at that time at this Forest was really timber centered. It was extremely timber centered and it’s not so much anymore. It was—get the cut out. (Interviewee, 10)

Much of this changed, however, when species such as the northern spotted owl and marbled murrelet became listed under the ESA, and timber harvests began to shrink. In 1994, requirements of the ESA listings culminated in the passage of the NWFPA, which significantly altered the management obligations of the Willamette National Forest. Instead of being viewed as a forest whose primary duty was to harvest timber, the Willamette was charged with the tasks of providing and maintaining healthy habitats for a variety of endangered and threatened species. Nearly every single interviewee commented on this sudden shift in identity.
Yeah, we were known for it. The forest supervisor was lauded for it and yeah, I think we’re—this is one of the places where we’re changing. We’re trying to figure out what our identity is now in the age of spotted owl and 72 million board feet or whatever it is.” 
(Interviewee, 8)

So, I think we’re still, on the Willamette, transitioning to figure out who we are and what our future organization needs to look like. (Interviewee, 2)

I think we are still in a tailspin for lack of mission. And everybody thinks they know what the mission is but we don’t have anything that we can say, well here’s the mission, all of us have this mission, let’s understand this mission and go do this. (Interviewee, 9)

In summation, responses reveal that the identity of the Forest has changed tremendously over the course of the last three decades. What once was a Forest dominated by sustainable yield of timber practices is now a Forest with multiple mandates, many of which involve the protection and restoration of wildlife species and their habitats. This change has brought about great confusion among Willamette staff about what their current identity is and what it might be in the years to follow.

Employee relationships
Comments about changes in employee relationships involve increases in district and departmental collaboration, decreases in social interactions among employees, and a reduction in
face-to-face contact at work. In general, participants’ comments suggest that while employees tend to collaborate more within the Forest, there is nonetheless, less face-to-face interaction among employees both outside of work in social settings, and at the workplace.

*Increase in District and Departmental Collaboration*

The majority of accounts painted a picture of an organization whose districts traditionally competed for resources with one another and whose departments were often operated as their own individual entities. Yet participants’ comments also indicated that over time, this insular and competitive nature has changed—such that today the Forest exhibits greater amounts of collaboration—both among departments and districts. This is demonstrated in comments from several employees:

Back then they [different districts] very much were fiefs and they competed pretty heavily with each other. There wasn’t any real animosity *per se*, other than in terms of competing for money and in terms of distributing the bucket of bills and target and stuff like that. But yeah, it was definitely a little more adversarial but certainly more insular. The units really didn’t spend a lot of time talking to each other unless there was something on the boundary that required them to cooperate. There was some of that but not a lot, but there’s a lot more now. (Interviewee, 4)

We worked better across the district lines than we did before. We were pretty well siloed when you have that much work to do. People did not want to exchange ideas because we were not going to take the extra time to do that. (Interviewee, 9)
I think there’s probably even more collaboration than there was when I first came here—just because we have more people to talk to. I guess it kind of goes back to how the specialists, when they first came in, kind of saw themselves as a regulatory force as opposed to a team member. And that latter situation is more of what we see now. I think we have a lot of face-to-face communication now. (Interviewee, 3)

In addition, a number of interviewees’ comments centered on how the relationship between natural science specialists and the forest operations staff has evolved over the years. It appears that in the beginning the relationship between these two departments was one of hostility and uncertainty. Over the years though, this relationship has become much more amicable, with greater emphasis being placed on collaboration. As one interviewee put it:

> During the 80’s the biologists that were brought on—late 80’s—most of them were called combat biologists, because they were coming in and just fighting all the time.”

(Interviewee, 1)

Other comments demonstrating this change in relationship include:

When we started getting the specialists coming in, the specialists looked at themselves at that time as putting on the brakes, being the regulatory person and there wasn’t a very good relationship. Now that’s changed to the point that it’s very collaborative. I have to work with the botanists and wildlife biologists to develop a project that everybody can be comfortable with and that will work for the public too—they’ll understand why we need
to do this and realize the biologist thinks it’s a good idea just as well as the forest does. And that’s been a fairly recent development. I’d say in the last ten years. (Interviewee, 3)

Yeah, it was—there was definitely a tension between natural resources, wildlife and timber that you could sense. (Interviewee, 7)

And we hardly talked to the timber people the timber people and we were like—[puts knuckles together]. So yes, my working relationships with the other resources are much better. In the old days we didn’t need to work together so much. Now we need to work together. (Interviewee, 8)

Decline in Social Interactions

Another important, albeit less stressed aspect of employee relationships, was comments dealing with the amount of social interaction among employees outside of work. Overall, it appears that senior employees believe that over the years there has been a decline in the number of informal social gatherings that occur off duty. While some attribute this to generational differences among staff, others believe it could be a product of people wanting to separate their work lives from their personal lives. For example, one interviewee pointed out:

It didn’t used to be so much that way. I think it’s much more that these days where people want to put in their hours and go home and not be a forest service employee anymore. (Interviewee, 1)
Still, others believe that it is simply a product of a geographical change in where employees live, the number of people working for the Forest, and the decline in the number of seasonal positions the Forest offers. The following comments help to illuminate this overall perceived change:

Yes, and I’ll also say that back in the day we did used to go out after work and socialize and your kids all went to the same schools so you went to the ballgames and open houses and picnics. (Interviewee, 2)

I will say there’s a shift as far as in the 80’s and 90’s—the parties or meetings at houses after work was—there was a lot of that. Now there isn’t outside of work. Everybody’s busy—they live away. (Interviewee, 6)

In the early 90’s-mid 90’s I do recall a much more active social interaction outside of work with folks—particularly if they were working with natural resources—not exclusively though. It just seems like there were just more opportunities for folks to get together in larger groups than currently. (Interviewee, 7)

*Less Face-To-Face Contact at Work*

Several participants described what they believe has been a decline in face-to-face contact at the Forest since they first came on the workforce. Most notably, interviewees spoke about the effects that technology has had on their communication, including, email, i-phones, and digital trainings.
There’s definitely less face-to-face contact with the whole total working thing. I think that there are people that I used to see on a daily basis and used to have a much better relationship with. I regret some of the—a lot of the computer people just work from home and I think that it’s stifled our relationships. (Interviewee, 8)

I think the other piece of that now, is we communicate so much through electronic communication that it’s very easy for people to go to work and never talk to anyone all day long, and it didn’t used to be that way. We used to have meetings in the hallway where we’d say, oh we need to talk about this, and we’d grab somebody and have an impromptu discussion about work. Now what happens is 20 emails go back and forth. (Interviewee, 2)

**Surrounding Communities**

One common issue that emerged as individuals discussed what they perceived to be major changes in the identity and culture of their Forest was a change in how the Forest interacts with surrounding communities. Whereas the Forest’s timber operations used to provide numerous jobs for local citizens, directly and indirectly, today these same communities are struggling to live without forest jobs and transition to different kinds of economies. As one participant put it:

Yeah, there used to be a lot more work available because of the cut, for local loggers, which has depleted significantly. There used to be half a dozen local loggers on the river that would benefit from the cut, but now there’s a couple. And they’re not benefitting as much as they used to. (Interviewee, 5)
Likewise, the topic of where Forest Service employees are now choosing to live was also brought up and discussed by interviewees in detail. In fact, each interviewee who brought up this issue spoke about how Forest Service employees used to live in smaller local communities, such as Middle Fork and Oak Ridge, in much greater numbers. Nowadays, it appears that many Forest Service employees are commuting from larger communities, including, Eugene, Corvallis, and Springfield. A number of interviewees attributed this change to the conveniences afforded to staff, and their families, by these more populated towns. According to one interviewee:

The communities are experiencing a little less of us. I see that our rangers live in town here. They don’t live up river. And this isn’t all of them, but some. And so they aren’t necessarily engaged in their communities anymore. They may be more engaged in their communities in the larger cities. I don’t know whether that’s good, bad, or indifferent, it’s just different. (Interviewee, 8)

