

Citizen Involvement in Environmental Bureaucratic Decision-making: Communicative Action in Forest Service NEPA  
Projects

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**Abstract**

Citizen Involvement in Environmental Bureaucratic Decision-making: Communicative Action in Forest Service NEPA Projects

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Decisions surrounding environmental management involve inherent tradeoffs, which affect people's values and interests, often in uncertain ways. As is the case with a wide variety of social problems, there are multiple perspectives regarding environmental decision-making. These perspectives compete for influence over deciding the importance of issues, the best course of action, and even the right questions to ask. Historically, it has been difficult for the public to influence Forest Service decision-making, fueling tensions and conflicts. By applying Jürgen Habermas' theory of communicative action, which states that communication should ideally lead to the building of understanding, this study evaluates current Forest Service decision-making processes and looks to better understand the public's perspectives of these processes.

This study uses case study methodology to delve into two project level Forest Service National Environmental Policy Act (NEPA) decision-making processes. Combining extensive document analysis and interviews, this study gathers information to better understand the comprehensibility, truth, sincerity, and legitimacy of communication between the agency and the public. This study found that in the two Forest Service NEPA projects analyzed, the agency has begun to improve their communication, and while not fully achieving communicative action, they are certainly moving towards it. This research highlights a number of recommendations for improving Forest Service communication in order to improve relationships with the public and reduce conflict.

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## Glossary and List of Acronyms

<b>Communicative Action</b>	Communicative action occurs when, through communication, participants “arrive at an uncoerced, rationally-based consensus about the truth – i.e., what is good, correct, proper, or should be done – about the subject being discussed”
<b>NEPA</b>	NEPA stands for the National Environmental Policy Act. NEPA was passed in 1970 and requires that federal agencies consider environmental impacts in their decision-making. NEPA and its subsequent regulations establish procedural requirements for the decisions-making process including publishing disclosure documents and public participation.
<b>CEQ</b>	CEQ stands for the Council on Environmental Quality. CEQ “coordinates Federal environmental efforts and works closely with agencies and other White House offices in the development of environmental policies and initiatives.”
<b>NEPA Document</b>	NEPA documents are disclosure documents that discuss the background evaluation of the environmental impacts of a proposed project or decision. These documents offer the analysis for various ecosystem traits such as wildlife and water. NEPA documents have specific names – the Environmental Impact Statement or Environmental Assessment.
<b>EIS, DEIS, &amp; FEIS</b>	EIS stands for Environmental Impact Statement. An EIS is one form of disclosure document required by NEPA as part of the decision-making process. Initially the agency must publish a draft EIS (DEIS) which the public comments on. Once these comments have been considered, the agency produces a final EIS (FEIS).
<b>EA</b>	EA stands for Environmental Assessment. An EA is one form of disclosure document required by NEPA as part of the decision-making process. The EA has fewer requirements than an EIS and requires somewhat of a different process than an EIS.
<b>FONSI</b>	FONSI stands for a Finding of No Significant Impact. A FONSI is a decision document produced by a federal agency after going through the NEPA process. A FONSI is issued if the agency produced an EA and found there were no significant environmental impacts. It indicates what the agency will implement.
<b>ROD</b>	ROD stands for Record of Decision. A ROD is a decision document produced by a federal agency after going through the NEPA process. A ROD is issued after the agency published the final EIS and it indicates what the agency will implement.
<b>NEPA Process</b>	The NEPA process is the process for how federal agencies propose, analyze, disclose, and engage the public around the potential environmental impacts of their projects. The NEPA process has a series of stages (see Figure 3.1 on pg. ).

**Scoping** Scoping is the first public participation stage in the NEPA process. Scoping is comprised of a 30-day public comment period during which the agency invites participants to comment on a proposed action. At this stage the public is asked to comment on the scope of the project and to identify possible significant issues that the project may create.

**DEIS Comment Period** The DEIS comment period is the second public participation stage in the NEPA process. The comment period lasts for 45 days after the release of the Draft EIS. At this stage agencies look for feedback on the alternatives they've developed, their evaluation of the environmental impacts, and suggestions for which alternative to implement.

**Appeal Period** The appeal period is the last stage for public participation NEPA Process. This stage lasts 45 days. If any appeals of the decision are received and accepted, the agency must make attempts to resolve the appeal. If no resolution is reached, the agency must then make an appeal decision within 45 days after the end of the appeal period, either affirming or reversing the responsible official's decision in whole or in part.

**Interlocutors** Interlocutors are individuals who take part in a dialogue or conversation.

**Flesch Readability Test** The Flesch Readability Test is a test designed to assess the readability of a document. The test results in a Flesch score and grade-level assessment. For more on the Flesch Readability Test see page 47.

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## CHAPTER ONE: Introduction

Since the 1970s, there has been increasing conflict and tension surrounding decisions about how best to manage National Forests (Brunner & Steelman, 2005; Clarke & McCool, 1985; Keele, Malmshiemer, Floyd, & Perez, 2006). These conflicts have manifested in protests, increased scrutiny of Forest Service decision-making, and increasing levels of appeals and litigation (Keele, Malmshiemer, Floyd, & Perez, 2006). This conflict is largely caused by the complexity inherent in making environmental management decisions. There is not a clear set of values or objectives that managers should attempt to create and maintain in environmental management. Rather, a diverse array of complex interests, values, and issues surround every management decision, ensuring that there is little agreement between citizens, policymakers, or public administrators.

Such conflict has not always been the norm for forest management decisions. Established in 1905, the Forest Service is charged with managing and protecting the nation's timber resources (Steen, 2004). Gifford Pinchot, the agency's first Chief Forester, pushed the agency to "provide the greatest amount of good for the greatest amount of people in the long run" (USDA Forest Service, 2010). In this role, the Forest Service was seen as protecting national security by ensuring timber resources would be available into the future. To meet this mission, the agency initially focused on developing and researching forest management practices to efficiently produce and conserve timber. At the time, US timber demand was largely met by private supply, ensuring that the timber harvest from the National Forests was quite small. The agency became known for its efficient management approach and was regarded as a model of bureaucratic effectiveness.

Following World War II, the Forest Service's operating environment shifted. With an expanding population, a booming construction industry, and increases in leisure time, the demand for timber resources grew at an unprecedented rate (USDA Forest Service, 2002). Private forestlands could no longer meet this expanding demand, and so more and more timber harvest came from federal lands. Previously, only small quantities of timber were cut from National Forests, now large quantities were being cut and sold in what could be called the "housing and custodial era" of National Forest management. Prior to World War II, the Forest Service on average harvested slightly under a million board feet per year (USDA Forest Service, 2011). Following the war, timber production steadily increased to an all time high in 1987 of about 12.7 million board feet. In addition to increasing amounts of harvested timber, the amount of land that the Forest Service managed also increased. In 1905, the

agency managed 60 million acres; now the agency oversees 193 million acres of forests and grasslands, and nine Regional Offices oversee activities in 155 National Forests and 20 National Grasslands.

As the Forest Service began increasing the harvesting of timber resources, the interests of the American public began to shift. Americans began pursuing recreational opportunities in National Forests. Additionally, large segments of the population began to worry about wildlife species loss and began lobbying for greater protection of species such as the Northern Spotted Owl. The Forest Service, oriented toward cutting timber, was ill equipped to incorporate these emerging interests into their management of the National Forests (Devall, 1972). Increasingly, environmental interest groups and the general public criticized the agency's emphasis on harvesting timber. This opposition initially led to a series of laws that Congress passed to encourage the agency to consider multiple uses for the National Forests. A series of lawsuits ensued that essentially forced the end of logging in many areas. Now, the Forest Service is placed in a role of active management where they are charged with ensuring forest resilience, restoration, biodiversity protection, recreation value, and many other values and interests in addition to harvesting timber.

The story of the Forest Service is just one example of the conflict and complexity in environmental management and decision-making. Researchers have classified and documented the increasing difficulty citizens encounter trying to articulate their interests and influence the bureaucratic decision-making arena (Fischer, 2000; Killingsworth & Palmer, 1992). Bureaucratic decision-making, which initially was tied to democratic values, has often become an "us-versus-them" exercise between bureaucratic experts and other interests (Fischer, 2000). In such an exercise, bureaucrats manage a decision-making process that enhances conflict and reinforces divisions between the interests of various citizens and experts. While attempts have been made to reduce the tensions between citizens and experts, evidence suggests that such tensions are still prevalent today.

## **1.1 Research Objectives**

Past research has highlighted the development and extent of this expert-citizen tension in bureaucratic decision-making. Additionally, many researchers have investigated the controversies that routinely occur in Forest Service decision-making processes. This research focuses on how agency managers (the experts) design, implement, and involve the public in their decision-making processes. However, little research exists that investigates how citizens perceive Forest Service decision-making

processes and their public involvement efforts. This thesis is an initial step towards examining these perceptions. It is my hope that understanding these needs can contribute to the creation of public participation processes that allow the public to influence decisions in a way that improves Forest Service management of the nation's forest resources.

Underlying successful public participation in bureaucratic decision-making is communication between experts and citizens. Thus, to better understand public perceptions of Forest Service decision-making, my research focuses on understanding and evaluating the communication between the agency and the public. Using Habermas' theory of communicative action, which can be described as "communication aimed at coming to an understanding with others, the primordial form of human communication from which all other forms are derived." I strive to establish a replicable method to evaluate communication between the Forest Service and the public. It is beyond the scope of this research to provide broad general conclusions, and further research is necessary to understand fully on a broad scale communication between the agency and the public. Guiding this research are the following three overarching research questions:

- Research Question 1:** Does the current Forest Service National Environmental Policy Act (NEPA) process lead to communicative action?
- Research Question 2:** What does the public think about Forest Service NEPA processes and communicative action?
- Research Question 3:** How can the Forest Service foster communicative action in its NEPA processes?

By answering these questions, this research provides insight into the following four areas:

- ⇒ The comprehensibility of communication between experts and citizens;
- ⇒ The communication of truthful information between experts and citizens;
- ⇒ The sincerity of communication between experts and citizens; and
- ⇒ The role of communication in establishing legitimate decisions.

Finally, it is important to note that this thesis highlights the importance of both experts and citizens in managing public forests. As discussed earlier, forest management is not optimal when only experts make decisions, nor will forest management be optimal if citizens alone are the decision makers. This thesis attempts to begin a discourse on how best to leverage the knowledge of experts and citizens and the roles each play in the decision-making process.

## 1.2 Chapter Previews

The contents of the thesis chapters are as follows:

### **Chapter 2: The Divide Between Experts and Citizens**

This chapter addresses why elected officials have delegated their power to bureaucratic experts and the impact this has had on the ability of citizens to influence environmental decision-making. The chapter further discusses how public participation could possibly lessen the tension between experts and citizens. Finally, the chapter discusses the theory of communicative action and how designing public participation to achieve communicative action might reduce expert-citizen tensions.

### **Chapter 3: The Forest Service, NEPA, and Communicative Action**

This chapter discusses Forest Service decision-making and the impacts of the NEPA on the agency. The chapter further reviews evidence on whether the Forest Service currently communicates with the public in a way that leads to communicative action.

### **Chapter 4: Research Design and Methodology**

This chapter discusses the research methods used to evaluate communicative action in Forest Service decision-making. The chapter discusses how document analysis and interviews were used to evaluate two Forest Service projects. Finally, the chapter discusses limitations of the methods.

### **Chapter 5: Research Results**

This chapter discusses the findings of the research on each of the validity claims of communicative action: comprehensibility, truth, sincerity, and legitimacy.

### **Chapter 6: Conclusions and Recommendations**

This chapter discusses final conclusions about whether the Forest Service projects analyzed in this study allowed for communicative action. The chapter uses the research results from Chapter Five to answer the three overarching research questions. The chapter also discusses recommendations for how the Forest Service can improve their decision-making processes in order to move towards communicative action.

## CHAPTER TWO: The Divide Between Experts and Citizens

This chapter discusses literature and previous research on the rise of the bureaucratic expert and the decline of the American citizen's ability to influence bureaucratic decision-making. The literature discussed is quite broad and does not focus solely on environmental or Forest Service decision-making. This broad overview is important to better understand that the rise of expertise and bureaucratic decision-making occurred as part of a larger philosophical shift in how government operates. A detailed discussion of bureaucratic decision-making within the Forest Service is the topic of Chapter 3.

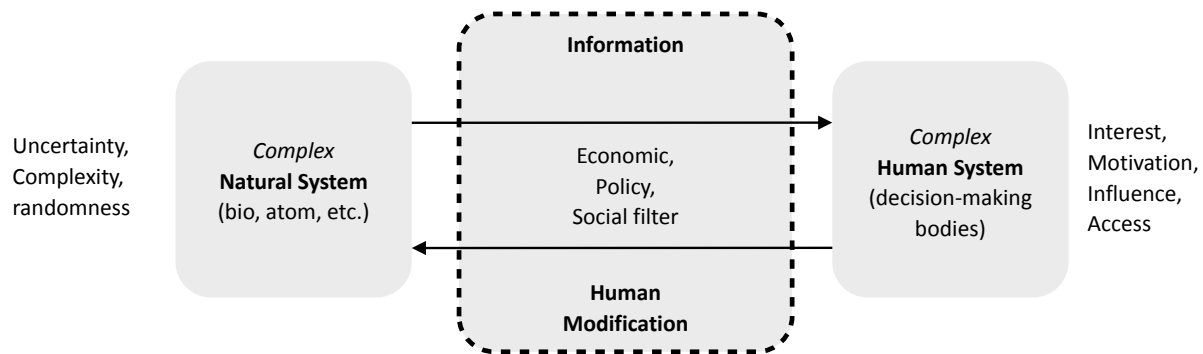
This chapter begins with a review of why experts have grown to be a driving influence in bureaucratic decision-making. Next, this discussion looks at how public participation efforts have allowed citizens to engage with experts while not actually reducing tensions between experts and citizens. Finally, this chapter reviews how shifting the way experts and citizens engage each other through communicative action may reduce expert-citizen tensions.

### 2.1 The Rise of Expert-Citizen Tensions

The rise of the bureaucratic expert in decision-making can be traced back to the post-World War II era. After winning the war, Americans turned their attention to rebuilding their country and fueling the expanding economy. During this time, policymakers faced many complex policy problems, including the management of America's vast natural resources. Environmental resource management operates in an ever-changing domain laden with rapidly changing science and technical details (Dietz & Stern, 2008; Jasanoff, 2005; Fischer, 2000; Dietz & Stern, 1998; Williams & Matheny, 1995). After centuries spent studying the natural environment, scientists are still mystified by the interconnected dynamics of an ecosystem's biotic and abiotic components. Thus, environmental management policy decisions are technically complex, requiring specialized knowledge in order to analyze, let alone predict the impact of a policy decision.