Other comments that demonstrate this transition in employee residence include:

The majority of people that worked there lived in those communities. So they knew each other through their kids and through other activities. They were neighbors—they were all up there together. And I think that made people much more collegial—made much more of a family sort of an atmosphere. As we downsized and only got one district and continue to downsize—the majority of people that work up at the McKenzie River ranger district now live in Springfield or Eugene and they commute up to McKenzie Bridge. So
they aren’t interacting in these local opportunities, they’re all over Springfield and Eugene. And so that family kind of feeling I think has really diminished because, somewhat because of that. (Interviewee, 1)

Now we only employ a third of that—and I think this is kind of an interesting change—a pretty good majority of people that work in this office now do not live in this community. I think it’s been to the detriment of the community. (Interviewee, 3)

They get a lot of lip service from the Forest Service and you know, we’re here, we care, and you invited everybody to provide input to projects and stuff—but it’s clear that there’s a different attitude between the community and the agency when folks just don’t particularly choose to live up here anymore. (Interviewee, 7)

**Career Advancement and Turnover**

The last aspect of cultural change discussed by many of the interviewees was the topic of career advancement and employee turnover. Interestingly enough, this area of discussion was one of the more confusing and uncertain aspects of cultural change to respondents. While the majority of participants seemed to think that younger employees were changing jobs more frequently, they also felt that in the past, people were forced to move from forest to forest if they wanted to advance in their careers. Much of this can be explained by the fact that each respondent has been working at the Forest for over twenty years. It appears that the participants perceive that the people filling vacant positions, especially those at the supervisory level, are staying for shorter periods of time.
I think that in the past, before I got here, people stayed put much more than they do now. Rangers definitely, if they’re young in their careers they’re not going to be here that long—three to five years. Forest supervisors, if they’re looking to move up, they’re not going to be here that long—probably the same amount. And then folks below them—it depends on what their career aspirations are. (Interviewee, 4)

Younger folks are much more willing to only work two or three years in one place and then leave. Whereas people my generation or even older—you’d get a job with the forest service and you could stay in that same job for twenty or thirty years. (Interviewee, 1)

Go back to the last question, the people have changed, what’s changed is the people aren’t staying as long. People used to come to Sweet Home and they stayed. We had people for twenty years and eight years was sort of a short timer. Nowadays three years is a long time to keep anybody. (Interviewee, 9)

Simply put, interviews with respondents suggest that senior staff believe that newly hired employees are choosing to leave their positions earlier than those who held those same jobs in the past. While the reason for this turnover is unclear, many respondents indicated that they felt career advancement played a role in causing people to leave.

Culture and Vision Summary
Overall, participants’ comments reveal that the Forest has undergone tremendous organized change at the culture and vision level. These include changes in its identity, employee relationships, interactions with local communities, and career advancement and turnover. Concerning its vision, the Forest has transitioned from being an organization whose primary purpose used to be timber extraction, to one that is now attempting to define what its primary mission is. A consequence of this is the ongoing documented confusion within the organization about its present and future mission. Regarding its cultural shifts, Forest departments appear to be collaborating in far greater frequency than in the past, despite overall decline in face-to-face interaction. Moreover, whereas many Forest employees in the past used to reside in the small local communities surrounding their ranger districts, nowadays it employees are choosing to live in larger and more distant towns.

5.2 Structure of Decision Making in the Agency

![Table 1. Contents of organized change](image)

Another level of conceptual change that was identified by participants involved differences in the structure of decision making at the Forest. Specifically, interviewees pointed out how their human resources and IT staff, as well as their Forest budgeting and hiring practices, have been centralized over the last several years. In addition, interviewees spent a great deal of time speaking about the consolidation of ranger districts occurring as a result of timber harvest reduction and substantial budget cuts.

**Centralization**

When asked about major changes that have occurred at the Forest, participants from each district and every department spoke about the implementation and impacts of centralization. “Yeah they centralized lots of things in the last 10 years. They centralized all of our hiring processes—a lot of our budgeting processes,” said one interviewee. (Interviewee, 1) Another interviewee noted, “At that level we’re wanting to unify zones—that’s where we’re kind of wanting to go in the future—unified budgets, all one thinking—that’s kind of from the top down.” (Interviewee, 6)

As the following comments demonstrate, this push toward greater centralization has included not only hiring and budget processes, but the placement of IT and human resources staff as well.

So they used to be part of our organization—they’ve been pulled out—the GIS people and the computer people have all been pulled out. The AQM people—the acquisition management, have been pulled out. They’re a regional organization—same with human resources. (Interviewee, 10)
Then the agency went through a centralization effort which, from an administrative standpoint they decided that for the Forest Service—we were going to centralize in Albuquerque—our budget functions, our computer functions. And then it might have been a year later or two that the personnel functions—the HR functions were also centralized. (Interviewee, 2)

A lot of that has to do—this has been true with the entire Forest Service—the shrinking budgets, everything has been centralized—we do not have any personnel people here to do personnel paperwork. We’ve got to do it all ourselves. (Interviewee, 3)

While there appears to be a consensus that the centralization of human resources and IT staff has had a negative impact on the Forest, the same cannot be said of the centralization of budget and hiring processes. For example, one interviewee stated:

From my view the budgeting functions have gone pretty well because what we did was we married up. At the time that we centralized a lot of our financial systems—we also got real time reports because technology kind of lined up.” (Interviewee, 2)

However, another interviewee noted:

I do feel for some of the new folks coming in if you’re on staff and you’ve never had to deal with the forest service budget. It was important to me coming up so I paid attention
to it and there’s a lot to it that you can’t teach, so I know a lot about it and I do voice my opinion about it—because we want to go unified and right now I don’t want to do that because we’re different. (Interviewee, 6)

In summation, each respondent spoke about centralization as being one of the major changes that had occurred at the Forest. This includes the centralization of human resources and IT staff, as well as that of hiring and budget processes. While some of these centralization changes, such as the unification budgeting, appear to have gone smoothly, others have been given less than favorable views, in particular the movement of HR and IT staff.

Consolidation of Ranger Districts

With a decline in budget often comes an increase in the consolidation of various aspects of an organization. In the case of the Willamette National Forest, the greatest amount of consolidation appears to have occurred at the ranger district level. Whereas there used to be seven ranger districts, the Forest now contains four offices and three administrative zones. A brief look at interviewees’ responses reveals the following:

We used to have seven ranger districts plus the headquarters, and now we have four ranger districts. And the headquarters is shared with the BLM and the military. So it’s been pretty dramatic shifts in just personnel size. (Interviewee, 1)

And the districts kind of consolidated—they never really liked using that word consolidated—but you know, unified or whatever. (Interviewee, 3)
There have just been huge changes. Let’s see, I sat down and thought about it a little bit. There used to be seven districts, and now there are technically four offices—but there are three administrative zones. Detroit and Sweet Home are combined into one admin zone, even though they’re technically two offices. McKenzie and Blue River combined into one district. And then Lowell, Rigdon, and Oak Ridge combined into one district—the largest of the three. (Interviewee, 4)

**Structure of Decision Making Summary**

Changes in the structure of decision making at the Forest were afforded a great deal of attention by respondents. Specifically, the consolidation of ranger districts, as well as the movement of HR and IT staff to regional offices, appear to be some of the more prominent changes to have occurred at the Forest. The effects of these changes have been met with mixed feelings, with some employees identifying the consolidation measures as necessary [budget and district consolidation] and others expressing their frustration with them [relocation of human resources and it staff].

**5.3 Systems, Procedures, and Programs**
Some of the most referenced and discussed changes by participants were those that involved the organization’s systems, procedures, and programs. These include alterations in funding sources, individual program focuses and strategies, Forest relationships with external partners, and training requirements.