Adding further complexity to environmental management is that the natural system is coupled with the human system (Figure 1). In such a coupled system, humans impact and influence nature as nature simultaneously impacts and influences humans (Dietz & Stern, 1998; Dietz & Stern, 2008; Liu, et al., 2007). This coupling results in complex feedback loops, making it difficult to clearly forecast the implications of human actions. Furthermore, since humans are dependent on the environment, any

decision on how to manage the environment invariably has political, social, cultural, and economic ramifications (Dietz & Stern, 2008; Liu, et al., 2007). Decisions about the environment involve inherent tradeoffs, which affect people’s values and interests, often in uncertain ways. As is the case with a wide variety of social problems, there are multiple perspectives regarding environmental decision-making. These perspectives compete for influence over deciding the importance of issues, the best course of action, and even the right questions to ask (Dietz & Stern, 2008; Dryzek, 1990; Feldman, Khademian, & Ingram, 2006; Forester J. , 1989; Healey, 1997; Ingram & Smith, 1993; Schneider & Ingram, 1997; Stone, 1997).



Adapted from Science Education Resource Center at Carlton College  
[http://serc.carleton.edu/NAGTWorkshops/complexsystems/coupled\\_systems.html](http://serc.carleton.edu/NAGTWorkshops/complexsystems/coupled_systems.html)

Figure 1: Coupled Complex Natural and Human System

Partially as a result of the complexity inherent in environmental management, policymakers turned to scientific management as a solution to ensure the establishment of efficient policies (Brunner & Steelman, 2005). Scientific management seeks to rise above politics by using science as the basis for policy decisions, to establish a “single central authority – a bureaucratic structure with the appropriate mandate, jurisdiction, and expert personnel” (Brunner & Steelman, 2005). This represented a shift in policymakers’ philosophy towards government decision-making focused on efficiency, information, and optimal decision-making. The origins of this philosophical shift can be traced back to the Progressive era when advocates began arguing for the separation of politics from administration. Progressives argued that elected politicians should set broad goals for public policy, but leave implementing policy to expert administrators (Taylor, 1985; Williams & Matheny, 1995). Progressives believed that carrying out policies was a technical matter requiring the application of specialized expertise located in bureaucratic organizations. Furthermore, it was thought that experts could act as neutral administrators with the ability to carry out policies in the most efficient way to serve the public interest to a greater extent than uninformed or corrupt elected politicians. These expert administrators were increasingly relied on to

make decisions and were tasked with the discovery of an objective public interest. James Landis, the architect of the Securities and Exchange Commission and one of the most influential regulators from 1930 to 1960, provides a clear depiction of governmental needs for experts (Landis, 1938):

Government today no longer dares to rely for its administration upon the casual office-seeker. Into its services it now seeks to bring men of professional attainment in various fields and to make that service such that they will envisage governance as a career. The desires of these men to share in the mediation of human claims cannot be denied; their contributions dare not casually be tossed aside.... The rise of the administrative process represented the hope that policies to shape such fields could most adequately be developed by men bred to the facts. That hope is still dominant, but its possession bears no threat to our ideal of the "supremacy of law." Instead, it lifts it to new heights where the great judge, like a conductor of a many-tongued symphony, from what would otherwise be discord, makes known, through the voice of many instruments the vision that has been given him of man's destiny upon this earth.

As a part of this progressive philosophy toward public administration, the use of information became central to political thought and decision-making. Ultimately, this reliance on information and knowledge has become the fundamental organizational principle of society (Beniger, 1986; Forester T. , 1985; Poster, 1990). Policymakers hailed the "information society" as the next big advance in social progress (Winner, 1977), and saw it as a great opportunity to create solutions to the complex problems they were facing. However, it wouldn't be policymakers who interpreted and based decisions using this information. Rather, they began to rely more on experts to meaningfully interpret this vast amount of information to make decisions (Fischer, 2000). This ensured that the traditional role of political parties and politicians in the policy making process shifted with the rise of the modern bureaucratic state as they were replaced by policy and scientific experts who determined the direction and development of policy (Fischer, 1990; Evans & Boyte, 1992; Hecl, 1974; Hecl, 1976; Hall, 1993; Keren, 1995).

#### **View of Using Science Alone to Make Policy Decisions**

*[Technological revolution] 'has emphasized as never before the role of government as a stabilizer of civilization' [and confronted it with bewildering complexities. But] 'technology has brought with it a procedure helpful in solving problems it has created; namely the scientific method,' which 'promises to work a revolution in politics...It punctures classical oratory – conservative as well as radical...Disputes about democracy, therefore, creak with rust.'*

- Charles Beard, 1931

The influence of Progressive era philosophy and an expanding role for using information in policymaking is the foundation for why policymakers delegated decision-making authority to bureaucratic experts. In a way this makes sense, for "without interpretation, the data carried by the

increasing flows of information are as meaningless as they are overwhelming” (Fischer, 2000). To interpret and create meaning from the cacophony of information experts use their “mastery over a body of knowledge and its relevant techniques” (Fischer, 2000).

The increasing level of information and expertise has limited citizens’ ability to engage in bureaucratic decision-making processes. The complex information that experts interpret may not be readily understandable by an average citizen; however, this alone doesn’t mean that the citizen cannot influence and direct experts on how to use that information in decision-making. Rather, citizens have lost power in decision-making because of a philosophy adopted by most experts called technocratic reasoning. Some of the first writing on technocratic reasoning came from the eighteenth-century French Enlightenment. These writings express that “technocratic thought is fundamentally founded on an unswerving belief in the power of the rational mind’s ability to take control of the natural and social worlds” (Fischer, 2000). It is this basic sentiment that infiltrates the thinking or reasoning of many experts. These experts rely on neutral scientific criteria to made decisions (Hanson, 1985; Williams & Matheny, 1995). Thus, technocratic experts place emphasis on empirical measurement, analytical precision, and a concept of “system” as the foundation for how they view the world.

This technocratic approach gives experts a sense that empirical data can lead them to rational outcomes. To experts, rational thinking is based purely on facts, not interests, and in procedures, not political action (Killingsworth & Palmer, 1992). This thinking has led experts to view the political context as one of ‘us’ and ‘them,’ pitting the knowledgeable and rational experts against the uninformed and emotional public (Hays & Hays, 1987). It is this division that ultimately reduced the influence of citizens in bureaucratic decision-making. Experts held little regard for the concerns and values of a public that doesn’t rely on science and facts to analyze or discuss problems (Fischer, 2000). Thus, experts have relegated the public and their input from consideration in making decisions.

As public participation requirements were established, experts began communicating with the public, but with the main purpose of influencing and persuading the public that the expert interpretation of reality was correct. Using what researchers have called instrumental rationality, experts engaged in discourse with the purpose of convincing a lay audience that the institution’s decisions were reasonable, proper, and necessary (Dayton, 2002). Discourse motivated by instrumental rationality used steering mechanisms to coerce the public into accepting the expert’s path of action (Killingsworth & Palmer, 1992; Poster, 1989). If the public provided a deviant discourse, experts ultimately treated it as “noise” and disregarded the public’s concerns (Dayton, 2002).

By using instrumental rationality, experts subjugated the role of the general public so that citizens became clients to the system rather than participants. It ensured that those with access to technical knowledge and skills were given power and legitimacy. Conversely a lack of knowledge hindered the possibility of active involvement. Furthermore, the technical language of experts provides an intimidating barrier for lay citizens seeking to express their disagreements in the language of everyday life (Fischer, 2000). It isolates the role of the citizen from the decision-making process, “a cleansing of political participation from any participatory content” (Habermas, 1984). Barber & Bartlett (2005) argue that this dichotomy between experts and citizens has degenerated political institutions “into arenas for strategic gamesmanship in which there is no possibility of genuine deliberation.”

Ultimately, this narrowing of the citizen’s role in decision-making is seen as anti-democratic. Citizens of the state should be able to choose influence government action; thus, they should be able to at some level influence bureaucrats and the decisions they make. Democratic governments should work not for the good of the public in the sense of what the public needs, but of the wants of the public as expressed by the public (Finer, 1941; National Research Council, 1996). Instead, experts work to define the public good for citizens rather than listen to how citizens define the public good. For example, the Forest Service interpreted the public good as producing large quantities of timber, yet in reality the public wanted much more from their National Forests. In addition to timber production, they also wanted to protect the environment, recreate, and see wildlife in these forests. This combination of the complexity of environmental problems, the increasing role of experts, their philosophy of technocratic reasoning, and mismatched interpretations of the public interest have led to extreme tensions between experts and citizens.

## **2.2 Reducing Expert-Citizen Tensions through Public Participation**

Initially, the public offered little protest to the delegation of decision-making authority to bureaucratic experts. The public accepted the need to use scientific management to remove corruption and political pandering from the decision-making process. Furthermore, their interests were aligned with the goals and mission of many bureaucracies. However, while public interests and opinion evolved throughout the 20<sup>th</sup> century, the bureaucracies’ goals did not. As the interests of experts and citizens diverged, citizens found it difficult to present their views to experts. Essentially they were excluded from bureaucratic decision-making. This led the public to increasingly claim that agency decisions were

illegitimate and that they failed to “follow basic principles of good decision-making” (Dietz & Stern, 2008) (Dahl, 1989; 1998; Finer, 1941; Held, 1987; Morone, 1990; Schlozman & Tierney, 1986).

Realizing the implications of the public’s distrust of agency decisions, policymakers attempted to reduce the tension between experts and citizens by democratizing bureaucratic decision-making. Policymakers hoped that by doing so they could ensure policies and programs were designed to enlighten, empower, and engage citizens in the process of self-government (Fischer, 2000) (Table 1). Such efforts were established to reorient the expert vis-à-vis the citizen so that: “public managers [would] assume responsibility for defining the purposes they seek to achieve, and therefore to participate in [] political dialogue” (Moore, 1983). In this reorientation managers would strive to form a deliberative relationship with citizens and actively foster public deliberation with the goal to build legitimacy for policy decisions through a process of civic discovery (Reich, 1990; 1988). To foster such a reorientation, policymakers began requiring agencies to conduct public participation as part of their decision-making process (Summers, 1987; Blahna & Yonts-Shepard, 1989).

**Table 1: Examples of Government Action Mandating Public Participation in Bureaucratic Decision-making**

Government Action (Year)	Public Participation Requirement	United States Code
Administrative Procedures Act (1946)	Established general procedures for Federal agencies to use in developing policy, promulgating rules, notifying the public and other agencies of their intentions, requesting public information and disseminating information to the public, and receiving comments from the public and other agencies.	5 U.S.C. §§ 551 to 559, 701 to 706
National Environmental Policy Act (1969)	Requires federal agencies to inform one another and the public of the expected environmental, social, and economic consequences of proposed actions and created a prescriptive public participation process to solicit comments from the public (NEPA Section 102C(v)).	42 U.S.C. §§ 4321-4347
Clean Air Act (1970)	Expanded the role of the public by including a citizen’s right to sue under specific statutes.	42 U.S.C. §§ 7401
Freedom of Information Act (1966 & 1974)	Provided citizens with stronger legal authority for meaningful participation by establishing the public’s right to obtain information from federal agencies.	5 U.S.C. §§ 552
Federal Advisory Committee Act (1972)	Established standards and uniform procedures to ensure advisory committees serve public rather than private interests. Advisory boards are now required to be “fairly balanced” in terms of points of view and have a formal charter.	5 U.S.C. App.
Executive Order 13563 (2011)	President Barack Obama established executive order 13563 in 2011 to improve regulation and regulatory review. The order called for regulations to be “adopted through a process that involves public participation. To that end, regulations shall be based, to the extent feasible and consistent with law, on the open exchange of information and perspectives among State, local, and tribal officials, experts in relevant disciplines, affected stakeholders in the private sector, and the public as a whole.”	None

In the broadest sense public participation is “a process by which public concerns, needs, and values are incorporated into governmental and corporate decision-making” (Creighton, 2005). This can include education and information, review and reaction, and interaction and dialogue. Participation can take the form of lobbying, public advocacy and protest, public hearings, solicitation of public comments, political party involvement, voting, payment of taxes, and jury service (Spyke, 1999). Even litigation can be a form of public participation. While these various activities all represent public participation, the type of public participation policymakers were using to address the expert-citizen conflict was much narrower. Practically, this type of public participation can be defined as an “organized processes adopted by government agencies to engage the public in environmental assessment, planning, decision-making, management, monitoring, and evaluation” (Dietz & Stern, 2008).

Policymakers saw public participation mandates as a solution to the expert-citizen conflict because at its heart, public participation is based on democratic values. Such participation can provide opportunities for political equality and popular sovereignty and human development based on self-governance (Priscoli, 1978; Sewell & O’Riordan, 1976; Dewey, 1923; Barber, 1984; Habermas, 1987; Habermas, 1996; Held, 1987; Shapiro, 2003). The major outcome of public participation is to expose decision makers to a mix of perspectives by fostering citizen inclusiveness that can result in a redistribution of power along a continuum from one-way flow of information to complete citizen decision-making authority (Arnstein, 1969; Burke, 1979; Creighton, 1983; Buchy & Hoverman, 2000; Spyke, 1999). Many proponents of public participation state that the case for participation must begin with the normative argument that a purely technocratic orientation is incompatible with democratic ideals (Fiorino, 1990; Dietz & Stern, 2008). Instead public participation ensures that democratic governance can be a reality. Public participation acknowledges that citizens are the best judges of their interests and in a democracy, where government works to pursue the public interest; participation by citizens allows democracy to exist (Fiorino, 1990; Cashmore, 2004).

Besides its normative benefits of public participation can also provide substantive and instrumental benefits (Dietz & Stern, 2008). Incorporating public participation into decision-making can:

- ⇒ **Improve the decision’s quality.** When the public is involved in decision-making they provide local knowledge that serves as a corrective measure for technical analysis that often misrepresents the local context in which it was being applied (Peterson & Stunkard, 1989; Wynne, 1989; Vaughan, 1993; National Research Council, 1996; Dietz & Stern, 2008). Research

has shown that lay judgments are just as sound or even more so than those of experts and that the public may see problems, issues, and solutions that experts miss (Isaacson, 1986; Fiorino, Citizen Participation and Environmental Risk: A Survey of Institutional Mechanisms, 1990). Public participation ensures that a broader range of values and concerns are incorporated into decision-making, ultimately improving the decisions' quality (Fiorino, Citizen Participation and Environmental Risk: A Survey of Institutional Mechanisms, 1990).

- ⇒ **Make decisions more legitimate.** By allowing the public to participate and influence decisions, the public is often more willing to accept agency decisions as legitimate (Dietz & Stern, 2008; Fiorino, Citizen Participation and Environmental Risk: A Survey of Institutional Mechanisms, 1990; Kraft, 1988). Public participation often allows experts and citizens to build relationships and establish both credibility and trust. These relationships make final decisions more legitimate from all perspectives (Susskind, McMahon, & Rolley, 1987; Stern, The Power of Trust: Toward a Theory of Local Opposition to Neighboring Protected Areas, 2008; Predmore, Stern, & Mortimer, 2011).
- ⇒ **Build decision-making capacity.** Public participation can create ongoing relationships by building a level of mutual understanding and trust that makes continuing engagement operate more smoothly. Thus if the process is done well it benefits future decision-making, assessment, and implementation activities allowing future projects to proceed more efficiently (Schwarz & Thompson, 1990). Public participation can also be a means through which parties develop and refine their views and articulate, discover, and create shared interests (Fishkin, 1991; Gutmann & Thompson, 1996; Shannon & Walker, 2006). Lastly, the lay public may have better capacity than experts alone for accommodating uncertainty and correcting errors over time through deliberation and debate (Barber, 1984).

To ensure an even and fair discussion of public participation, it is prudent to disclose that public participation also has some disadvantages. Some theorists argue that public participation actually conflicts with collectivist theory and republicanism, which they posit are the true foundation of American government, not democracy (Spyke, 1999). At a more practical level, a real disadvantage of public participation can be its inefficiency, which often requires agency to expend more time and money than if the public was excluded. Additionally, when decision makers strive to accommodate a wide variety of interests they can result in lowest-common-denominator solutions that offer little benefit. Furthermore, the old Progressive philosophy suggests that the public may have difficulty understanding

the complex nature of analyses needed for good environmental assessments and decisions (Dietz & Stern, 2008).

### 2.3 Public Participation: An Imperfect Solution

So now we must ask: Have public participation mandates allowed citizens to effectively influence bureaucratic decision-making and increase the legitimacy of these decisions? Evidence suggests that if an agency uses best practices then public participation can advance decision quality, legitimacy, and capacity simultaneously (Dietz & Stern, 2008). However, it is unclear how often agencies rely on such best practices when engaging the public. Reviewing the general discourse around land management decision-making suggests that this achievement is quite rare. Land management agency decisions are still regularly appealed and litigated and experts and citizens continuously discuss the adversarial nature of their interaction.

These continuing tensions, researchers argue, survive mainly because bureaucratic experts persist in following technocratic reasoning despite the public participation mandates (Dayton, 2002; Forester J. , 1989). Just because experts are forced to hear public concerns, there is no requirement that they actually refine a project based on this input. Thus, the public participation processes have not been able to achieve their original intent. Bureaucrats go through the motions of engaging the public with no intent of allowing their “unscientific” concerns and advice influence their scientific decision-making process. In a way, experts began using instrumental rationality even more to attempt to and persuade or divert public concerns. Public involvement became synonymous with one-way communication sessions where experts would spew an outpouring of highly technical commentary to a public audience who were immediately confused (Blahna & Yonts-Shepard, 1989). Such “participation” discouraged many citizens from engaging with experts and offered little to no opportunity for them to voice their concerns or to have their concerns given any credibility.

Additionally, evidence suggests increased levels of public participation may have increased tension between experts and citizens. One reason this might occur is the desire by agencies to ensure they are not “captured” by outside interests. Agency ‘capture’ occurs when either the entire agency or a subset of agency personnel adopt interests tightly aligned with interests of a faction of those they are tasked with regulating so they no longer defend the broader public’s interests or their own agency’s directives (Singleton, 2007). To combat the possibility of ‘capture,’ experts may rely even more heavily on scientific

management and their expertise in making decisions. By doing so they can ensure they are not 'captured' by outside interests that are viewed as subjective and divisive.

Adding to the concern over agency 'capture' has been the emergence of powerful interest groups (Spyke, 1999). Over time interest groups have become more influential in the decision-making process (Kweit & Kweit, 1981). Interest groups form around specific issues, such as recreation, timber, wildlife, and conservation. Each interest group believes its own set of issues is the most pressing consideration causing them to discount the values and interests of other stakeholders. This leads to public participation processes in which various interest groups compete for influence over decision makers. Each participant, despite the adversarial nature of participation, is convinced that their involvement should guarantee the achievement of their goal (Rosenbaum, 1978). Yet, decision makers who are left to interpret these disparate interests must make some tradeoffs in reaching a final conclusion, creating an arena of clear winners and losers in the public participation process (Farber, *Politics and Procedure in Environmental Law*, 1992). Upon the release of a decision, the agency is inundated with complaints from angry participants who believe their unique interest has been "slighted." Thus, these interest groups cite the "unwillingness" of decision makers to incorporate their objectives as justification for considering the decision illegitimate and for challenging the decision in court (Dahl, 1989; 1998; Finer, 1941; Held, 1987; Morone, 1990; Schlozman & Tierney, 1986). The increasing power and uncompromising tactics of interest groups have signaled to experts that public participation may lead to agency 'capture' and that using scientific management is the most effective solution to ensuring their decision-making autonomy.

This adversarial participation process has also enforced experts' views that the public is emotional and ill equipped to deal with the technical complexity of environmental problems (Fiorino, 1989). These interactions reaffirm the need for experts to use their objective technical reasoning and lead them to be increasingly reluctant to give up decision-making power (Lin, 1996). In some ways, it could be argued that this has provided experts with more reason to attempt to retain power and "subvert" the public participation process by using instrumental rationality. This pervasive use of instrumental rationality leads experts to develop a strategic discourse, called strategic action, which is oriented towards success and influencing other communication participants. Strategic action can be described as communication based on egocentric and individualistic attitudes, where the speaker "is oriented to attaining an end," "selects means that seem appropriate in a given situation," and "calculates other foreseeable consequences of action as secondary conditions of success" (Habermas, 1979). Jürgen Habermas provides a clear interpretation of how strategic action plays out in communication:

If the actors are interested solely in success, i.e., the consequences or outcomes of their actions, they will try to reach their objectives by influencing their opponent's definition of the situation, and thus his decisions or motives, through external means by using weapons or goods, threats or enticements. Such actors treat each other strategically.

By engaging in instrumental rationality, decision makers "value their own view of the world above all others and to use a discourse of expertise and authority designed to convince a lay audience that the institution's decisions are reasonable, proper, and necessary" (Dayton, 2002). This latent use of strategic action works to have participants believe that they are oriented toward understanding even through they systematically distort communication to achieve their ends or they may deliberately act in pseudo consensual manner to manipulate other participants (Dayton, 2002).

The continued use of instrumental rationality is evident to citizens who feel that administrators are paternalistic and use participation programs to legitimize previously made decisions (Farber & Frickey, 1991). They point out that technical experts fail to understand participation programs and may even refuse to take them seriously (Spyke, 1999). The public sees participation as an exercise in confrontation, governed by inflexible agency rules that afford only limited avenues for meaningful input (Kweit & Kweit, 1981; Wilkinson, 1976). This view establishes a positive feedback loop in which the public responds to the use of instrumental rationality resorting to more confrontational and adversarial means to influence decisions, thus signaling to experts the needs for more pervasive communication based on instrumental rationality (Predmore, Stern, & Mortimer, 2011). Thus, evidence suggests, that in certain situations rather than reduce conflict, public participation has perhaps fueled continual tension between experts and citizens rather than reducing conflict. Thus, decision-making is left in a state of tug-a-war were experts and citizens grapple for power and influence resulting in suboptimum decisions and loss of time, money, and resources.

So what can be done? It is clear that public participation alone has not reduced conflict around environmental decision-making. Instead, an approach must be taken to alter the approach experts use in their communication. Rather than using instrumental rationality to support their own interpretation, experts need to reorient their thought towards a new role where they accommodate deliberate dialogue around building a collective understanding and vision for environmental management. It is imperative that the two sides, experts and citizens, listen and communicate with each other to build true understanding of the public needs and the environmental implications of those needs. Only through this type of dialogue can true civic discovery and self-governance occur. As Williams and Matheny (1995) point out:

The key to establishing a dialogue approximating undistorted communication is not to rely on a single set of experts, supposedly divorced from political influence; neither is it to discard the use of scientific information entirely. Rather, all parties to a conflict must have the ability to verify or challenge independently the claims of other parties.

Besides just recognizing that a shift in expert rationality is necessary, we must understand what this new rationality should provide. I posit that this “new” rationality should be framed around what first was discussed by Jürgen Habermas as communicative rationality. Communicative rationality as described by Habermas leads to discourse and action that is fundamentally rooted in seeking understanding, in learning, and in building decisions and outcomes that allow all input to be valued in order to be legitimate. In the next section we will explore in more detail the theory of communicative action and its potential to shift the way experts and citizens rationalize their relationship in public participation processes.

## 2.4 Communicative Action

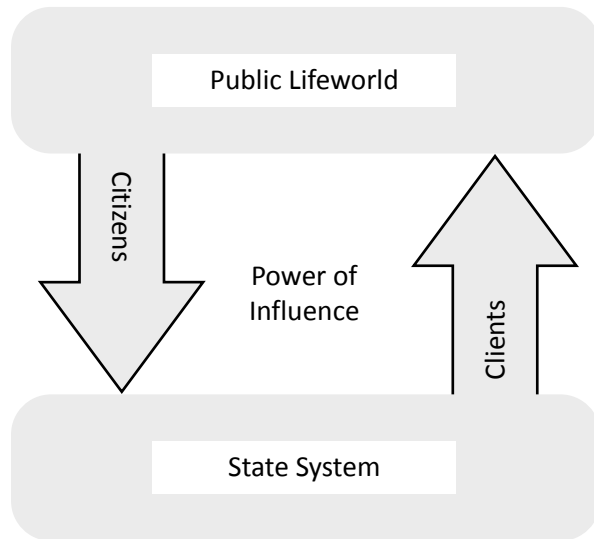
Habermas’ theory of communicative action is based on the concept of the ideal speech communication situation. The ideal speech communication situation occurs when interlocutors use communicative rationality to engage in conversation and dialogue.

**Interlocutors** are individuals who take part in a dialogue or conversation.

Unlike technical or instrumental rationality, communicative rationality sees interlocutors exchanging information in a manner that is “free, open, and unconstrained” by individuals’ selfish goals (Arnett, 2008). By engaging in the ideal speech communication situation, interlocutors engage in communicative action where participants “arrive at an uncoerced, rationally-based consensus about the truth – i.e., what is good, correct, proper, or should be done – about the subject being discussed” (Arnett, 2008). When engaging in communicative action participants are oriented to reaching an understanding among each other (Blyler, 1994; Dayton, 2002)

In his theory, Habermas distinguishes the origination of instrumental and communicative rationality from the “system” and the “lifeworld.” Instrumental rationality originates when the system, institutions like the bureaucratic state and the economy, attempt to achieve social solidarity by engaging in “steering mechanisms” to persuade the public to adopt their interpretation of events (Poster, 1989). Communicative rationality “characterizes action in what [Habermas] calls the lifeworld, that is, in areas of social action where socialization and cultural reproduction are at issue” (Poster, 1989). In an ideal speech communication situation, lifeworlds of social subjects are construed as interlocking nodes of a

network of overlapping spheres. Where these lifeworlds overlap - encouraged by the overlap of shared belief systems, historical events, good arguments, and other means of cultural identification - a space for action supported by consensus is created (Killingsworth & Palmer, 1992). Figure 2 shows how the state system interacts with public lifeworld. Notice how, when the state communicates to the public using instrumental rationality, the public becomes a client to the state. However, when the public engages in communicative rationality with the state, they become real citizens with power in decision-making.



In Habermas' theory of communicative action, the state acts as a system, using its power to influence individuals and make them clients to the system. When individuals instead use power to influence the state, they are acting as citizens.

Figure 2: **Habermas' Characterization of Lifeworld and System Interaction**

In reality, the use of instrumental rationality "distorts" the communicative process and hinders the ability to engage in communicative action. Yet, if interlocutors follow expected norms of behavior and restrict impending factors, such as "obviously *relevant participants* [being] excluded, *relevant contributions* [being] suppressed, and yes/no stances [being] manipulated or conditioned by other kinds of influences" to irreparably harm discussions, then communicative action is possible (Arnett, 2008). Habermas identified four fundamental criteria or "idealizing performative presuppositions," by which a discussion can be evaluated to determine if distortion occurs. These presuppositions were first introduced in *Communication and the Evolution of Society* (1979) and further detailed in *Truth and Justification* (2005). These four criteria are:

- ⇒ **Comprehensibility** – Participants in communication must be able to understand each other by using a common "referential system" (Habermas, 2005).
- ⇒ **Truth** – Participants in communication must intend to communicate "true propositional content" that is consistent across contexts (Habermas, 1979; 2005).

- ⇒ **Sincerity**<sup>1</sup> – Communication must occur “so that the hearer can believe the words of the speaker” and participants can be held accountable for their words and actions (Habermas, 1979; 2005).
- ⇒ **Legitimacy**<sup>2</sup> – Participants in communication must discuss claims that are framed in acceptable manners and follow rational rules of discourse (Habermas, 1979; 2005).

## Comprehensibility

The criterion of comprehensibility is based on the idea that interlocutors live in a common system originating from a common physical world. Individuals experience the physical world independently, but their impressions of the world are often based on linguistically mediated “contexts of action” (Habermas, 2005). These contexts provide meaning to the physical world so that people can converse about the physical world. Habermas does not regard meaning as a strictly context-independent reference to something in the world. Rather individuals will interpret things differently based on different contexts they use to develop meaning for themselves. Thus, it is critical when communicating among different people, speakers have to “select a *comprehensible* expression in order that the speaker and hearer can *understand one another*” (Habermas, 1979). This difference in interpretation of the objective world indicates why in communicative action, participants must first identify a shared objective world and definitions in order to establish dialogue that is a rationally based discussion about the objective world.

## Truth

In discussing the truth criterion, Habermas offers an operational definition based on how truth functions in rational discourse: “the speaker has to have the intention of communicating a true proposition (or propositional content, the existential presuppositions of which are satisfied) in order that the hearer can share the knowledge of the speaker” (Habermas, 1979). This operational definition does little to describe what a “true proposition” is. The concept of a true proposition is quite complex, involving determining whether truth is a real, non-contextual, self-evident concept, or whether truth is an agreement about reality, produced through argumentation (Arnett, 2008). There are complications with defining truth in both these forms – the contextual and the absolute. In the end, Habermas suggests that truth is at once non-contextual and non-absolute where truth functions as an objective reality that extends across various context, but also truths are not infallible and are mutable in the face of new evidence.

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<sup>1</sup> Sincerity is also referenced as truthfulness in communicative action literature.

<sup>2</sup> Legitimacy is also referenced as rightness or appropriateness in communicative action literature.

## Sincerity

The sincerity criterion has two important facets. First, to engage in communicative action, an interlocutor “has to want to express his intentions *truthfully* in order that the hearer can *believe* in the speaker’s utterance” (Habermas, 1979). Second, interlocutors must be able to “take one another ‘at their word,’ and hold on another to ‘be answerable’” for their words and actions (Habermas, 1979). While the first facet, speaking truthfully, is straightforward, the second facet is quite complex. In Habermas’ theory, accountability is not an *ex post facto* criterion since what happens following the ideal speech communication situation is outside the bounds of his theory. What Habermas means by accountability is that interlocutors need to be held accountable during the dialogue. This accountability occurs by holding participants to the “rules of the game” by which the discussion is regulated (Habermas, 2005). These rules of the game are defined by Habermas as “judg[ing] and consensually resolv[ing] controversial actions in the light of matching standards of evaluation.”

## Legitimacy

Clearly synthesizing the meaning of the legitimacy criterion is difficult. In *Communications and the Evolution of Society* (1979), Habermas writes:

... the speaker has to select an utterance that is *right* in the light of existing norms and values in order that the hearer can accept the utterance, so that both speaker and hearer can *agree with one another* in the utterance concerning a recognized normative background.