**Funding Sources**

Traditionally, the Willamette, along with many other Forest Service lands, has relied on timber harvests as a means of funding the bulk of the organization’s operations. However, since the listing of endangered species pursuant to the ESA, the Willamette has been forced to reduce its timber harvest levels by a considerable amount. The result has been both a decline in Congressionally appropriated funds for the Forest, as well as an increase in reliance upon federal grants. The Willamette, a forest that once harvested nearly a billion board feet of timber annually—that was referred to by some as the “USS Willamette”—now harvests only a fraction of what it used to during its peak timber days. One participant, when describing this sudden change, recalled:
We don’t have the fiscal capacity—Congress isn’t giving us the fiscal capacity. A lot of the funding—the funding was certainly through Congress, tied to the timber sale program—and because the timber sale brought revenue to the government. So the forest service was being rewarded for that by providing operational funding. And so a lot of programs were subsidized—recreation included—by the timber sale program. (Interviewee, 4)

Other interviewees focused their attention on how grant writing has become a significant part of their job because of the reduction of funds from timber and other traditional sources.

A lot of researchers get their own money by writing their own grants and going after soft money and it is very initiative driven. These days anything associated with climate change—there’s a grant for you. So every idea that people come up with—in questions they’re now trying to creatively write it into a climate change sort of arena. So there’s not a lot of just, here we want to give you money to study something, let us know what you need, sorts of opportunities. That just doesn’t happen. (Interviewee, 1)

Yes, hard money—we can only use hard money to do the NEPA and pay salary—but in actually doing the projects we get soft money. (Interviewee, 8)

Program Focuses and Strategies
Program focuses and strategies refer to changes that have occurred within three major departments of the Willamette National Forest: timber, natural sciences, and fire. Because individuals from each of these departments were interviewed, insight was provided for all three.

**Timber**

Of the three departments, perhaps none has undergone as rapid and numerous changes as the timber department. After the listing of endangered species, as well as the passage of the NWFP, the Willamette changed from being a forest whose management of timber resources included clear cutting and non-declining even-harvest flow, to one that now predominantly thins old plantations. Rather than the 70-80 million board feet of timber harvested annually by each district, many of the Forest’s districts now harvest around 10-15 million, depending on the year. When asked about this significant change, one interviewee replied:

> One thing that has changed is the size of timber we’re cutting. We’re cutting stuff now that we used to pre-commercially thin—where we just go out and thin it and leave the trees on the ground. Now we’re taking them out so that we’re cutting timber not much in significant size. It’s what we call treated stands—no natural stands. (Interviewee, 5)

Other interviewees, concerning the same subject, noted:

> We’re not harvesting anywhere near as much timber and that has changed quite a bit too. Since the Northwest Forest Plan came along—during my first, probably ten to fifteen years, we had a much larger cut. In fact my first year the forest supervisor—I remember
him saying a billion board feet—that we’re going to cut a billion board feet—and we did.
(Interviewee, 8)

The type of work that we’re doing is completely different. We’re not clear-cutting, we’re thinning. It’s all thinning and people are starting to see that thinning does not look like a clear-cut. (Interviewee, 9)

Natural Sciences
Coinciding with the changes in the timber department have been changes in its natural science departments. Most notably, natural resource specialists are now relying much more on technologies such as GIS and other advanced modeling methods. This is a stark contrast to the past field work that used to characterize much of Forest scientists’ work. Not surprisingly, these new techniques, coupled with greater reliance upon modeling assumptions, have been met with mixed feelings.

We don’t survey for spotted owls anymore like we used to. There are methodologies in place to allow us to plan projects without the survey results, but based again on assumptions for where we know we had spotted owls in the past. We can kind of run a little modeling and predict that we might have them in certain gaps of that habitat now. (Interviewee, 7)

If you don’t thin in a riparian area, you don’t have to go in and survey. So let’s just not thin in the riparian area and avoid that cost. Let’s assume the spotted owls are there
because it’s habitat—instead of going out and looking for them we’re just going to assume they’re there because it’s just much more economical to do it that way. But then you just don’t have the people getting that experience of doing that spotted owl survey and that’s how a lot of us, especially biologists, came up through the ranks, was seasonal jobs doing spotted owl work. Pretty much every cohort in my age group as a wildlife biologist started out as a spotted owl hooter. (Interviewee, 1)

Fire

A handful of interviewees commented on how the Forest’s fire program has evolved over the last 30 years. What used to be a department that emphasized putting out any and all types of fire has now become a department that recognizes fire as an important and healthy component of a forest’s ecology. The result has been that the Forest’s fire teams now spend less time assisting with the thinning of clear cuts through burns, and more time protecting property and taking care of debris piles. The following comments help to illuminate this change in how the Forest utilizes its fire resources:

I think that’s changed. It was put everything out, fire is bad we’ve got to stop everything, to more of the healthy ecosystem, fire is good, let’s take advantage of that. (Interviewee, 6)

Well fire used to be slash janitors. We did a lot of broadcast burning and nowadays we do a lot of pile burning. So slash janitor job has changed to clear-cut, plant and burn, to thin and pile burn. (Interviewee, 9)
Fire in the forest service is pretty much half of our budget and that’s a big shift. And a lot of that has to do with wild land fire and trying to protect either homes that are built closely—communities that are built close to national forest lands. (Interviewee, 2)

**Relationships with External Partners**

The listing of endangered and threatened species, along with the Forest’s declining budget, has also drastically affected its relationships with external partners. Before the occurrence of these events, the Willamette functioned more or less as an independent fiefdom—one that maintained strict control over the planning decisions that occurred within its boundaries. Accounts given by a substantial number of interviewees paint a different picture of the Forest today. Most notably, the Forest has come to rely more on the services offered to them by nongovernmental organizations (NGOs), increased its use of contractors, become more engaged with the greater public, and been forced to adhere to many of the stipulations set forth by regulatory agencies such as the U.S. Fish and Wildlife Service (USFWS) USFWS, National Oceanic Atmospheric Administration (NOAA), and the National Marine Fisheries Service (NMFS).

**Outside Regulatory Agencies**

When speaking about the role of external regulatory agencies two interviewees commented:

USFWS, NOAA, NMFS—all of those agencies that actually have a regulatory authority to approve or reject—that we are partnering in a consultation with—that we have to get BiOp [Biological Opinion] from them in order to get our project to go through the court
system. If we don’t get BiOp from them then it’s not going to go through the court system. I think that’s a big difference and that it was probably promulgated by the ESA—from the listing of species through the ESA. Once we started getting species listed, then the regulatory agencies were required to come in and perform a review and consultation role, whereas prior to those listings, their role was much more limited. (Interviewee, 4)

I think that with the Northwest Forest Plan—and the fact that the Fish and Wildlife Service and National Marine Service pretty much have—we have to live up to this standard now—we don’t have a choice. I don’t think the managers have a choice anymore. If they want concurrence with the other federal agencies—I think that we’re being held to a high standard that’s not going to—there’s no monkey wrenching to it, that’s what it is. (Interviewee, 10)

Other participants spoke about how their relationships with external agencies were often dependent upon the regulatory agency itself:

Yeah, I think over time what we’ve seen is Fish and Wildlife Service has been easier to work with. They’ve had a culture that is much more into collaborative collaborations—working a partnership for recovery—whereas NOAA sees itself more as a regulatory agency and it likes to have the badge of a regulatory agency. So they’re not—haven’t been quite as much in the problem solving sort of arena, as in the do it that way because I
tell you to, sort of place. So, yeah, there are a lot of people around here that are not fans of NOAA. (Interviewee, 1)

*Use of Contractors*

Participants from each Forest department indicated that there had been substantial changes in the use of contractors at their organization. In particular, respondents from the natural resource programs spoke at great length about how they have seen an increase in the amount of fieldwork that gets contracted out:

We use a lot more contract crews. Now it’s just a much smaller job for one, and we really swung a lot more towards contracting—and then have tried to find really much more efficient ways of even doing the contracting. So we’ll have one big blanket contract that maybe we share with BLM. So people that are doing botany surveys are contracted to work across maybe the BLM and the Forest Service under one order—one company. (Interviewee, 10)

Contracting is what we pretty much rely on for field surveys now. There are standing contracts in place if we need red tree vole surveys we have those contracts to tap into. (Interviewee, 7)

Timber and fire respondents on the other hand, seemed to feel that in general, the amount of contracting in their programs was something that had remained stable over the years. Instead,
they were more likely to point out changes that have occurred in contracting processes or the number of contractors that are available to choose from.