As the theory of communicative action evolved, Habermas specifically defined the legitimacy criterion as “the shared presupposition of...the exacting presuppositions of argumentation that force participants to decenter their own interpretative perspectives” (Habermas, 2005). What Habermas means is that participants in discourse must bridge the gaps between their individual lifeworlds by adopting a shared objective world through which to interpret reality and conduct a discussion. To bridge these gaps between lifeworlds, individuals must put aside their individual worldviews and at least temporarily adopt other interlocutor’s worldviews. Habermas calls this “perspectival interpenetration (Habermas, 2005), which has two purposes. First, comprehending an opponent’s motivations prevents the intrusion of instrumental rationality in an argument. Habermas notes “(i)n everyday practice we are both participant and observer, and we discover that many expressions are motivated by things other than good reasons...by decentering one’s own perspective [one] can help expose both self-deception and deception arising from other interlocutor’s worldviews (Habermas, 2005). The second, is that through interpenetration, interlocutors can “include one another in a world they construct together” by agreeing

upon common standards. This allows interlocutors to arrive at an impartially derived, legitimate consensus based on “communicative situations that can bring out the unforced force of the better argument.” Finally, Habermas provides a list of four “pragmatic presuppositions” for the legitimacy claim to exist:

(a) publicity and inclusiveness: no one who could make a relevant contribution with regard to a controversial validity claim must be excluded; (b) equal rights to engage in communication: everyone must have the same opportunity to speak to the matter at hand; (c) exclusion of deception and illusion: participants have to mean what they say; and (d) the absence of coercion: communication must be free of restrictions that prevent the outcome of the discussion (p. 106-107).

## **2.5 Conclusion: From Context to the Real World**

This chapter presented the broad, historical context for the tension between experts and citizens in bureaucratic decision-making. In a sense, this chapter provides some of the reasons why this research is pertinent. Identifying solutions to reduce conflict between experts and citizens is critical to ensure proper environmental management and achieve a sustainable basis the use of natural resources. The intended application of this research is not to solve tensions, but to suggest ways to improve public participation practices in bureaucratic decision-making.

The next chapter focuses on the Forest Service’s decision-making process. Drawing on research specific to the Forest Service and the concepts presented in this chapter, Chapter Three provides a real word example of the tension that exists between experts and citizens, the effectiveness of public participation processes, and an overview of the four validity claims of communicative action in relation to the Forest Service decision-making process.

## CHAPTER THREE: Forest Service and Communicative Action

This chapter discusses Forest Service decision-making with a particular focus on three factors: the National Environmental Policy Act (NEPA), public participation, and communicative action. The first section describes a brief history of the Forest Service and the agency's management philosophy. This discussion looks into how the Forest Service decision-making came to rely on experts and the scientific method, thus subjugating the public's role in decision-making. The chapter then discusses the National Environmental Policy Act and how its public participation mandates have changed the Forest Service decision-making process. Lastly, the chapter discusses relevant studies to gain insight on whether the Forest Service engages in communicative action based on the theory's four validity claims: comprehensibility, truth, sincerity, and legitimacy.

### 3.1 Forest Service Decision-making

The decision-making process for the Forest Service has changed over the course of the 20<sup>th</sup> century. Herbert Kaufman's seminal work *The Forest Ranger* (1960) provides a clear description of how the agency's organizational culture shaped administrative behavior and ultimately decision-making. Kaufman found that the forest ranger was a pivotal player in national forest administration who acted as "executive, planner, and woodsman whose chief responsibility was to shape elaborate, detailed directions from above to meet the needs of the local situation." By doing so, rangers exercised what Kaufman identified as a false discretion, where they appeared to make decisions on their own accord, but rather all decisions were based on organizational standards from above. Kaufman (1960) called this "voluntary conformity" and described it as:

(The "techniques of integration")...actually infuse into the forest office the desired patterns of action in the management of their districts, so that the Rangers handle most situations precisely as their superiors would direct them to if their superiors stood looking over their shoulders, supervising every detail. To overstate the case their decisions are predetermined.

The result of this voluntary conformity was a focus on maintaining compliance and constantly improving the efficiency and economy of their operations. This sentiment of efficiency is also widely prevalent in the Progressive era philosophies discussing the role of bureaucratic agencies. Through such conforming mechanisms, the Forest Service built efficiency and increased emphasis on the use of internal expertise and guidance in making decisions – something quite fundamental to the concept of instrumental rationality.

The Forest Service during this time became the epitome of Progressive ideas of administration. Foresters, who were primarily responsible for making forest management decisions, were indoctrinated from within the agency that their expertise and knowledge was omniscient (Gericke & Sullivan, 1994). Foresters were experts who had the knowledge and skills to understand the complexity of forest management. Kaufman describes these experts as interacting with the public in two ways: through providing information and education programs and conducting business transactions that directly impacted a member or group of the public, e.g., setting limits on the amount of grazing allowed on a rancher's allotment (1960). These interactions were primarily one-way and portrayed the ranger as the "expert, local authority, and manager-in-charge." Furthermore, Forest Service employees had close ties to the land and the people whose livelihoods depended on the forest. Gifford Pinchot described this important connection saying that "[the supervisor's] ability to sense public opinion and apply their knowledge, and that of the Rangers under their orders, not seldom made all the difference between local hostility and cooperation" (Pinchot, 1947). Forest Service decision-making became autonomous, where the agency made decisions based on their own knowledge, which was perceived as the best possibility to deal with any forest problems.

Now fast-forward to the forest ranger of today. In the intervening time, resource management legislation, citizen participation, and changing social conditions have shifted the mission of the Forest Service and the role of the forest ranger. In this time, the public began seeking more passive uses for the National Forests such as recreation as well as calling for the preservation of habitat for wildlife such as the Northern spotted owl. These new demands were often in direct conflict with timber production demands and initially were ignored by the agency. Finally, legislation forced the agency to begin considering these additional interests and uses with equal importance as timber production (USDA Forest Service, 2002; Hoberg, 2004; Coggins, 1982). The agency's job has evolved where now management occurs "in a fishbowl – under the watchful eyes of timber companies, conservation groups, outfitters, and other members of the public" (Gericke & Sullivan, 1994; Tipple & Wellman, 1989). "Integrating public values into a rational framework has been a source of frustration for both the agency and the public. From the agency's perspective, potential frustrations include: compromise that leads to potentially undesirable outcomes; an uncomfortable balance of power between agency experts and the public; reduced efficiency; and investment in collaborative approaches which do not guarantee diminished conflict" (Arnstein, 1969; Wondolleck & Yaffee, 2000; Germain, 2001; Predmore, Stern, & Mortimer, 2011).

As expert-citizen tensions mounted, policymakers, as previously discussed, looked to public participation as a means to resolve the conflict. Of all the legislation designed to increase public input in bureaucratic decision-making, the National Environmental Policy Act (NEPA) is foremost in its impact on the Forest Service. Since its passage, NEPA has impacted nearly all decisions made by the Forest Service in how they manage the National Forests (Management Analysis, Inc., 2007). The following sections discuss NEPA and its public participation mandate and how NEPA, while increasing the amount of public participation, has been unable to reduce the conflict and tension between the Forest Service and the public.

### **3.2 The National Environmental Policy Act**

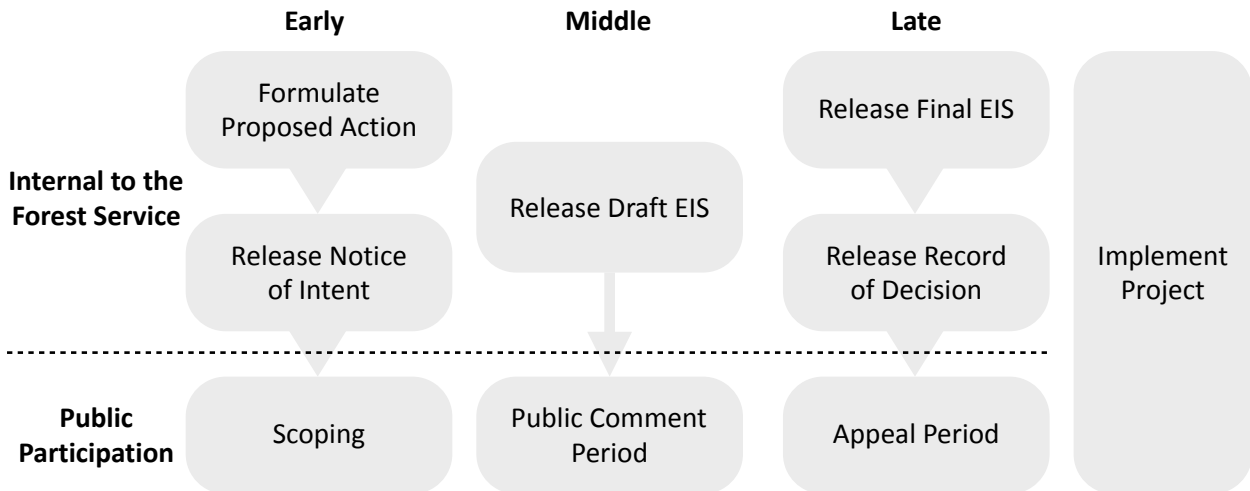
Congress passed NEPA in 1969 providing a brief but powerful statement of national policy that encourages “productive and enjoyable harmony between man and his environment” (42 U.S.C. § 4321). Fundamentally, NEPA requires that federal agencies consider the environmental impacts of a project as part of their decision-making process (Canter & Clark, 1997). The primary mechanism for implementing this requirement is a mandate that requires agencies considering a project with significant environmental effects to produce “a detailed statement” that discloses the environmental impacts, unavoidable adverse environmental effects, and alternatives to the proposed action. These “detailed statements” are known as environmental impact statements (EISs).

While the main purpose of NEPA was to establish a national policy on the environment, it also created an institutionalized process of decision-making that required public involvement. NEPA specifically states, “each person has a responsibility to contribute to the preservation and enhancement of the environment” (§ 4331). This public involvement requirement was an attempt by policymakers to democratize decision-making by “bypassing and constraining the administrative state through expanded civic politics and cultivation of alternative social institutions” (Baber & Bartlett, 2005). In some ways, the central achievement of NEPA has not been to make administration more aware of environmental impacts. Instead, NEPA has democratized administration by serving to open environmental decision-making to broader political participation and to make it more likely that the decision-making process will actually attend to the arguments put forward by citizens. In this manner, “the EIS has now become the primary type of discourse connected with actions involving public lands in America” (Killingsworth & Palmer, 1992).

## NEPA's Public Participation Mandate

Besides laying out a national policy on the environment and mandating NEPA documents, NEPA states, "each person has a responsibility to contribute to the preservation and enhancement of the environment" (§ 4331). To meet this public participation requirement, the NEPA established Council of Environmental Quality (CEQ) developed regulations on how agencies make project level decisions. CEQ outlined three administrative stages as part of a prescriptive process to engage public stakeholders to provide their input/concerns to agencies and decision makers. The three stages differ in their timing in the process, the objective of input, and requirements for how agencies must respond to the public's concerns (Scardina, Mortimer, & Dudley, 2007). These public involvement stages along with other requirements for how agencies need to implement and develop NEPA documents and make decisions will be called the NEPA process (Figure 3).

The NEPA process starts with the agency identifying a potential project. At this stage the agency develops a purpose and need statement and submits a Notice of Intent (NOI) to the Federal Registrar. Once the NOI is published the scoping process begins, this is the first stage for the public to become engaged in the NEPA process. After scoping the agency proceeds to identify alternatives to the proposed action, evaluate current conditions, and identify the potential environmental impacts. Upon completion of this analysis the agency releases a Draft EIS for public comment. The Draft EIS comment period is the second time the public can provide comments to the agency. After receiving comments the agency goes back and edits the DEIS and produces a Final EIS. After the FEIS is published the agency decision maker releases a Record of Decision indicating the final decision for the project. Interestingly, the agency has the ability to choose any alternative or combination of alternatives that it wants; it is not constrained by what is in the FEIS, ultimately giving the agency decision maker enormous power and discretion. Lastly, once the ROD is released the public can file an appeal, the final stage of public involvement, and request the opportunity to negotiate with the agency to change the decision. At the end of the appeal period, the NEPA process is effectively complete; however, disgruntled members of the public do have standing to sue the agency at this point if they are still unhappy with the project decision. It is important to realize that the litigation of NEPA projects, while influenced by the NEPA process, is not directly a part of the process.



The NEPA process is comprised of multiple procedural stages. The majority of these stages are executed internally by the Forest Service. NEPA only requires the agency to engage the public at three specific administrative stages: scoping, public comment on the draft EIS, and an official appeal period.

Figure 3: The Stages of the NEPA Process

During the NEPA process there are three prescribed administrative stages for public participation.

The following bullets provide a richer depiction of these stages:

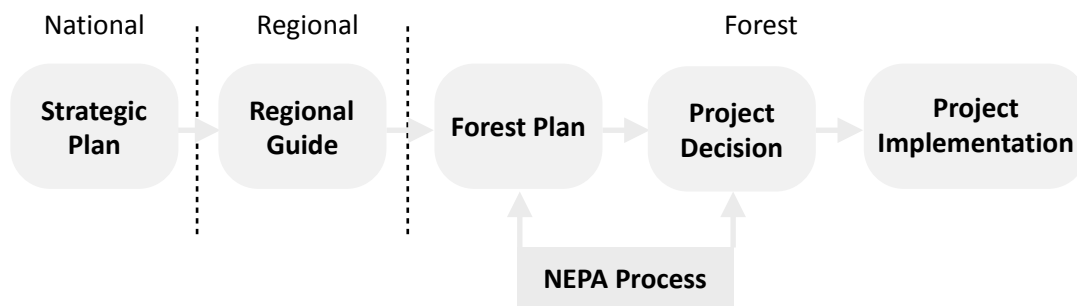
- ⇒ **Scoping:** The scoping stage begins upon the release of an agency proposed action. Following the release of the NOI, there is a 30-day public comment period during which the agency invites participants to comment. At this stage the public is asked to comment on the scope of the project and to identify possible significant issues that the project may create.
- ⇒ **Comments on DEIS:** A 45-day comment period occurs after the release of the DEIS. At this stage agencies look for feedback on the alternatives they've developed, their evaluation of the environmental impacts, and suggestions for which alternative to implement.
- ⇒ **Appeal Period:** The last stage for public participation in the NEPA process is a 45-day appeal period. If any appeals of the decision are received and accepted, the agency must make attempts to resolve the appeal. If no resolution is reached, the agency must then make an appeal decision within 45 days after the end of the appeal period, either affirming or reversing the responsible official's decision in whole or in part.

It is also important to note that NEPA allows for projects that have no significant impact to avoid the EIS process by having the agency develop a categorical exemption. Furthermore, if the agency is unsure of a projects potential for environmental impacts it may develop and environmental assessment (EA) rather than an EIS. Upon an EA's completion, the agency must determine if environmental impacts

are insignificant or significant. If impacts are insignificant, the agency releases a Finding of No Significant Impact (FONSI); if they are significant, the agency must complete an EIS. This research will focus on NEPA processes that require EISs, and thus focus on projects that are likely to have significant environmental impacts.

### 3.3 NEPA's Impact on the Forest Service

NEPA has prompted multiple changes in how the Forest Service operates and makes decisions. NEPA impacts Forest Service decision-making at the forest planning and project levels (Figure 4). These two levels of decision-making are quite different. Forest planning is mandated by the National Forest Management Act (NFMA), which requires the Forest Service to develop forest plans for each National Forest every 10 years. These plans identify various goals and objectives for management on each forest. During the first phase of forest planning, the agency must conduct a NEPA process and provide an environmental impact assessment for the proposed plan (Gippert & DeWitte, 1990). Project level decision-making occurs as activities are designed and implemented to meet the objectives of the forest plan. Forest planning and project-level decisions are quite different in scope and may involve different objectives, considerations, and stakeholders.



There are several levels of decision-making that occur within the Forest Service. The strategic plan is developed for the entire agency which filters down through regional guidance, forest plans, to project level decisions. The NEPA process is used in making forest planning and project level decisions.

Figure 4: Forest Service Decision-making Levels

Historically, the Forest Service was a decentralized line and staff organization with a tradition of independent decision-making focused at the lowest levels of the organizational hierarchy (Ackerman, 1990). The agency's decisions and stewardship of the National Forests went largely unchallenged. When NEPA was enacted, it opened up the decision-making process of the agency, requiring the Forest Service

to become more transparent in how it incorporated public desires in developing its projects and policies. This resulted in a number of changes in how the Forest Service operated (Ackerman, 1990):

- ⇒ It caused the Forest Service to adopt an interdisciplinary approach to forest management by ensuring various resources impacts were considered in decision-making.
- ⇒ It encouraged the Forest Service to use integrated decision-making. Previously, the agency prepared discrete “functional” plans for each individual resource with little coordination. After NEPA’s passage the agency began to develop a single, coordinated plan for all resources in a National Forest.
- ⇒ It fostered an expansion of information available for the public and public involvement efforts.
- ⇒ It caused the Forest Service to change hiring practices and expand job skills. In 1970, the majority of agency personnel were foresters (Steen, 1976). Now a broad complement of engineers, landscape architects, wildlife biologists, computer analysts, sociologist, range conservationists, public involvement specialists, geologists, archaeologists, and even some lawyers work for the agency.
- ⇒ It encouraged the agency to centralize and standardize procedures to better control variations in management.

Groups and interests that prior to the enactment of NEPA were excluded from decision-making, now have an avenue to express concerns and influence Forest Service decisions (Culhane, 1990). NEPA has led to a transparency of the decision-making process, which has ensured that the process is more open and there is greater access to information and there is stronger accountability (Canter & Clark, 1997; Austin, Carter, Klein, & Schang, 2004). Furthermore, some evidence indicates that including more participants in the NEPA decision-making processes has improved project design and implementation (Council on Environmental Quality, 2007).

NEPA has infiltrated decision-making at virtually all levels and in all programs of the Forest Service. In 2006 alone, nearly 8,000 employees were engaged in conducting 6,000 NEPA processes costing \$365 million (Management Analysis, Inc., 2007). To meet NEPA requirements, managers must determine the appropriate scope of analyses, identify a reasonable range of alternatives, staff interdisciplinary teams with adequate expertise, facilitate effective public involvement, cope with litigation, and train agency personnel in how to comply with the act (Bear, 2003; Canter & Clark, 1997; Culhane, 1990; Laband, González-Cabán, & Hussain, 2006; Malmshemer, Keele, & Floyd, 2004; Poisner, 1996; Twelker, 1990;

Stern & Mortimer, 2009). The Forest Service has been particularly impacted by significant increases in appeals and litigation arising from the NEPA process (Malmsheimer, Keele, & Floyd, 2004).

The Forest Service is the single largest generator of environmental impact statements: In 1995, the Forest Service reported that it prepared about 20,000 environmental documents annually—more than any other federal agency. In 1994, the Forest Service issued almost 20 percent of all the final environmental impact statements prepared by federal agencies (50 out of a total of 253) (USGAO, 1997). In 2006, it issued 144 final EISs—more than 25 percent of the total prepared by all federal agencies (Council on Environmental Quality, 2007). From 1970 to 2004, the agency filed 3,468 Draft Environmental Impact Statements, which equates to approximately 15 percent of the total number of DEIS (22,757) filed by all federal agencies. Between 1998 and 2004, the Forest Service accounted for almost 26 percent (895) of all documents filed with the Environmental Protection Agency (Tzoumis, 2007).

### **3.4 NEPA's Impact on Public Participation in the Forest Service**

The impact of NEPA has shifted the Forest Service's mission, the role of the ranger, the culture of the Forest Service, and the world of public administration (Tipple & Wellman, 1989). The ranger's role is still primarily to operate as a line manager and oversee the administration of projects on the ground; but the ranger now must also serve as a facilitator of public dialogue. Forest rangers engage in much more interdisciplinary planning and public involvement and now spend "more time on paperwork than in the field" (Tipple & Wellman, 1989). Yet, evidence suggests that this responsiveness has only created minor changes in how the Forest Service operates. Twight and Lyden (1989) found that the agency still favors commodity production above all other interests. Additionally, the agency operates in a tug-of-war between two competing value sets, one of efficiency and economy and one of responsiveness and representativeness. The following sections discuss research that looks to characterize public participation in the Forest Service broadly. This looks at who participates, when people participate, the role of participants, and the types of participation activities offered by the Forest Service.

#### **Who Participates in Decision-Making**

The best information on who participates in Forest Service NEPA processes comes from Force and Williams' 1989 survey of 984 Forest Service planning participants. They found that the majority of participants were well educated and had relatively high family incomes (Force & Williams, 1989). Not

unexpectedly, participants represented a wide array of interests including: environmental (27%), timber (21%), recreation (16%), fish and wildlife (14%), and other (22%). Participants lived in metropolitan (35%), urban (34%), and rural (34%) areas in almost equal proportions, but participants from metropolitan areas had higher incomes than those from rural areas and more education than either rural or urban participants. A majority of participants represented themselves as individuals (57.3%) while the remainder represented organizations. Organized participants tended to have higher incomes and levels of education, lived in more densely populated areas, had lived in the area fewer years, and were more likely to be interested in the forest's timber resources. Furthermore, non-Caucasians were more likely to represent an organization.

In a more recent study, Overderst (2010) sought to understand if those who participated in Forest Service NEPA processes are representative of the general public. He suggested that some individuals will participate directly by expressing their concerns and interest while others will participate more indirectly by supporting interest groups. In either direct or indirect participation, for the participation to be reflective of the general public the distribution of individuals and groups, which participate, should represent the actual underlying distribution of interests of society. In his evaluation of direct and indirect participation, Overderst found that the socioeconomic characteristics of participants differ from those of the local public. Participants tended to have more general education, more formal education about forests, and greater income; a greater percentage of them owned land adjacent to the national Forest, and a greater percentage of them held occupations related to natural resources compared to the public. Overderst also found that environmental interests dominated the public involvement process. Other research has also found that environmental interest groups tend to dominate Forest Service NEPA public participation (Maier, 2001).

### **When Do Citizens Participate in Decision-Making**

As more public participation has occurred in project level decision-making, it is important to understand when participants get involved in the NEPA process. Germain (2001) conducted a survey of 178 appellants representing 144 different Forest Service projects. In the survey, Germain found that only 17 percent of respondents were involved in scoping public involvement activities. The study found that recreation interest groups were more likely than environmental interests to get involved early in the public participation process (2001). There is some evidence that the lack of participation by environmental interests in the pre-decision activities is actually a consciously chosen strategy. However, respondents also indicated that they often did not have the time or human resources to participate in

pre-decision activities, which often included activities such as on-site visits, and that it was more efficient for them to react to project decisions. Interestingly, Germain found that those individuals involved in pre-decision activities were significantly more satisfied with the NEPA process and the fairness of the process than the post-decision group. The results suggest the possibility that those involved in the public participation process from the onset perceived that the fairness of the process was less of an issue than those who reacted to an agency decision. Pre-decision scoping activities may offer that additional interaction between the agency and participants, promoting a greater sense of equity.

Besides the question of *when* people get involved in the NEPA process, it is also important to realize that different involvement activities are offered by the Forest Service at the different stages in the process. During the scoping stage of participation the agency mails out scoping letters, describing the proposed action and inviting recipients to respond by identifying significant issues they see that could arise from implementing the proposed action. This effort is often supplemented with public meetings and workshops (Blahna & Yonts-Shepard, 1989). Once scoping ends, the agency becomes more passive in seeking public involvement. The Forest Service often provides information but does not actively seek citizen input in designing and evaluating planning alternatives. When the draft EIS is released public involvement activities increase again as the agency requests written comments on the draft.

### Role of Participants in Decision-Making

When discussing public participation, it is important to understand how the Forest Service perceives the role of participants. The “Ladder of Citizen Participation,” developed by Sherry Arnstein, is one of the most prevalent tools to evaluate public participation processes (Arnstein, 1969). Arnstein argues that public participation is just another term for citizen power, and that participation is based on the distribution of power to make decisions. Using this idea of power, Arnstein established three main stages of public participation in agency decision-making: non-participation, tokenism, and citizen power. Non-participation occurs when the public has no power over the decision-making process.



Figure 5: **Arnstein's Ladder of Citizen Participation**

This is the situation when decision makers “manipulate the public through the use of propaganda, in

order to gain support” (Brooks & Harris, 2008). Tokenism occurs when the public is allowed to receive information and share their views but has little ability to influence the final decision. Citizen power, the final stage, occurs when the public has enough power to truly influence the final decision. Arnstein’s ladder presents eight rungs of power relationships between the agency and the public (Figure 5).

Prior to the passage of NEPA, public participation typically fit into the non-participation stage of Arnstein’s ladder (Brooks & Harris, 2008). Afterwards, most contemporary public participation in environmental and land-use planning takes place at the stage of tokenism. Even with the increase in public participation after NEPA’s passage, research indicates that there

remains an unmet desire for participation, an “Arnstein Gap.” This “gap” is the difference between the perceived level of participation and the desired level of participation (Bailey & Grossardt, 2006; 2007) (Figure 6). A poll of over 500 NEPA participants and 113 decision makers found the two groups believe that current participation is around a three or four, which Arnstein terms “informing” or “consultation.” Both groups also strongly agreed that the ideal level of participation is about a six, which Arnstein terms “partnership.” These findings indicate that contrary to the fears of experts, citizens do not desire “citizen control” of planning and decision-making. This is important to note because legally, the Forest Service cannot delegate their authority directly to the public; thus, the highest degree of citizen power that can realistically be afforded in agency decision-making is about a six.

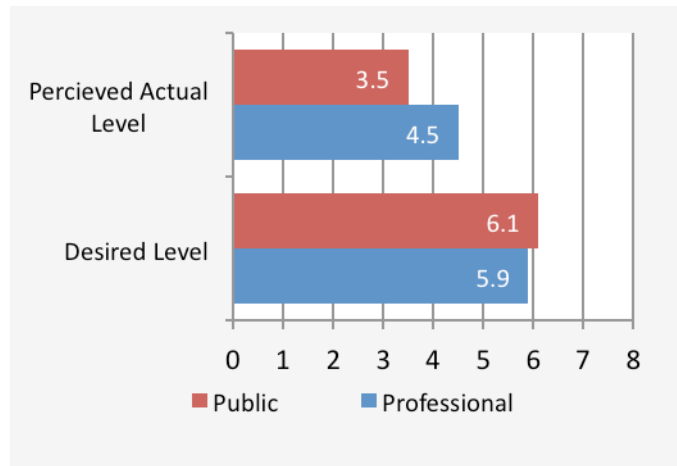


Figure 6: **The Arnstein Gap** (Bailey & Grossardt, 2006; 2007)

Regarding the Forest Service and Arnstein’s ladder, previous research tends to indicate that the agency’s participation efforts most often falls in the tokenism spectrum. Brooks and Harris (2008) identify that conducting activities such as media, pamphlets, posters, and responding to inquiries are examples of one-way communication activities, which should be considered in the informing degree of tokenism. When the Forest Service implements attitude surveys or public meetings, which offer no assurance that citizens concerns and ideals will be taken into account” in decision-making, they are practicing the consultation degree of tokenism. Finally, when the Forest Service establishes advisory groups but limit their power they may be in the placation degree of tokenism. From this and the

information about which type of public involvement activities most often occur it becomes clear that the Forest Service generally provides one-way information and communication, with the agency instructing the public about projects rather than using public knowledge to design and influence projects (Blahna & Yonts-Shepard, 1989).

This lack of two-way communication is reflected in the dissatisfaction participants have with the NEPA process. Germain (2001) found that participants were mildly dissatisfied with both the process and outcomes of the Forest Service's NEPA public participation. Respondents most often cited dissatisfaction with the equity of the process stating that the process was somewhat biased, unfair, and that they were given little opportunity to negotiate during the process. Additionally participants were dissatisfied with the effectiveness of public participation stating opportunities to participate were insufficient and that it didn't allow for public input (one way communication). Across environmental, recreation, and commodity interests there was no statistical difference in process satisfaction; however, environmental interests did give the process the lowest scores for equity and overall scores. They indicated that there was not enough opportunity for public input and that their input was not able to influence the final outcome. Opportunity for substantive, interactive public involvement only occurs late in the planning process because the DEIS is often the first time persons see the specific management alternatives being proposed. Because the public is offered little input during alternative development stage, input after the release of the draft EIS became crucial but most participation at this stage was by one-way communication (Blahna & Yonts-Shepard, 1989). Environmental interests 'strongly' perceived that both the process and final outcome were biased to the agency's viewpoint and ultimately did not fully consider negative environmental consequences of the project. Given that environmental interests are least likely to get involved in pre-decision scoping activities, it is interesting that of the three interest groups, they were least satisfied with the opportunity for input and more suspect of an agency agenda and bias (Germain, 2001).

### **Types of Public Involvement in Decision-Making**

There are many forms of public involvement and activities that can be used in public participation processes. In a survey of 984 participants, Force and Williams (1989) found that in the last three years the majority of participants were involved in NEPA projects using: Forest Service presentations (62%), response forms (62%), personal letters (56%), and telephone calls (52%). The study found that timber groups were more likely to attend presentations and open houses while environmental groups were more likely to write letters. In a review of 32 Forest Service NEPA projects, Lunde, Brody, and Ryan

(Appendix E) found that the four involvement types most typically used across the sample were public meetings (41%), field trips (38%), open houses (25%), and stakeholder meetings (25%). Additionally a minimal number of projects engaged participants through letters, media, and presentations. It is also clear that not all of these public involvement activities are equal in their ability to engage the public. When asked about their preferences for public participation activities, respondents in Force and Williams's study indicated their top five activities would include open public meetings, meetings for residents of a specific community, surveys of citizens' attitudes and opinions, informal contacts with Forest Service officials, and direct mail of materials.