Not in sale prep or silviculture. We still use the same kind of contractors. There aren’t as many contractors, so we don’t get as competitive bids on tree planting and thinning. When we planted a thousand acres a year, instead of thirty, it was a much more competitive market. (Interviewee, 9)

We do, we do contract more, there’s this perception at the national level—I would say it’s a political perception probably above and beyond the department of Agriculture that government is bad, restrict government, do more contracting out. It’s a huge waste of money, it’s never more efficient, you always get a lower quality product, so we do a lot more contracting out. We used to have for our timber sale program, a small four to five person college student stand exam crew in the summer—now it’s all contracted out. It’s done by people that make their living off of doing stuff like that. They do it as fast as they can and get the hell out of here and there’s a contract that’s inflexible, and if I don’t like the way it’s been done there’s nothing I can do about it, as opposed to if I’ve got five college students working for me I can say, no you’re not going to do it that way you’re going to do it this way. (Interviewee, 3)

NGOs

A couple of individuals highlighted the ever-increasing role NGOs are playing at the Forest, especially in assisting its subsidized natural resource programs. One interviewee even noted:
So we have to have partnerships in order to actually do any of the restoration projects that we’re doing. So, Rocky Mountain Elk Foundation, Oregon hunters, Mule Deer foundation, all of these organizations—thank the lucky stars for these guys, because if we didn’t have them we’d be in deep doodoo. (Interviewee, 8)

Along the same lines, another employee remarked:

What we probably do more now is stuff with outside groups—with NGOs. We do a whole lot more of that kind of stuff with NGOs. Nobody had ever heard of a watershed council back in 1990, so that’s a fabrication of the early 2000’s. But there were what we called, working groups. Where we pulled people who had very different views on something—we pulled those groups together and had little powwows and tried to collaborate on alternatives or options that people could buy into. It’s just more of the buzz right now. (Interviewee, 4)

**Greater Public Involvement**

Some interviewees chose to speak about the increase in public involvement that has occurred at the Forest during their tenure. Decisions that used to be entirely under the purview of the Forest have since become subject to greater public scrutiny and input. Much of this can be attributed to statutes such as NEPA and NFMA, which require public input and consideration processes.
And I think there’s the piece around communities and community involvement—and I think you hit on that a little bit with our—you know we have our NEPA compliance and our NEPA requirements—and trying to get smarter and more efficient about how we do that work—and also trying to involve our communities and interested partners and publics early in the process, so that doesn’t come as a surprise later. (Interviewee, 2)

**Training Requirements**

Nearly every participant pointed out what they believe has been a considerable increase in the number of agency trainings in which they’re required to participate. Most of these trainings appear to coincide with the Forest’s adoption of computers and corresponding software packages. In addition, some interviewees noted that they feel there has been a proliferation of agency safety and leadership trainings. Overall, these trainings and other agency requirements seem to have produced mixed feelings from senior staff at the Willamette. Whereas some interviewees view these trainings as both necessary and beneficial to the Forest, others tend to view them more as time-sinks.

Lots of computer training—mandatory stuff that kind of drove people. There are probably ten different mandatory computer trainings we take every year—everything from supervisory training to security risk training—lots of different things. (Interviewee, 1)

We have more certifications that we have to have these days. If you want to operate a chainsaw or drive an ATV or Snowmobile, or even a forklift—there’s a lot more different
trainings that people have to have to do some of the things that we just did. (Interviewee, 9)

Leadership has been a big change and we’ve had a lot more training. And that’s something I didn’t have, I kind of had to learn as I went. I looked at the bad leaders as well as the good leaders and learned. We actually have a leadership development series course and I think that’s another thing that folks have learned. (Interviewee, 6)

They now have all these required computer courses we have to take for safety and diversity training, and all this kind of stuff that we have to do that we didn’t have to do before. (Interviewee, 3)

**Systems, Procedures, and Programs Summary**

The comments above suggest that the Forest has changed tremendously over the last three decades regarding the functioning of its systems, procedures, and programs. These changes include alterations in where Forest departments obtain their money [grants as opposed to direct federal funding], closer relationships with external partners [NGOs, regulatory agencies, the public, greater reliance on contractors], and an increase in required trainings [computer and leadership courses]. In addition, many respondents noted the adjustments made by the organization’s timber, fire, and natural resources departments during their tenure. For the timber department, the biggest shift has been its move away from the harvesting of plantations toward greater reliance on thinning. For the fire department, the greatest change has been is transition from putting out any and all fires, to recognizing fire as an important component to the Forest’s
ecosystems. This change has resulted in a decrease in slash and burn crews for the forest and an increase in pile burning. Lastly, natural resources departments appear to be relying more and more on technological modeling techniques in the past. Much of this has been driven by the need to account for and manage endangered species during a time of declining budgets and workforce. These declines will be discussed in more detail in the following section.

5.A People, Jobs, and Facilities

Second only to culture and vision, changes in people, jobs, and facilities were one of the most widely discussed levels of change by participants. In total, there were five issues that emerged when analyzing this level of change: staff size, employee demographics, position specialties, infrastructure, and technology and related skills. Because of the concrete nature of these changes, this level was one of the more recognizable and easy layers of change to dissect.

Staff Size
To say that participants identified a reduction in staff size as one of the most noticeable changes during their tenures at the Forest is an understatement. Along with reductions in timber harvests, every single individual interviewee discussed this specific change. What’s more, this downsizing of workforce was identified at a number of different levels and at different scales. For example, several interviewees spoke about staff reductions that have occurred at the greater Forest wide level:

So, we used to have 1,600 people here at the Willamette and now we’re down to 300 and some. (Interviewee, 1)

The Willamette National Forest used to have 800 something employees. We’re currently in the low 300’s now. (Interviewee, 2)

Yeah I think there were a thousand employees when I first started and now there are like 250 or 270. (Interviewee, 8)

Other interviewees focused more on how the staff size of their districts and departments has shrunk over the years. This was especially the case for participants who had spent most or all of their time working on one Forest district.

Some other big differences are, amongst those seven districts, there were probably anywhere from 90-100 employees in each district. And then there used to be three
engineering zones on top of that and they had 90-100 employees—and their whole focus was basically roads. (Interviewee, 4)

Some employees pointed to the fact that not only has the number of permanent employees at the Forest been substantially reduced, but so has the hiring of seasonal employees. This appears to have coincided with both the Forest’s reduction in budget and its greater reliance on contracting.

But in terms of the seasonal—we still have a fire crew. It may not be quite as big as it was when the three districts were separate but it’s pretty big. But I don’t get too much involved in that so I don’t really know too much about the seasonal employees but I’m sure there are fewer employees. (Interviewee, 5)

We actually used to have a lot more seasonal employees. Yeah. We were larger. And we had big crews. We had big fire crews that we hired. We had big trail crews we hired. I used to hire a six person spotted owl crew every year. There were string survey crews. No, we used to hire a lot more seasonals. (Interviewee, 1)

Less seasonals. As a manager we could hire seasonals or we could hire permanents and give them benefits and keep them around. My take on it is we want permanents. I was six years as a temporary with no medical benefits—none of those things. It’s not something that I want to see. (Interviewee, 9)
Position Specialties

Position specialties refers to changes in the types of jobs and positions employed by the Forest. After the implementation of the NWFP and the settlement of various court cases, the Willamette was faced with the task of hiring a number of natural resource specialists so that it could fulfill its obligations under statutes like the ESA, NFMA, and NEPA. This resulted in a substantial increase in the number of scientists employed by the Forest starting around the early to mid 1990’s. Many interviewees spoke about how this spike in ‘ologists [scientists] has evolved over the years.