### Continuing Issues with Public Participation

Despite the fact that NEPA has increased public participation in environmental decision-making, numerous issues persist. In expressing his disenchantment with the agency's public participation process, former Chief of the Forest Service, Jack Ward Thomas stated:

...clearly, traditional public involvement has failed to calm the anger some feel about our management. Rather it has, in many cases, led directly to frustration and dissatisfaction. Why? Because all too often, we have treated individuals and groups as data points to be classified and analyzed, rather than as individuals with feelings and values, not to mention as members of a community with shared values and common goals. This has left many people who are interested in natural resource management with a perception that they are not being heard by the agency, and that they cannot affect the outcome of our plans and decisions. (Thomas, 1995)

In a review of NEPA's effectiveness, the Council on Environmental Quality found that participants feel NEPA documents are too technical, that agency decisions are pre-determined before the public can provide comment, and that stakeholders may be left out of the process (Council on Environmental Quality, 2007). Further issues about the implementation of the NEPA process and public participation include (Hansen & Wolff, 2000):

- ⇒ "Documentation procrastination" resulting in impossible schedules for Environmental Assessments or EIS preparations;
- ⇒ "Encyclopedia mania" which results in producing massive multi-volume, often unreadable NEPA documents;
- ⇒ Inadequate public and agency involvement, causing delay; and
- ⇒ Confusing writing, editing, and formatting of documents.

Some have made the case that earlier public participation could address these issues and participant concerns (Spyke, 1999; Canter & Clark, 1997; Steinemann, 2001; Jones & Taylor, 1995;

Shepherd & Bowler, 1997). This recommendation indicates the increasing feeling that the scoping stage of participation is critical because it occurs prior to drafting of an EIS (Spyke, 1999). However, it seems unlikely that earlier public participation would be the solution for all of NEPA's problems. Concerns have been raised about the various mechanisms agencies use to involve the public. Many of these mechanisms, such as public hearings, are viewed as adversarial by participants rather than methods for constructive input (Spyke, 1999). Additionally, the public may lack the resources to investigate and devise alternatives to compete with the far superior resources available to agencies (Council on Environmental Quality, 2007). Another concern is over an increasing use of EAs by agencies (Spyke, 1999). While agencies are allowed to choose between preparing an EA and an EIS, the EA process has far fewer public participation requirements and mandates than the EIS process, effectively allowing agencies to side-step public participation and to cut the public out of the decision-making process (Council on Environmental Quality, 2007).

### **3.5 The Forest Service and Communicative Action**

Some researchers argue that the NEPA process will never provide adequate ability to foster communicative action (Killingsworth & Palmer, 1992). However, this argument is based on limited evaluation of the NEPA process and communicative action. Furthermore, it is important to understand that communicative action is born from an ideal speech communication situation that in all likelihood will never occur in reality. Instead, to operationalize Habermas' theory, it is important to view communicative and strategic action as polar opposites on a continuum rather than just describing that communication is either one or the other. The goal for NEPA public participation isn't to gain the ideal communication, an unreality, but to be as close to communicative action as possible. In order to evaluate processes along such a continuum more research is needed to evaluate processes developed through NEPA.

The following sections review research that provides some level of insight into the four validity claims of communicative action in terms of how the Forest Service implements NEPA public participation.

#### **Comprehensibility and the Forest Service**

There has been a good amount of research reviewing the comprehensibility of NEPA documents. Most studies have focused on a variety of federal agencies rather than the Forest Service in particular,

but there seems to be a general trend among agencies. Although NEPA lays out a general framework for planning and environmental analysis, its guidelines, in tandem with agency planning guidance, allow for a wide degree of discretion in the format, writing, and style of NEPA documents. NEPA documents are mandated and provide a detailed statement to analyze the short- and long-term environmental impacts and tradeoffs of the proposed action along with potential alternatives for meeting the project goals. The act further mandates that the statement be developed in consultation with federal, state, and local agencies authorized to develop and enforce environmental standards and made available to the President, the CEQ, and the public (Sec. 102 [42 USC § 4332]). Agencies typically put together interdisciplinary teams to develop these statements. These teams are typically separate from the decision maker.

In general, research indicates that all federal government NEPA documents are currently not written in a way that is understandable to the general public (Gallagher & Patrick-Riley, 1989; Axline & Bonine, 1990; Gallagher & Jacobson, 1993; Jones, McDavid, Derthick, Dowell, & Spyridakis, unpublished). Killingsworth and Palmer (1992) note a concern that EISs are written primarily for decision makers and upper level agency officials and secondarily for judges, legislators, citizen groups, and private individuals, making these documents very difficult to understand for the secondary audience.

In addition, Gallagher and Patrick-Riley (1989) focus on the use of reading ease scales. In their 1989 study, the authors examined 23 agency land management plans prepared under NEPA, using the Flesch Reading Ease Scale to determine if they were written in plain language. The scores showed that the plans are written for people with three to six years of college education, far beyond the reading ability of the average person, likely limiting or biasing participants in agency planning. This article notes that there are no specific guidelines for readability (e.g. a Flesch reading level) of EISs or in "plain language" guidelines and suggest that a national policy on the readability of the plans be adopted.

Additionally, Sullivan, Frances and Prabhu (1996) took the assessment of reading ease one-step further by using an example EIS and testing the understanding of high school students regarding the document. This study found that citizens' understanding of the EIS material was very low, with only 70 percent of participants answering correctly at a level no better than chance (blind guessing) on two measures of understanding. Although understanding was significantly correlated with reading ability, even the best readers understood at a level that was far from adequate. This study provides an assessment of actual public understanding of EIS documents, indicating that in fact the majority of the general public does not understand them.

Regarding the Forest Service specifically, Lunde, Brody, and Ryan<sup>3</sup> (see Appendix E) found the reading ease scores for 32 Forest Service NEPA documents in the sample range from “very difficult” to “difficult” that is from 24.53 to 40.36, where the number represents a Score (Table 2). Additional information on Flesch Readability Scores can be found in *Section 4.2* on page 47. The easiest documents are written at the thirteenth-grade level (first year in college). The most difficult documents are written at the sixteenth-grade (college graduate). Furthermore, the study evaluated NEPA documents for inclusion of key readability recommendations, which were identified to increase comprehensibility. Twenty-six different readability recommendations were identified in the federal Plain Language Guidelines and other literature. In general, the recommendations for document readability are that the document needs to be well organized, written clearly, and provide aids for clarity. The total readability scores for readability recommendations ranged from 8.0 to 17.0 of the twenty-six identified elements. The average number of readability recommendations met was 12.31, indicating that on average 47 percent of readability recommendations were met in the sample analyzed.

Table 2: **Readability Measures for Forest Service EISs**

National Forest & Year	Page Length	Average Words per Sentence	Average Syllables per Word	Flesch Readability Score	Estimated Grade Level
Ochoco 2009	260	20	1.81	28	College grad.
Umatilla 2009	243	32	1.58	26	College grad.
Custer 2008	469	23	1.82	33	College
Custer 2009	200	22	1.81	31	College
Grand Mesa 2010	302	25	1.84	26	College grad.
Grand Mesa 2007	238	26	1.71	36	College
Kootenai 2009	672	22	1.72	39	College
Kootenai 2008	399	20	1.70	40	College
Medicine Bow-Routt 2009	188	21	1.85	29	College grad.

**Conclusion:** Research indicates that over the past few decades, EISs have evolved into voluminous collections of data aimed at meeting increasing legal requirements (AASHTO/ACEC, 2006). These documents have become overwhelming and incomprehensible to the average citizen (Sullivan, Frances, & Prabhu, 1996). Furthermore, these documents often confuse judges and agency decision makers who must interpret the analyses in them. Many Forest service NEPA documents are poorly written, poorly organized, and presented in formats that are difficult to follow. Despite regulations developed by the

<sup>3</sup> This research was part of a study funded by the Forest Service to better understand the readability of their NEPA documents. I was involved with this project along with PhD candidate Ashley and Professor Clare Ryan. To date, the results of this study have not been published. Therefore, the relevant material from that study (method description and findings) are provided as supplemental information in Appendix E.

Council of Environmental Quality to ensure readability, this trend of unreadable documents has continued.

## Truth and the Forest Service

There is very little research on how truthful the Forest Service is or perceived to be. However, there is growing literature about whether citizens trust the Forest Service. Since trust in a large part requires truthful communications, it seems relevant to review this trust literature. The importance of trust is critical to understand how citizens make judgments about projects. In reviewing fuel reduction projects, Shindler (2003) found that citizen acceptance of the decision was heavily based on the confidence citizens have in the agency.

The question is; Has the institutionalization of public participation through NEPA allowed the Forest Service to build trust with citizens? In general, researchers agree that many citizens just don't trust the Forest Service experts in making forest management decisions (Shindler & Cramer, 1999; Winter, Vogt, & McCaffrey, 2004). Currently, the Forest Service has adopted a more traditional form of public participation which has a "strong focus on autonomous experts and public reaction, has contributed to a loss of public trust and the current crisis of conflict" (Shannon, Cortner, & Davis, 1992; Cortner & Moote, 1994; USGAO, 1997; Germain, 2001).

A lot of the focus of this research has been citizen trust of the Forest Service regarding fuels reduction treatments. In this area it's been found that while the majority of respondents to a project supported the fuels reduction treatment (including prescribed fire and thinning treatments), only half of the respondents indicated they trusted the agency to implement and complete the project (Shindler & Reed, 1996). Shindler found in his study of fuels reduction projects that there were relatively low levels of trust in regards to the Forest Service being able to implement the proposed project – this was especially true in terms of prescribed fire where trust in the agency decreased significantly from 54% to 43% over the four year study period (Shindler, 2003). Trust in regards to mechanized thinning was slightly higher; still, only a slim majority (52%) expressed confidence in the agency. Shindler further found through his survey that few people feel the Forest Service is building trust and cooperation with citizens.

Finally, new research indicates that citizens are starting to look to the Forest Service less for their information needs. Historically, the public frequently relied on agency professionals to provide them with information about forest management (Shelby & Speaker, 1990). Now, fewer people regard the

Forest Service as a legitimate source compared to other information providers, including the timber industry (Shindler, 2003). This is a clear indication that people are less trusting of the agency these days and that the information it provides, or the formats information is disseminated in do not resonate with the needs and experiences of local citizens

**Conclusion:** Research indicates that the public increasingly criticizes the information Forest Service experts use in NEPA analysis. Public participation seems to have been unable to bring these disparate groups together to discuss, analyze, and come to a common understanding about the state of science and information. This has led to decreasing trust and less willingness to accept the “truth” of Forest Service analysis.

### Sincerity and the Forest Service

Not many researchers have investigated how the Forest Service, or other federal agencies are sincere in engaging in the NEPA public participation process. The most telling information in terms of sincerity are claims that the Forest Service often identifies their preferred alternative well before starting the NEPA process. By doing so, the agency may view the public participation process as a hurdle that must be “checked off” in order to make the decision they want. This often is reflected in how the agency restricts the scope of projects (Ackerman, 1990). The scope of a project can significantly affect the basic nature of analysis required for the EIS. By defining the scope narrowly, the agency can exclude facets of the real issues and ensure that they have an improved ability to defend its own position and desired outcome. This leads the agency to both restrict the scope of projects and dismiss public comments that reduce public comments and concerns. Additionally, some research indicates that participants do believe that the NEPA process is biased towards the Forest Service’s viewpoint (Germain, 2001).

**Conclusion:** There is some evidence that the Forest Service often views the public participation aspect of the NEPA process as onerous. It is not clear whether this attitude is prevalent across the entire agency. Those who view public participation as an onerous exercise believe that the public offers little substantive input to improve the design of alternatives. Thus, they are prone to rush through their public participation obligations in a way that ensures the public input they gather will not influence the final decision. Taking such an approach to public participation is insincere and inhibits citizens’ ability to influence decision-making.

## Legitimacy and the Forest Service

The legitimacy of Forest Service decisions can be measured by evaluating whether the public is willing to accept decisions the agency makes. The hope for engaging in public participation processes is that it will prevent the public from appealing the agency's decisions (Gericke & Sullivan, 1994). In 1983 the Forest Service had 584 administrative appeals filed against them. A decade later, the number of appeals peaked at 2,902 with an average of 1,200 appeals per year from 1995 to 1999 (USDA Forest Service, 1999). In addition to administrative appeals, by the 1980s, "nearly every significant decision of a federal agency was litigated in the federal courts" (Keele, Malmshemer, Floyd, & Perez, 2006). From 1989 to 2002, the Forest Service defended 729 suits in federal courts, won 57.6 percent of the cases, lost 21.3 percent, and settled 17.6 percent. The increase in appeals and lawsuits creates financial costs to the agency and frustrates both agency officials and planning participants (Gericke & Sullivan, 1994). Dale Robertson, another former Chief of the Forest Service said the appeals and litigation process has "become a significant generator of paperwork and a time consuming, procedurally onerous, confrontational, and costly effort" (USDA Forest Service, 1990).

**Conclusion:** The increasing number of appeals and lawsuits filed against the Forest Service indicates the legitimacy of agency decisions is questionable. What is unclear from previous research is what specifically is the cause for the loss of legitimacy. Some researchers have offered hypotheses but none have really investigated what motivates the public to file appeals and lawsuits. Without that information, it becomes difficult to suggest how the public participation process of the Forest Service has failed to build legitimacy or if this is just part of a larger trend of citizens loss of trust in government (Pew Research Center, 2010). Furthermore, it makes it difficult to identify what steps the Forest Service could take to improve and rebuild legitimacy for their decisions.

### 3.6 Conclusion: Communicative Action and the Forest Service

While previous research on Forest Service public participation and decision-making provides evidence that is useful in analyzing the four validity claims of communication, no previous work has holistically evaluated the Forest Service for communicative action. The previous research focuses across multiple decision-making processes, each with their own communication situations. Since communicative action is based on individual situations, these broad assessments of validity claims

cannot be used to establish whether Forest Service NEPA processes create communicative action. Rather each situation needs to be evaluated on its own to determine whether it meets the criteria to establish communicative action. It is this gap in ability to evaluate different communication situations that this study looks to address. The next chapter will discuss the development of a method to evaluate the ability of Forest Service NEPA projects and public participation to promote communicative action in decision-making.

## CHAPTER FOUR: Research Design and Methodology

This study is an exploratory case study that uses content analysis on a data set that includes NEPA documents and interviews with public commenters from two different Forest Service NEPA projects. The following sections describe in detail:

- ⇒ The study's research questions and method development;
- ⇒ Document analysis method;
- ⇒ Interview method and sample;
- ⇒ Case Selection; and
- ⇒ Limitations of the study's methodology.

### 4.1 The Case Study Method

There are many ways to design case study research. Typically, case study research uses empirical analysis to explore specific phenomena within a real-world context (Yin, 1994). A case study design can focus on a variety of variables, contain multiple sources of information for data, and typically be guided by a background theory. Case study designs typically fall into three categories: exploratory, explanatory, or descriptive. Furthermore, case study research can employ qualitative, quantitative, or a mixed methods approach to collecting and analyzing data. Finally, case study designs can focus on single or multiple cases.

This study uses the case study method because it allows for an in-depth exploration of a complex real-world situation: communication occurring during the Forest Service's project level decision-making. This decision-making process is complex as described in Chapter Three. Thus, in order to properly evaluate communication, a wide variety of information and data needs to be collected for each decision-making process that is analyzed. A case study method allows for a robust inquiry into the decision-making process and allows for the development of rich answers to the study's research questions.