No, actually when I first came here we didn’t have, that I can recall, any ‘ologists. And when I was here for about a year or two we got one wildlife biologist on the district. And now we have—well significantly more ‘ologists than we use to have. There’s one whole department of ‘ologists and—it’s shifted significantly from predominantly timber to the conglomerate of everything. (Interviewee, 5)

An increase in the number of advisory level positions was yet another change in position specialties noted by a many study participants. Some of this can be explained by the need to comply with complex planning processes required by statutes such as NFMA and NEPA.

There’s a whole lot more advisory type of folks—that basically their whole job is to respond to somebody else’s project as opposed to getting a project of their own done out there. Most of their existence in the agency is focused around responding and crafting
reports and doing analysis to describe effects. For good or bad that’s just the way it is.

That’s the need the agency has right now. (Interviewee, 4)

**Employee Demographics**

Previous studies indicate that the Forest Service continues to undergo major changes regarding the demographic makeup of its employees (Brown and Harris 1992, Cramer et al. 1993). These include the retirement of older individuals and the hiring of younger ones, greater female representation, and a more educated workforce. In the case of the Willamette, a large portion of study participants identified all of these changes during their interviews, thus suggesting that the Willamette is undergoing changes similar to that of the entire Forest Service.

**Greater Female Representation**

Nearly every single participant spoke at great length about how the Forest’s workforce was dominated by men up until the late 1990’s. What’s more, respondents described this underrepresentation of women as being prevalent throughout each department. The only exception appears to have been in portions of the human resources program, which up until the mid 1990’s, was substantial in size. However, since the passage of the NWFP and the hiring of natural resource specialists, the ratio of women to men appears to have become more equal at least according to interviewees’ perceptions.

We have a lot more gender diversity—I would bet about half the forest is female. That’s just a wild guess. (Interviewee, 4)
A lot more females, yeah. When I first came here there wasn’t a woman on the fire crew and now it’s probably at least a third or better. (Interviewee, 5)

So now we’re—in my staff area—the planner is a woman, the fisheries biologist is a woman, the botanist is a woman, and the hydrologist is a man and the wildlife biologist is a man, our staff officer is a woman. So, it’s really more 50-50 at this point. I think we’re quite a lot more balanced. (Interviewee, 8)

We’ve got a lot more women working now than were working when I first started. (Interviewee, 9)

Age

Several participants identified what they believe has been a recent change in the age range of employees at the Willamette. When asked why they believed this had come about, many interviewees responded that it was simply the result of a workforce turnover that has occurred over the last five years.
We’ve been talking about it for 15 years that the turnover is coming and people are retiring and this is happening. It’s finally happened—probably in the last couple of years. (Interviewee, 7)

There are people about to retire and there are people coming in. There’s not really a pretty strong demographic of people in between those two things. In my time since 2008, since I’ve taken over operations, I’ve hired all but two of thirteen people. So that’s how much turnover we’ve had, and all through retirements. (Interviewee, 9)

While some employees expressed concern about this turnover, the majority seemed to feel that the introduction of younger staff to the Forest was a positive change. The following comments help to illustrate this:

It’s been real refreshing for me, we have a lot of younger energetic people here now, but it created this gap in the workforce that we deal with now. (Interviewee, 3)

And I look forward to the future because I do see young folks coming in, and energy, and excitement, and wanting to do a good job. (Interviewee, 10)

Outside vs. Local
During the beginning of each interview, participants were asked to speak briefly about their background, including where they had grown up, their education, and what their job at the Forest was. After several interviews, it became apparent that many natural resource interviewees had grown up outside of the Pacific Northwest, whereas a number of the timber and fire department interviewees were from surrounding communities, such as Springfield and Oak Ridge. When asked about this observation, several participants explained that over the course of time, their departments had become more prone to hiring people from outside of the local communities, rather than people within it.

When I first came a lot of the people that were on the crew were local. (Interviewee, 5)

I think it varied a lot. When I first got here and struck up acquaintances—again mostly with folks working in natural resources—I was struck by their backgrounds as far as—oh I’m from Minnesota, I’m from Michigan, Wisconsin. It was amazing how many folks you got to know had migrated out here for one reason or another also. Like if you talk about timber and fire back then in particular—there was a lot more local focused family history in employment. There were far fewer employees that were drawn out here from elsewhere to get into those disciplines. And now what I see is it’s all over the board really. There are folks from any department that are coming from all kinds of different backgrounds and locations. (Interviewee, 7)
The last major demographic change identified by interviewees concerned the education level of new hires. Because the U.S. continues to undergo sluggish economic growth and government agencies across the board face declining budgets, many federal job openings are becoming more competitive. Therefore, it was not surprising to hear from participants that the Willamette has been filling its vacancies with candidates who often have extensive amounts of education.

Well the last few technician jobs I’ve hired I’ve filled them with four-year graduates because they’re having so much trouble getting jobs as a forester. So they have different skill-sets, they come already GIS equipped and they’ve already been in EXCEL and WORD and they know how to do those programs, so it’s pretty easy to teach them how to use the programs we have for time and travel. We don’t have a lot of people that are coming in that are not computer literate. That used to not be a condition of the job and people really resisted having—that’s not why I was hired, that’s not what I was hired to do. So they resisted that stuff, some people did. The people that embraced it moved up though—if that’s what you wanted to do. There were a few people around that were actually illiterate when I first started—they couldn’t read, didn’t have a driver’s license. And we don’t have anybody that has a potential of being hired like that these days. (Interviewee, 9)

New hires have more of an education maybe than back when I came up. (Interviewee, 6)
Technology and Related Skills

It is no secret that over the last thirty years technology has progressed tremendously. As an organization, the Willamette National Forest is no exception to these transformative powers of technology changes. For example, one participant noted that what may have been an arduous biological study involving copious amounts of field surveys, can often be done today through GIS and other innovative software packages. Another interviewee pointed out that staff members used to communicate mostly through phone calls and in person meetings, nowadays they rely on email, smartphones, and other means to interact with one another. For many participants, this change in technology has been peppered with both pros and cons. As one interviewee put it

Just computer skills in general has been a huge change for the organization. We used to have—when I first started, we had a computer network—it was only networked within the forest service—so you couldn’t send an email to anybody else. And it really kind of restricted us in terms of our ability to reach out and use a lot of different resources. Well you know what it’s like today—you can push a button and pretty have much have a chat with anybody anywhere in the world.” (Interviewee, 1)

Other interviewees’ comments about this greater reliance on computers include:

Back in the day everybody didn’t even have a computer—we had a big mainframe and then we had a word processing system that we utilized for word processing—and most
folks didn’t do their own word processing—they gave it to somebody else to type up and prepare. And so with computers now, what happens is there’s messages that come to people that tell them what they need to do. (Interviewee, 2)

Oh yeah, computer technology, GIS skills—almost mandatory in order to get quality work done in a timely manner anymore. And new people are showing up with those skills and actually to the point where they wonder why we haven’t come farther or aren’t at a more advanced point in our filing systems and planning processes and things like this. There’s still a lot of old school aspects to some of those things that we do—where it’s hard copy information—if you want to look it up there’s a three ring binder on a shelf—go find it. Which it works if you know that type of system, but it’s not particularly efficient when you have to respond to data requests and reviews that come along a lot and it just takes time to find the answers when you’re digging through files like that that are linked to problem that are long gone—you end up making a lot of guess work. (Interviewee, 7)

**People, Jobs, and Facilities Summary**

According to respondents, changes within the Forest at the concrete level have been numerous over the last three decades. Along with substantial reductions in staff size, the Forest has witnessed shifts in the demographics of employees [gender, age, education] and the introduction of a variety of new technologies and related skills [email, computers, GIS]. For example, many respondents noted how the Forest currently employs a much greater number of women than it
did when they first came on to the workforce. In addition, the position specialties of employees have changed during many respondents time at the Forest. Whereas natural resource specialists used to make up only a small percentage of the Forest’s workforce, they have since become a much larger component of the organization’s staff. Lastly, it was pointed out by some respondents that the education level of incoming employees has become higher and higher each year. As mentioned earlier, much of this can be attributed to the increasing competitiveness of obtaining federal jobs, which in turn is the product of both mandatory federal budget cuts and a slow moving economy.