The cases analyzed in this study were not selected randomly. Instead, they were carefully selected based on selective criteria. Initially, a list of 15 Forest Service cases was identified. This list comprised all Forest Service NEPA projects that developed an EIS in Washington and Oregon within the last five years. Based on a desire to increase the likelihood that interview participants would remember details of the projects, this list was narrowed down to cases completed in 2009 or later. Finally, two projects with

similar purposes that were both appealed were selected. Both projects were vegetation management projects. Controlling for project purpose was an attempt to reduce external variables, such as the level of controversy, which might influence public participation. However, contextual differences are likely between the two projects as they were conducted on different National Forests and in different states. Both projects were appealed, indicating that there was some level of conflict over the two projects

The *BLT Vegetation Management and Fuels Reduction Project* proposed to treat 80,000-acres of the Deschutes National Forest (central Oregon). The project's objectives were to reduce the risk of natural disturbances such as insects, diseases, and wildfires. The proposed action (Alternative B) involved both commercial and pre-commercial thinning of forest stands, prescribed burning, piling and disposal of activity-generated slash, and the construction of 9.8 miles of temporary roads. The project was appealed by three of the commenters. Ultimately, one appeal was affirmed and the other two withdrawn after appeal negotiations and the project was not litigated. Interestingly in the BLT case there was a lot of Forest Service engagement with a vagrant harvester population that all occurred prior to releasing an NOI and scoping. None of these harvesters actually commented on the DEIS, and on their behalf only a professional lobbyist commented.

The *Upper Beaver Creek Vegetation Management Project* proposed to conduct vegetation management activities on the Ochoco National Forest (central Oregon). The project's objectives were to modify stand structure across the planning area to improve the vegetative condition and restore plant communities towards a more acceptable historic range of conditions. Additionally, the project was designed to reduce the risk of large-scale disturbances such as wildfire, insects, and disease. The proposed action (Alternative B) involved both commercial and pre-commercial thinning, juniper removal, hardwood restoration, and fuels treatments. This project was appealed by two of the commenters. Ultimately, both appeals were withdrawn after appeal negotiations and the project was not litigated.

## 4.2 Method Development and Design

As discussed in Chapter One, this research attempts to answer the following research questions:

- Research Question 1:** Does the current Forest Service NEPA process lead to communicative action?
- Research Question 2:** What does the public think about Forest Service NEPA processes and communicative action?

**Research Question 3:** How can the Forest Service better foster communicative action in its NEPA processes?

To answer research question one, the communication for both the BLT and Upper Beaver Creek projects need to be evaluated for communicative action. In the theory of communicative action, Habermas offers four validity claims (comprehensibility, truth, sincerity, and legitimacy) as evaluation criteria for communicative action. These are the basis for evaluating whether communication in decision-making leads to communicative action. However, Habermas does not provide measurable criteria for evaluating the implementation of these four validity claims, and thus his work alone cannot stand as the framework for this study's method development. Rather, the work of an additional two researchers needs to be discussed in order to establish clear and measurable questions in order to answer research question one.

John Forester is a planning theorist particularly interested in participatory planning. He applied the theory of communicative action in order to re-conceptualize the planning process in a way that is more inviting for participants (1993). After observing a metropolitan planning department office of environmental review for 18 months, he derived communication strategies for planners to adopt to avoid contributing to "systematically distorted communication." His analysis of distorted communication was based on the four validity claims that Habermas said defined communicative action. Using these four "enabling rules," Forester established four "practical questions for planning." By using these questions, Forester identified examples of systematically distorted communication in face-to-face and organizational communication in political and economic public policy discussions.

David Dayton is a communications researcher and preeminent scholar on Habermas' theory of communicative action. Using Forester's initial planning questions and examples of distorted communication, Dayton developed a framework to evaluate the discourse of two EISs from Puerto Rico (2002). He took Forester's generalized planning questions and developed questions specific to EISs and the public participation process established by NEPA (Table 3). Dayton's seven questions form the basis for evaluating whether communication in Forest Service NEPA processes achieve the four validity claims of communicative action. Thus, in analyzing the data for this study, these additional sub questions provide the basis for answering research question one. Additionally, exploring these additional seven questions, provides insights for addressing research questions two and three as well.

Table 3: Dayton's Framework to Evaluate Communicative Action in EISs

Validity Claim	Questions To Evaluate the Achievement of the Validity Claim
<b>Comprehensibility</b>	(1) Is the EIS designed to communicate effectively to a mixed audience?
<b>Truth</b>	(2) Does the EIS present convincing evidence to support its claims? (3) Do comments by reviewers and opponents present any credible evidence that the agency has manipulated or hidden relevant facts?
<b>Sincerity</b>	(4) Does the EIS fairly represent the concerns of project opponents? (5) Does it address these concerns adequately?
<b>Legitimacy</b>	(6) Does the EIS record significant changes to key considerations in evaluating the project in response to issues raised by the public? (7) Does the public view the NEPA project as legitimate?

### 4.3 Data Analysis

This research used a combination of structured and open coding and content analysis to analyze the gathered data (Rubin & Rubin, 2005). Structured coding was used to assess the four validity claims of communicative action based on project EIS documents. In using structured coding, a specific framework based on specific elements was developed and then applied to a document. For this study, seven document measures were coded, each with their own structured coding framework and elements. Content analysis was used to assess the interviews and identify patterns and concepts relating to the four validity claims of communicative action. Content analysis as applied here began with identifying consistent patterns by grouping pieces of text into categories and overarching themes. Then, these categories were used to identify possible relationships between the categories (Rubin & Rubin, 2005). Lastly, these categories and relationships were compared with theory, in this case the theory of communicative action. All coding was carried out by the author of this thesis.

The next two sections provide an in-depth review of the document analysis and interview design. Before beginning this discussion; however, it is important to establish a clear relationship between the research questions and the methods designed to answer each question. Figure 7 serves as a "roadmap" linking research questions to pieces of the document analysis and interviews. As you can see, both the document analysis and interviews overlap to provide a clearer understanding of each validity claim.

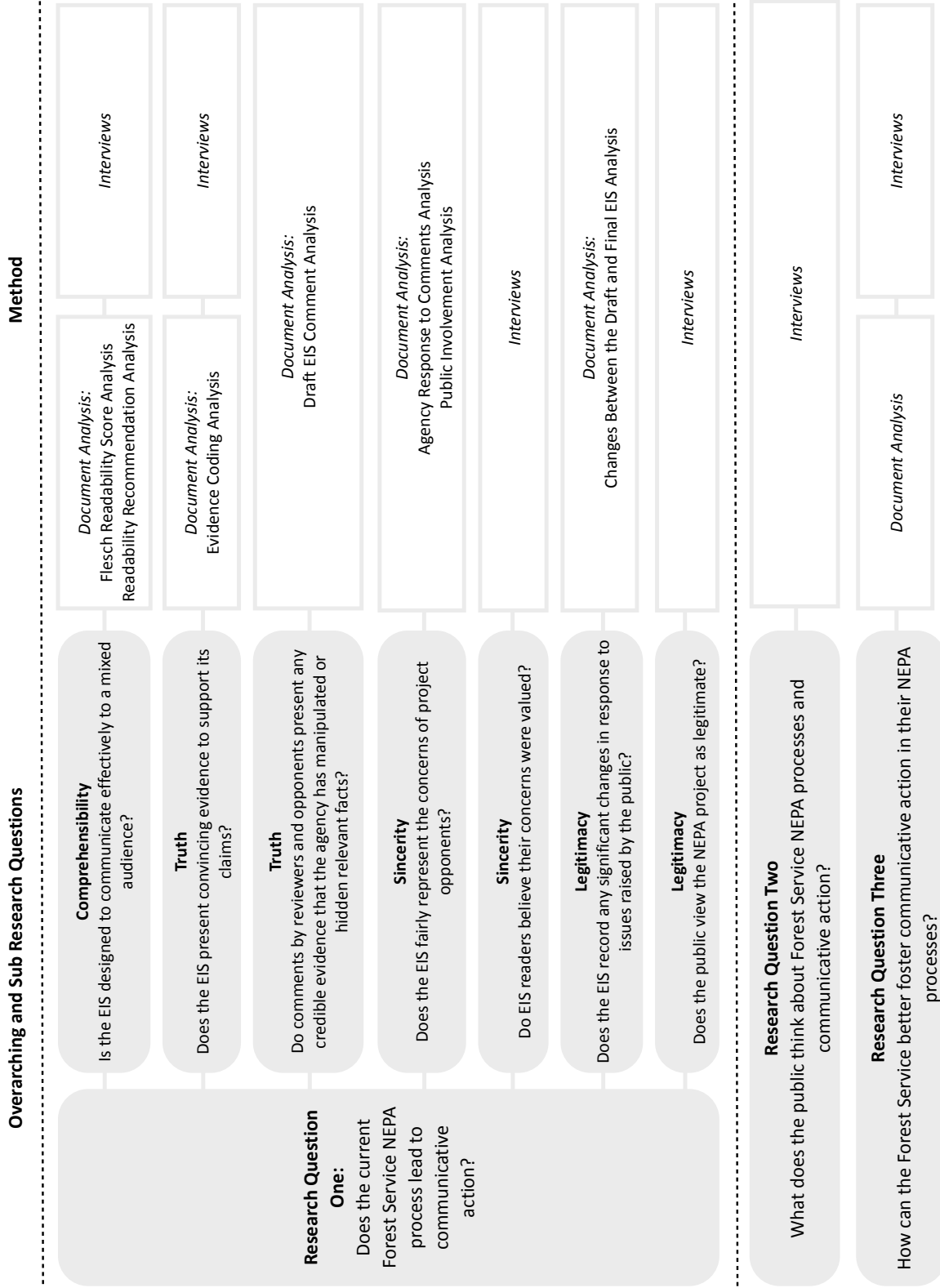


Figure 7: Visual Representation of the Relationship Between Method and Research Questions

## 4.2 Document Analysis

The document analysis provides a method to evaluate communicative action solely based on the EIS document. The EIS is developed and written by the Forest Service through the work of an interdisciplinary team of experts. The EIS's purpose is to be a disclosure document where the agency chronicles the decision-making process as well as the relevant information that led them to choose a specific alternative to implement. As such, the EIS presents an accurate portrayal of the decision-making process only as far as what is actually disclosed. A set of seven measures was developed for this structured coding analysis. These measures act as indicators to evaluate the four validity claims of communicative action. Some of these measures draw on previous research that evaluates NEPA documents for specific rhetorical dimensions. The comprehensibility measures are from a study measuring the readability of Forest Service NEPA documents (Lunde, Brody, & Ryan, Appendix E). The truth and sincerity measures were based on Dayton's (2002) rhetorical analysis of EISs. The other measures were developed specifically for this study as a first attempt towards developing objective, replicable measures. Table 4 outlines all seven of the document measures and their corresponding validity claims. The following sections discuss each of these measures in detail.

Table 4: Document Analysis Measures

Validity Claim	Research Question One Sub Question(s)	Document Measure(s)	Section of EIS Analyzed
<b>Comprehensibility</b>	Is the EIS designed to communicate effectively to a mixed audience?	• Flesch Readability Score Analysis	Entire EIS
		• Readability Recommendations Analysis	Entire EIS
<b>Truth</b>	Does the EIS present convincing evidence to support its claims?	• Evidence Coding Analysis	Purpose & Need and Environmental Consequences
	Do comments by reviewers and opponents present any credible evidence that the agency has manipulated or hidden relevant facts?	• Draft EIS Comment Analysis	Public Comments
<b>Sincerity</b>	Does the EIS fairly represent the concerns of project opponents?	• Agency Response to Comments Analysis	Public Comments
		• Public Involvement Analysis	Public Involvement
<b>Legitimacy</b>	Does the EIS record any significant changes in response to issues raised by the public?	• Changes Between the Draft and Final EIS Analysis	Changes Between Draft and Final EIS

## Comprehensibility Document Analysis Measures

### The Flesch Readability Score

Analysis provides information to answer Evaluation Question 1: Is the EIS designed to effectively communicate to a mixed audience?

Flesch Readability Formula			
206.835	1.015	$\left(\frac{\text{total words}}{\text{total sentences}}\right)$	84.6 $\left(\frac{\text{total syllables}}{\text{total words}}\right)$

This analysis uses the Flesch Reading Ease Scale, or Flesch formula (Flesch, 1974) to evaluate the readability of the EIS. The Flesch formula is one of the most commonly used formulas for calculating the level of difficulty of written text and is popular because of its ease of use and accuracy (Gallagher & Patrick-Riley, 1989; Klare, 1876). The formula can predict readability to within one grade level and is correlated with direct tests of reader comprehension (Powers, Sumner, & Kearl, 1958; Fowler & Smith, 1982). Flesch Reading Ease Scores range from 0, indicating the text is extremely difficult to read, to 100, indicating the text is extremely easy to read (Table 5). These scores can be used to identify what education level a reader needs to have mastered in order to understand the text. This study will use the computer program Flesch 2.0<sup>4</sup> to calculate the Flesch Score and grade level of the EIS. This program was chosen because it can score PDF documents, which are the typical format for Forest Service EISs. This program was used by Lunde, Brody, and Ryan (Appendix E) and was found to provide reliable results.

Table 5: **Description of Flesch Readability Scores**

Reading Ease Score	Description of Style	Estimated Grade Level	Typical Magazine
90-100	Very easy	5	Comics
80-90	Easy	6	Pulp fiction
70-80	Fairly easy	7	Slick fiction
60-70*	Standard	8/9	Digests, Time
50-60	Fairly difficult	10/12	Harper's, Atlantic
30-50	Difficult	College	Academic, scholarly
0-30	Very difficult	College graduate	Scientific, professional

\*The average citizen prefers reading text at about this level.

The Flesch formula does have its limitations - it does not consider factors known to contribute to comprehension, such as grammar, vocabulary, organization, and format. Thus, it should not be the sole guide in ensuring writing is readable. However, there is no other formula that produces more reliable results (Bostian, 1983; Bradley, 1980; Klare, 1976).

<sup>4</sup> <http://flesh.sourceforge.net/>

The *Readability Recommendations Analysis* can provide information on readability that the Flesch Formula does not measure. This analysis provides information to answer Evaluation Question 1: Is the EIS designed to effectively communicate to a mixed audience? This method is based on a framework developed by Lunde, Brody, and Ryan (Appendix E) to study the readability of Forest Service NEPA documents. This framework provides 24 readability recommendations, which the EIS is coded for (Appendix A). These recommendations were identified from literature discussing how to improve the readability and quality of technical documents. The majority of the recommendations are from The Federal Plain Language Guidelines (Plain Language Action and Information Network, 2011) supplemented with literature discussing NEPA-specific recommendations. These recommendations focus on the organization of the document, the clarity of writing, and aids used for clarifying information (e.g. graphics, lists, tables, etc.).

Each readability recommendation is scored on a two- or three-point scale. Two-point scales were used to score the presence or absence of a readability recommendation (a one indicating presence and a zero indicating absence). Three-point scales were used to score not only presence or absence of a recommendation, but the quality in which a recommendation was met. In some cases, the readability measures were evaluated based on numerical thresholds based on literature guidance. A full list of readability recommendations and coding schemes can be found in Appendix A.

## Truth Document Analysis Measures

The *Evidence Coding Analysis* provides information to answer Evaluation Question 2: Does the EIS present convincing evidence to support its claims? This measure focuses on evaluating the evidence the Forest Service presents in the EIS. The Forest Service makes claims in the EIS to justify the proposed action and the environmental impacts of the proposed project. The majority of these claims are made in the Purpose and Need and Environmental Consequences of the EIS. Each of the claims found in these

### Example of Readability Recommendations and Codes

*Recommendation:* EIS should include a glossary.