5.5 Results Summary

Respondents’ comments reveal that numerous changes have occurred within the Forest over the past 30 years, both at the concrete and conceptual levels. Changes at the more conceptual levels include a move away from a timber directed identity, greater collaboration amongst Forest departments, centralization of budgets and HR and IT employees, the consolidation of Forest ranger districts, and a shift in where Forest employees are choosing to live. Concerning changes at the more concrete levels, the Forest has experienced significant reductions in both its staff and budget size, greater hiring of female and natural science employees, the adoption of new technology and related skill sets, increased reliance on external partners [NGOs, outside regulatory agencies, contractors], and alterations in funding.

Overall, these changes appear to have been met with mixed feelings by participants. Changes such as identity and mission confusion, reductions in staff and budget, and the centralization of HR and IT staff, have been difficult for respondents to adjust to. Moreover, some of these
changes, including identity confusion, the adoption of new technology, and the hiring of more supervisory and natural resource employees, continue to occur throughout the Forest. All of these issues beg the question, how will the Forest continue to adapt to these organizational shifts in the future and what further changes are likely before the clarification of its identity can occur?

6. DISCUSSION

The intention of this study was not to test theory, though it does in fact utilize it. Instead, this paper provides an inductive exploration of perceived changes that have occurred at the Willamette National Forest over the last three decades, and considers the implications of these changes in the context of contemporary organizational change theory and future resource management. By using semi-structured interviews, senior Willamette staff members were able to express, and in some cases concatenate, the major changes and adaptations they feel have occurred within their organization since they arrived. In other words, along with identifying perceived changes in the Forest over the past 30 years, participants often explained how these changes were related to one another. What’s more, this study offers a complimentary assessment of previous research about organizational changes at the Forest Service agency level. Using a modified version of Mintzberg’s and Westley’s framework for organizational change, as well as Lewin’s three-step intervention model, this report is able to provide policy suggestions for future managers and staff of the Willamette National Forest and offers a lens from which to view the changes identified by respondents.

6.1 Organizational Context and Levels of Change
Previous research suggests the need to make organizational context very clear (Pettigrew, 1988). Moreover, some studies point to the idea that organizational change occurs both within and between concrete and conceptual levels, and claim that it is important to comprehend the level where change is focused if change is to be properly understood (Mintzberg and Westley, 1992). Based on participants’ responses, many of the major changes that have occurred at the Willamette were precipitated by the listing of species pursuant to the ESA and the passage of the NWFP. Once these major exogenous changes occurred, there appears to have been a cascading effect of change within the organization itself. These include changes from the most concrete level—people, jobs, and facilities—to the most conceptual—culture and vision. Considering the work of Weick and Quinn (1999) this reaction to external events suggests that the Willamette has been undergoing a form of episodic change, where change has been the product of a misalignment between an inertial embedded structure and perceived environmental demands.

As mentioned earlier, many interviewees pointed to declines in budget, reductions in staff size, the hiring of more female employees, and a move away from timber, as being some of the more prominent changes to occur during their tenure. In addition, a number of participants felt that the programs and practices of various forest departments had changed over time—most notably the timber operations department’s departure from planning and harvesting plantations—to thinning within previously logged areas. Results of these changes include the emergence of “mission confusion” among senior Willamette employees and uncertainty as the future direction of their organization. Recognizing these perceptions of change, while identifying its overall tempo and pattern, can be seen as the first step toward being able to better understand, and perhaps manage, changes within the Willamette.
6.2 Stages and Patterns of Change

Closer inspection of participants’ responses reveals that the Willamette may be experiencing what Mintzberg and Westley refer to as a “stage of struggle”. A stage of struggle is a period in which an organization has lost its sense of direction and is still attempting to create a new one. This period can be made up of either perceptual change or actual behavioral change and tends to be one of confrontation, experimentation, and delay. Forest employees’ responses draw a picture of the Willamette undergoing multiple experiments with various and often distinct, efforts directed at learning a new culture and vision. Frequent comments about identity confusion, compliance with the NWFPA, and the proper role of timber within the organization describe perceptions of these experiments. In addition, many of the changes in operating procedures, such as greater reliance on alternative means of funding and ever evolving relationships with external partners, suggest that both concrete and conceptual aspects of the Willamette remain in a state of flux.

It is important to note, however, that for the majority of its history the Willamette has experienced long periods of relative stability. Most of the major changes pointed out by Willamette staff came about after the introduction of the listing of species under the ESA and the concurrent passage of the NWFP. Again, this suggests that the overall history of change of the Willamette is one characterized by periodic bumps in which the organization has been interrupted by dramatic episodes.

6.3 Relevance for Management
So what does this description and analysis of the levels, stages, and patterns of change at the Willamette mean for the practicing manager or employee of the Forest? Or as Mintzberg and Westley (1993: 51-52) ask, “…how can an acting manager concerned with managing change for strategic purposes, maintain a healthy vitality which balances continuity and change, stability and learning?” To answer this, it is helpful to turn to Kurt Lewin’s previously described three-step model of organizational change and Thomas Kuhn’s work on the structure of scientific revolutions.

_Lewinian Implications_

According to Lewin, a successful change project involves the unfreezing, moving, and refreezing of an organization. From the analysis of senior employees’ interviews, it is apparent that the first step of this process, unfreezing, has already come and gone. What used to be an organization centered on timber and the mission of “get out the cut”, is now one struggling to cope with a post timber reality. Likewise, respondents’ comments point to a number of strategic and innovative adaptations the Forest has made since the mid 1990’s to deal with these changes. These include greater collaboration among departments, adoption of new technologies, reductions in staff, and changes in department strategies. This suggests that the Willamette has achieved unfreezing through the three processes Schein (1996) believes are necessary to do so: disconfirmation of the status quo (Timber WAS King), induction of survival anxiety (NWFP and NEPA), and creation of a psychological safety net (greater collaboration, new professional specialties).

It is the second stage of Lewin’s three-pronged model—moving—that seems to offer the greatest insight for current and future personnel of the Willamette. Lewin understood that unfreezing
was not an end in itself. As Schein (1996: pg. 6) notes, “…it creates motivation to learn but does not necessarily control or predict the direction.” Because of this, it is vital one map out all of the forces at work and iteratively analyze the available options (Lewin, 1947).

Interviews of senior Willamette staff indicate that the Forest continues to undergo a state of struggle, insofar as organizational change is concerned. Moreover, in-depth analysis of participants’ responses reveals that all levels [conceptual and concrete] of the organization have experienced significant changes over the last three decades. Unfortunately, for managers of the Willamette, some of the changes that continue to take place within the organization are beyond their scope of influence. These include reductions in budget and staff, alterations in where the Forest receives its funding [reliance on grant money and reallocation of money to fire management], and the centralization of HR and IT departments. Changes at this level will need to be addressed by Forest Service leadership at both the DC and regional levels and will undoubtedly involve significant structural changes within the agency (Brown and Harris, 2010).

Additionally, it is important to note the difficulty involved in leading government organizations through a stage of moving into a state of freezing [or refreezing], wherein group norms and routines are transformed, thus leading to a new quasi-stationary equilibrium. Because of their public nature [a diverse national constituency and employee protection policies] government organizations often take more time to change than private companies (Appleby, 1945). For example, changes in public expectations about ecosystem based management and conservation practices began to manifest themselves in the mid to late 1960’s and came to the political forefront in the mid 1970’s (Cramer et al., 1993). It wasn’t until the early 1990’s however, that
the northern spotted owl became listed under the ESA and the Willamette implemented the NWFP. Since then, the Willamette has made numerous adaptations including the hiring of more natural resource specialists and women, the strengthening of relationships with diverse external partners, and increased collaboration among its various departments, to name a few. Nonetheless, the Forest continues to struggle with its post timber paradigm shift.

Despite these limitations, Willamette managers still have tools at their disposal that can help them to direct change within their organization during this time of “moving” [transition]. Concerning changes at the systems, procedures, and programs level, one possible course of action may be to hold a series of workshops with Willamette employees and their various external partners. This may help to identify and alleviate some of the distrust and frustrations that currently exist between the Willamette and its partners, particularly with outside regulatory agencies. Another option for managers is to increase the amount of face-to-face interaction among Forest employees while continuing to push for greater collaboration between different departments. This could be done by encouraging impromptu hall meetings or setting aside time for more structured, in-person talks. If carried out, actions like these could foster further unity among employees and afford them opportunities to work through the Forest’s current identity confusion.

*Kuhnian Implications*

A paradigm is a preeminent belief structure that organizes the way people discern and make sense of the operative world around them (Milbrath, 1984). According to Brown and Harris (1992: 232), “A ‘resource management’ paradigm is the set of common values, beliefs, and
shared wisdom that collectively provide the lens through which individuals in resource management professions form attitudes and upon which they base their actions.” Moreover, “The decision to reject one paradigm is always simultaneously the decision to accept another, and the judgment leading to that decision involves the comparison of both paradigms with nature and with each other” (Kuhn, 2012: 78). Willamette senior employees’ responses and earlier analysis in this study suggest the Willamette is indicative of greater Forest Service trends (Brown and Harris, 2000, 2010) in that it continues to struggle in its transition from a previous “timber was king” paradigm to one of ecosystem based management. This begs the question, when might the Willamette transition into a stage of refreezing, wherein the new emergent resource management paradigm is solidified?

One thing that Kuhn (2012) says about paradigm shifts is that they are almost always brought about by people who are either very young or very new to the field they change. He argues that because they are little committed to prior practice and traditional rules, it is easier for them to conceive of new standards and behaviors to replace those they deem to be outdated. In addition, he notes that in order for these shifts to really take hold, the old regime must often leave or retire (Kuhn, 2012).

While the Willamette has experienced numerous changes over the last three decades, respondents’ comments hint that turnover in high-level positions [line officers and other managers] has only begun to pick up in the last several years. Furthermore, many of these positions have remained vacant due to the Forest’s decline in overall budget. Until a critical number of these positions are filled by new employees whose skill-sets, practices, and values
align more closely with the resource management paradigm described by Brown and Harris (1993), it is unlikely the Forest will be able to refreeze and reach a consensus as to its identity and future direction.

7. CONCLUSION

This study sought to provide insight as to the organizational shifts and responses that have occurred within the Willamette National Forest over the last three decades. Through the use of semi-structured interviews with senior Willamette staff it was found that senior employees perceive that a great number of significant changes have occurred during the last thirty years. Moreover, it appears these changes have occurred at both the more conceptual and concrete levels of the organization. Changes include: 1) Reductions in budget and staff size; 2) The presence of fewer forest service employees in local communities; 3) A shift away from a timber dominated mission; 4) Greater involvement with external agencies, NGOs, and the public; 5) Increased collaboration among departments; and 6) Advances in technology.

Mintzberg’s and Westley’s (1993) framework for analyzing organizational change, as well as respondents’ comments, suggest that the Forest is currently undergoing a “stage of struggle” and has yet to transition into Lewin’s (1947) stage of refreezing. In addition, Lewin’s three-step intervention model of change hints at the need to encourage further dialogue among employees, while continuing to document and study employees’ perceptions of change. Doing this may allow managers to better understand and direct the changes occurring at the Forest by illuminating which changes should be reinforced and which changes should be done away with.
Lastly, as senior Willamette staff begin to retire and positions open up [particularly those at the management level], the hiring of younger staff is likely to lead the Forest further away from its past paradigm of “timber was king” toward one that emphasizes public participation, a balanced concern for providing amenity and other non-commodity forest values, and managing the natural environment to protect ecosystem functions, processes, and biodiversity. Over time, this change in staff may lead to a clearer mission statement and identity for the Forest. Until this turnover occurs and a critical mass is reached, it is likely these aspects of the Forest will continue to remain in a state of flux.

7.1 Limitations

Methods

The inductive nature of this study along with its limited population sample, make the results presented in this paper extremely specific in nature. This limits the general applicability of findings to the entire Forest especially with younger or more recently hired employees. While case studies in this academic area have been encouraged by various scholars (Brown and Harris 2000, 2010; Mintzberg and Westley, 1992; Weick and Quinn, 1999), this study fails to take into account the entire staff population of the Willamette. Had younger or more recently hired employees been asked to respond to the same questions, it is entirely possible that their answers may have been significantly different from those of their senior counterparts. In addition, because this study utilized semi-structured interviews as its method of data collection, it is possible that phenomena such as the interviewer effect (Denscombe, 2007), or untruthful answers, were present.
Organizational change is a broad and diverse field of study that continues to evolve. Mintzberg and Westley’s framework, while valuable, implies three conclusions for research on change in organizations: 1) the need to make organizational context clear, 2) the necessity of comprehensive description over time, and 3) the need to understand relationships between actors in a change situation and patterns of activity. A key development for the field will be further study of the interaction between both levels and contexts of organizational change. As the Willamette National Forest and other government organizations continue to adapt to congressional budget cuts, environmental statute requirements, and a more diverse workforce, it will be important to continue to document and study the effectiveness of both conceptual and concrete changes to these evolving challenges.

7.2 Recommendations for Future Research

Despite the contribution of this research to the field of organizational change and the study of shifts within the Forest Service, there are myriad avenues that should be pursued for future research. One of the more obvious is the repetition of this study among non-senior employees at the Willamette. Conducting this sort of analysis could provide a better overall picture of employees’ perceptions of change within the organization and may highlight any significant differences of opinion among those who have worked at the Forest for a long period of time and those who have not. In addition, it could serve to alleviate some of the issues of selection bias inherent in this study and provide valuable insight as to whether or not younger and more recent employees’ beliefs, values, and techniques are indicative of a post timber resource management paradigm.
Lastly, at the broader level, future research on the Forest Service should continue to track changes in employee’s perceptions of change, both through the use of survey analysis and semi-structured interviews. Ideally, studies of this sort should be done both at the micro level (specific Forests) and the macro level (agency wide). Better understanding the changes that have occurred—and continue to occur—within the Forest Service, will be essential for future managers hoping to move the agency in the direction of becoming a stronger learning organization.
BIBLIOGRAPHY


Bolick 85


APPENDICES

Appendix A: Informed Consent

INFORMED CONSENT FORM

Project Title: Organizational Shifts within the U.S. Forest Service: A Case Study of Willamette National Forest Employees

Principal Investigator: Denise Lach, Ph.D

Student Researcher: Zachary Bolick, MPP Candidate

Sponsor: National Science Foundation

Version Date: Sept 26, 2012

1. WHAT IS THE PURPOSE OF THIS FORM?

This form contains information you will need to help decide whether to participate in this study or not. Please read the form carefully and ask the study team member(s) questions about anything that is not clear.

2. WHY IS THIS STUDY BEING DONE?

This research is designed to provide critical insight into the organizational shifts that have occurred over the last three decades within the Willamette National Forest. Through this specific case study, we will explore changes over time in the attitudes and beliefs of Willamette National Forest personnel about the mission of the Forest and the USFS. Such a study should help USFS managers in identifying both the barriers and catalysts to cultural shifts within their forest. Furthermore, conducting this analysis may aid future researchers in examining related natural resource topics in public administration.

Up to 100 people will be invited to take part in this study.

3. WHY AM I BEING INVITED TO TAKE PART IN THIS STUDY?
You are being invited to take part in this study because of your experience working for the Willamette National Forest.

4. WHAT WILL HAPPEN IF I TAKE PART IN THIS RESEARCH STUDY?

If you decide to take part in this research a researcher associated with this study will interview you for a period estimated to not last more than one hour. (if you do not wish to be recorded then you should not participate in this study). The researcher will ask you a set of semi-structured questions to learn more about your experience working for the Willamette National Forest. Your interview will be one of several that researchers will compile and analyze to learn how the employees of the Willamette National Forest have experienced and adapted to changes within their organization. This information will then be transcribed and analyzed before being synthesized into a report. The report will be used for the student researcher’s Masters project and will also be used as a case study for providing insight into what’s happened within the Willamette National Forest over the last thirty years.

Researchers anticipate interviews to be completed by the end of the fall quarter in 2012 and that the report will be finalized by the beginning of spring 2013. Your participation is only anticipated to be about an hour for the interview. If more time is needed researchers will ask your permission to spend more time talking.

Recordings: We would like to record your interview. Recordings are only being done to allow researchers to accurately transcribe your interview and to ensure what you say is accurately depicted by researchers.

_____ I agree to be audio recorded

Initials

_____ I do not agree to be audio recorded

Initials

Bolick 89
Future contact: We may contact you in the future for another similar study. You may ask us to stop contacting you at any time.

Study Results: Study results will be submitted to the Oregon State Library. If you wish to view a hard copy of the report it can be found at the Oregon State Library. Or, if you would like to receive an electronic copy of the report please inform the researcher.

5. WHAT ARE THE BENEFITS OF THIS STUDY?

This study is not designed to benefit you directly.

6. WHAT ARE THE RISKS AND POSSIBLE DISCOMFORTS OF THIS STUDY?

There is a risk that we could accidentally disclose information that identifies you and a risk that you might become emotional during the interview. Steps will be taken to mitigate this risk including those outlined in sections 9 and 10 of this form. In addition, there is a risk that coworkers may see you participating in your interview. To minimize this risk we are allowing you to choose the location of your interview.

7. WILL I BE PAID FOR BEING IN THIS STUDY?

You will not be paid for being in this research study

8. WHO IS PAYING FOR THIS STUDY?

The National Science Foundation is providing minimal financial support paying for this research to be done.

9. WHO WILL SEE THE INFORMATION I GIVE?

The information you provide during this research study will be kept confidential to the extent permitted by law. Research records will be stored securely and only researchers will have access to the records. Federal regulatory agencies and the Oregon State University Institutional Review Board (a committee that reviews and approves research studies) may inspect and copy records pertaining to this research. Some of
these records could contain information that personally identifies you. If the results of this project are published your identity will not be made public.

Audio recordings of your interview will be kept confidential. The only individuals who will have access to the recordings will be the researchers associated with this study and named at the top of this consent form. As mentioned above, recordings will be kept and could potentially be used for future studies by researchers not associated with this study.

Direct quotes from your interview may be used in the final publication of this study. Your name and other identifiers will NOT be included with your quotes. Instead an arbitrary title will be attached to your quotes such as Employee1 or Employee2

To help ensure confidentiality, we will use a unique identifier that will be attached to all interviews and data associated with your interview.

10. WHAT OTHER CHOICES DO I HAVE IF I DO NOT TAKE PART IN THIS STUDY?

Participation in this interview is voluntary. If you decide to participate, you are free to withdraw at any time. If you choose to withdraw from this project before it ends, the researchers may keep information collected about you and this information may be included in study reports. Furthermore, choosing to participate or not participate in this project will NOT affect your employment.

Optional questions: If you do not wish to respond to any of the questions during the interview you can inform the researcher you want to skip the question.

11. WHO DO I CONTACT IF I HAVE QUESTIONS?

If you have any questions about this research project, please contact: Denise Lach, the Principal Investigator for this study. She can be reached at 541-737-5471.
If you have questions about your rights or welfare as a participant, please contact the Oregon State University Institutional Review Board (IRB) Office, at (541) 737-8008 or by email at IRB@oregonstate.edu

12. WHAT DOES MY SIGNATURE ON THIS CONSENT FORM MEAN?

Your signature indicates that this study has been explained to you, that your questions have been answered, and that you agree to take part in this study. You will receive a copy of this form.

Participant's Name (printed): __________________________________________

_________________________________________  _____________________________
(Signature of Participant)  (Date)

_________________________________________  _____________________________
(Signature of Person Obtaining Consent)  (Date)
Appendix B: Interview Questions

INTERVIEW QUESTIONS

Project Title: Organizational Shifts within the U.S. Forest Service: A Case Study of Willamette National Forest Employees

Principal Investigator: Denise Lach, Ph.D

Student Researcher: Zachary Bolick, MPP Candidate

Sponsor: National Science Foundation

Version Date: Sept 26, 2012

1. COULD YOU DESCRIBE TO ME YOUR POSITION AND ROLE HERE AT THE WILLAMETTE NATIONAL FOREST?

Clarifying questions are likely to be asked during this interview question based upon the interviewee’s response including “how long have you worked at the Forest,” “how have your job responsibilities changed over the years,” etc.

2. WHAT ARE SOME OF THE MAJOR CHANGES THAT YOU HAVE NOTICED AT THE WILLAMETTE NATIONAL FOREST DURING YOUR TIME?

Follow up questions may include asking the interviewee about aspects of the organization that have remained the same.

3. HOW HAVE YOU AND OTHER WILLAMETTE NATIONAL FOREST SERVICE STAFF ADAPTED TO THE CHANGES YOU IDENTIFIED?

Depending upon the interviewee’s response, more detailed questions about the successes and difficulties of the forest may be asked.
4. WHAT KINDS OF CHANGES HAVE YOU SEEN CONCERNING THE WAY IN WHICH THE FOREST INTERACTS WITH OTHER ORGANIZATIONS?

Clarification questions might include, how do those changes affect the business of the Willamette National Forest? How do these changes affect partnerships with other organizations?

5. HOW DO YOU THINK THE CURRENT MISSION OF THE WILLAMETTE NATIONAL FOREST IS LIKELY TO CHANGE IN THE FUTURE?
Appendix C: Willamette National Forest Interview Codebook

I. Culture and vision (Primary coding)
   a. Identity (Secondary coding)
      i. Timber WAS king (Tertiary coding)
      ii. Current confusion
   b. Employee relationships
      i. Less face-to-face contact at work
      ii. Decline in social interactions
      iii. Increased district and department collaboration
   c. Surrounding communities
      i. Residence locations of employees
      ii. Forest and community interactions
   d. Career advancement and turnover

II. Structure of decision making in the agency
    a. Consolidation of districts
       i. Districts
    b. Centralization
       i. Human resources and IT staff
       ii. Budget and hiring

III. Systems, procedures, and programs
    a. Funding sources
       i. Greater reliance on grants
       ii. Less direct federal and timber funding
    b. Relationships with external partners
       i. Non Government Organizations (NGO’s)
       ii. Outside regulatory agencies
       iii. Greater public involvement
       iv. Increased contracting
    c. Program focus and strategy
       i. Timber
       ii. Fire
       iii. Natural Sciences
    d. Training requirement increase

IV. People, jobs, and facilities in the agency
    a. Staff Size
       i. Reduction in workforce
       ii. Decline in hiring of seasonal employees
    b. Position specialties
       i. Hiring of more natural science specialists
       ii. More management oriented positions
    c. Employee demographics
       i. Female representation
       ii. Age
       iii. Education
       iv. Outside vs. Local
    d. Technology and related skills