Two-Point Code:

- Glossary present = 1
- Glossary absent = 0

*Recommendation:* The best headings are in the form of questions or statements.

Three-Point Code:

- Question Headings = 1
- Statement Headings = 0.5
- Topic Headings = 0

*Recommendation:* Sentences should be written in active voice.

Three-Point Numeric Code:

- More than 66% of sentences use active voice = 1
- Between 33% and 66% of sentences use active voice = 0.5
- Less than 33% of sentences use active voice = 0

two sections were coded for the presence or absence of evidence in support of the claim. Additionally, the type of evidence to support claims was noted. Examples of claims with and without evidence are provided in Table 6. Upon completing this coding, a percentage of claims supported and unsupported by evidence were calculated.

Table 6: **Examples of Claims With and Without Evidence**

Claims with Evidence	Type of Evidence
These volume indices provide valuable baseline information regarding soil productivity potential for each soil type in the Deschutes SRI (Soil Resource Inventory, 1976).	Citation
Claims without Evidence	Type of Evidence
Soils derived from Mazama ash tend to be non-cohesive (loose) and have very little structural development due to their young geologic age.	No Evidence

The *Draft EIS Comment Analysis* provides information to answer Evaluation Question 3: Do comments by reviewers and opponents present any credible evidence that the agency has manipulated or hidden relevant facts? This measure uses comments submitted by the public to evaluate their perspective on whether evidence in the EIS is truthful. All of the public comments were categorized into eight specific comment types:

1. Comments that question the project itself;
2. Comments that question the impacts of the project;
- 3. Comments that question the evidence used in analysis; and**
- 4. Comments about the failure to disclose information.**
5. Comments that provide input to the Forest Service;
6. Comments that support the project;
7. Comments that support evidence used in the FEIS; and
8. Comments that request clarification.

After the coder categorized all of the comments, a percentage distribution was calculated.

In Dayton's study, he notes that when an agency submits a Draft EIS to the public for review they are implicitly claiming that they've stated only "those propositions they believe to be the best interpretation of all available facts." If an agency has distorted information to support its strategic motive, then Dayton claims we are likely to find evidence to this effect in the written comments recorded in response to the Draft EIS. He identifies that comments that question the evidence used by

the agency and comments that indicate the agency failed to disclose information clearly provide evidence of distorted information. Thus, this analysis reviews the percentage of comments that fall into comment types three and four.

### Sincerity Document Analysis Measures

The *Agency Response to Comments Analysis* provides information to answer Evaluation Question 4: Does the EIS fairly represent the concerns of project opponents? This analysis uses the Forest Service's response to public comments to evaluate the sincerity of communication. The Forest Service is required to respond to comments on the Draft EIS both individually and collectively. These responses must be substantive, providing "sources, authorities, or reasons which support the agency's position and, if appropriate, indicate those circumstances which would trigger agency reappraisal or further response"(40 CFR 1503.4). Each response to a comment was coded as either:

- ⇒ Present and detailed / answers commenter's concerns
- ⇒ Present but incomplete / doesn't answer commenter's concerns

Responses were considered present and detailed when they adequately addressed the comment's concerns and provided a clear discussion of how the agency would use their comment. Responses were considered incomplete when they didn't fully answer all the comment's concerns or the agency referred the commenter back to the EIS discussion without any clarification. After coding all the responses, percentages were calculated of detailed and incomplete responses.

The *Public Involvement Analysis* provides information to answer Evaluation Question 4: Does the EIS fairly represent the concerns of project opponents? This measure evaluates the opportunity for the public to communicate their concerns to the Forest Service. The Forest Service has discretion in deciding if, when, and how to engage the public beyond receiving comments during the scoping and Draft EIS comment period. Public participation literature highlights the importance that public participation needs to provide multiple avenues of engagement (different involvement types) and enough involvement for adequate participation (number of involvement activities) (Ackerman, 1990; Hansen & Wolff, 2000; Shepherd & Bowler, 1997). If the NEPA process is conducted in a sincere way, then these recommendations should be met. This analysis assumes that the more involvement activities and different involvement types used during the NEPA process indicate the Forest Service's sincere attempt to involve the public. The different involvement types and activities were recorded and compared to Lunde, Brody, and Ryan's (Appendix E) study to discern if the public participation efforts of the case are

below average, average, or above average for the Forest Service. Public involvement types may include: public meetings, field trips, stakeholder meetings, or presentations. The total number of involvement activities was calculated by adding up all the public participation activities offered by the Forest Service for the project. This analysis does not propose to analyze the effectiveness of individual participation methods.

### Legitimacy Document Analysis Measures

The *Changes Between the Draft and Final EIS Analysis* provides information to answer Evaluation Question 6: Does the EIS record significant changes in response to issues raised by the public? This measure evaluates how influential public comments were at changing the proposed project. Dayton's research proposes that if an agency is legitimately engaging in communicative action they will be willing to have public input significantly influence and change the project. Each Forest Service Final EIS contains a section describing the changes made between the Draft and Final EISs. Using Nvivo 9, these changes were coded for their significance using a five-point Likert scale (Table 7). The significance of a change was based on how impactful a change is for the project. The frequency of changes for each significance level were calculated and used to evaluate legitimacy.

Table 7: Likert Scale for Evaluating Significance of Changes Between the Final and Draft EIS

Likert Scale	Example
5 – Extremely Significant Change	New alternative created/analyzed
4 – Very Significant Change	Additional analysis
3 – Somewhat Significant Change	New literature or information added
2 – Slightly Significant Change	Clarification of data or analysis
1 – No Significant Change	Grammatical changes, editing

### 4.3 Interview Method

While the comprehensibility and truth validity can be evaluated quite thoroughly by analyzing the rhetoric and EIS document, the sincerity and legitimacy claims are much more difficult to evaluate solely on the content of the EIS. Rather, sincerity and legitimacy are highly subjective and influenced by an individual's values, relationships, and past experiences. Without understanding and taking into account this subjectivity, an evaluation of these validity claims would be woefully incomplete. In order to more robustly evaluate these validity claims, individuals who commented on the Draft EIS were contacted and interviewed.

Interviews are a form of qualitative research method that seeks to describe and understand the meaning of central themes in the lifeworld of the participants (Kvale, 1996). Interviews as a method allow researchers to acquire an in-depth story behind participant's experiences. Compared to other qualitative methods, interviews offer a far more personal form of research where the interviewer to directly work with participants. There are multiple forms of interview methods including: informal or conversational interviews; general interview guide approach; open-ended interviews; and fixed-response interview. This study uses the interview guide approach to interviewing where a guide is used to ensure that the same general areas of information are collected from each participant.

The interviews focused primarily on understanding the participant's perspective on sincerity and legitimacy. However, the interviews also asked short questions probing the participant's thoughts on comprehensibility and truthfulness of Forest Service communication. In order to better understand each participants perspective, they were first asked about their impressions of the NEPA process, their past experience participating in NEPA processes, and what they viewed as their role in the NEPA process. The first phase of the interviews focused on getting an understanding of why these participants participated in the NEPA process, what they thought their role was in decision-making, and their general impressions of the NEPA public participation process. Prior to conducting interviews with participants, two test interviews were conducted which led to a refinement of the interview questions. The full interview guide is in Appendix B.

At the end of the interview, participants were asked to answer a short, one-page survey. The survey was designed to test and verify responses during the interview. The survey asked the participant to:

- ⇒ Indicate what percentage of the EIS they read;
- ⇒ Rank their agreement on four statements each corresponding to a validity claim; and
- ⇒ Answer four yes-no questions about specific details of the Forest Service project to gauge whether their responses during the interview were based on past experiences with the agency or just their interaction during the project in question.

The full set of survey questions can be found in Appendix C.

Each interview was recorded and transcribed. Each transcript was uploaded into Nvivo 9, a computer program that facilitates content analysis. The program allows transcripts to be coded by developing "nodes" which represent key concepts. The program organizes all text highlighted at a node

as well as the ability to begin identifying clear relationships between nodes. In this manner, each interview transcript was coded.

In the first review of interview transcripts I coded the interviews into overarching theme codes. These were determined prior to coding based on the four validity claims of communicative action and included: general NEPA impressions, comprehensibility, truth, sincerity, and legitimacy. A second coding review focused on creating concept codes within each of the overarching theme codes. Thus, each theme code was reviewed and divided based on different concepts prevalent in the transcripts. Table 8 provides a complete list of coding concepts and examples from interview transcripts for each code.

Table 8: **Coding Dictionary**

<b>Overarching Theme 1: General NEPA Impressions</b>	
<b>Concept Codes</b>	<b>Example from Interview Transcripts</b>
Experience with NEPA	<i>Well I've been doing NEPA review since 2005.</i>
Positive Impressions of NEPA	<i>It is a fantastic tool for doing citizen level democracy, in making decisions that affect the environment.</i>
Negative Impressions of NEPA	<i>My perspective of it is that it's pretty high requirements from the Forest Service. Almost anyone with a little money and little intelligence can stop almost any project.</i>
NEPAs Intent versus Reality	<i>I think the NEPA process itself started out with very good intentions by people in Washington [DC], but I think its turned into sort of a legal contest.</i>
Role in the NEPA Process	<i>To provide moral support for the Forest Service.</i>
Motivation to Participate	<i>What the Forest Service does affects our community even though it doesn't affect me directly. I've an interest in natural resource management.</i>
Scoping	<i>I think from my standpoint the most effective part is the scoping part of it.</i>
DEIS Comment Period	<i>The comments on [the EIS] I don't think they really sway anybody.</i>
Appeals/Litigation	<i>They will make agreements in the appeals process, which they don't want to follow and they will do their best to not have to follow them.</i>
Barriers to Participation	<i>I mean it takes a while to learn how this stuff really works</i>
<b>Overarching Theme 2: Comprehensibility</b>	
<b>Concept Codes</b>	<b>Example from Interview Transcripts</b>
Barriers to Comprehensibility	<i>You can see how thick these things are [holds up a draft EIS]. That kind of stifles people.</i>
Case Specific Impressions	<i>It was actually, if I recall, very readable.</i>
<b>Overarching Theme 3: Truth</b>	
<b>Concept Codes</b>	<b>Example from Interview Transcripts</b>
Barriers to Truth/Trust	<i>The agency tends to build their documents as an argument in favor of their proposal.</i>
Sufficient Evidence	<i>The Forest Service is very good about providing information up front.</i>
Insufficient Evidence	<i>They just say we have too many dense forests, lets make some more less dense forests</i>
<b>Overarching Theme 4: Sincerity</b>	
<b>Concept Codes</b>	<b>Example from Interview Transcripts</b>
Response to Comments	<i>You can tell by how they respond to [comments] on whether or not they're giving you any credibility.</i>
Technocratic Mindset	<i>They don't care. They're going to do what they want to do anyways.</i>

Table 8 continued: **Coding Dictionary**

Impacts of Insincerity	<i>They will make agreements in the appeals process, which they don't want to follow and they will do their best to not have to follow them.</i>
<b>Overarching Theme 5: Legitimacy</b>	
<b>Concept Codes</b>	<b>Example from Interview Transcripts</b>
Accept Decision	<i>Well I think it was a good project. I think it was necessary.</i>
Appeal/Litigation	<i>I think in the end we ended up appealing but then resolving our appeal.</i>
Factors Increasing Legitimacy	<i>It's good in the sense that it's a very prescriptive process, it has specific time periods for scoping, it has specific time periods for commenting on EAs or draft EISs and that type of stuff.</i>
Factors Reducing Legitimacy	<i>They prepared the NEPA documents we commented on and when the final decision came out and I looked at it I went through the roof. Everything I was articulating on behalf of the industry was completely ignored</i>

## Interview Sample

Potential interview participants were identified from the Final EISs. The Final EISs listed the names and organizations of individuals who submitted comments on the Draft EIS. Overall, between the two projects 16 commenters were identified, three of which commented on both projects (Table 9). All commenters were contacted by email inviting them to participate in the study. Individuals that had commented on both projects were interviewed for only one of the projects, chosen arbitrarily, to reduce any confusion during the interview. Six commenters responded and were interviewed. Additionally, one of the Forest Service NEPA Coordinators was interviewed to provide the Forest Service's perspective on communication. Even though fewer than half of the potential interview participants were interviewed, the sample ranged across all the different interest types commenting on the two projects.

Table 9: **BLT and Upper Beaver Creek Public Commenters by Organization Type**

Organization Type	Total Commenters	Total Interviewed
Federal Agency	3	1
Environmental Interest Group	5	1
Local Government	2	2
Commodity Interest Group	3	1
Individual	4	1
<b>Total Participants</b>	<b>17</b>	<b>6</b>
<i>Forest Service NEPA Coordinators</i>	2	1

## 4.5 Methodology Limitations

The purpose of using a case study approach is to provide an in-depth understanding of one specific case. This depth of understanding is important in order to fully evaluate communication between the Forest Service and the general public. However, the conclusions drawn from a case study cannot be

generalized much beyond the case. This limits the ability to understand whether these findings are common to a larger portion of Forest Service communication efforts. Yet, the study's findings can still offer pertinent recommendations to the Forest Service and other agencies in how better to communicate with the general public.

An additional limitation to the methodology used in the study was the relatively small interview sample size. Less than half of the commenters were interviewed about their perspectives. This small sample size may have skewed the study's findings based on the input of relatively few. However, even with such a small sample size, multiple interview participants shared certain themes.

A further caveat to the findings is that all coding was carried out by the author, which means that the data were not coded blind to the study hypotheses. While this is a potentially important limitation, the study involves triangulating across several different methods and analyses, which mitigates concern that the findings are robust.

Lastly, since NEPA processes are often lengthy, it was difficult for some interview participants to accurately recall details of the projects. This made it difficult to get them to discuss fully aspects of each validity claim as it related to the specific project. Rather, interview participants often spoke more generally about their thoughts and impressions. This made it difficult to use the interviews to directly evaluate communicative action in these two specific cases. However, this might make these findings more generally relevant because they may represent more enduring perceptions of the NEPA process.

## CHAPTER FIVE: Communicative Action Results

This chapter presents the findings and results of this study that relate to research question one: *Does the current Forest Service NEPA process lead to communicative action?* The chapter discusses the findings of the document analysis and interviews for each of the four validity claims: comprehensibility, truth, sincerity, and legitimacy. Full analysis of these results is discussed in Chapter Six where conclusions regarding each research question are explored.

### 5.1 Comprehensibility Findings

This section discusses the document analysis and interview findings for the comprehensibility validity claim.

#### Comprehensibility Document Analysis

**Research Question:** Is the EIS designed to communicate effectively to a mixed audience?

**Document Measures:** Flesch Score Readability Analysis & Readability Recommendation Analysis

The Flesch Readability scores and corresponding grade levels for the two EISs were quite similar. The BLT EIS scored a 32.96 and the Upper Beaver Creek EIS scored a 36.60. These scores indicate the documents are “difficult” to read and require a college education to comprehend. As with the readability recommendations, both projects fall within the range of Flesch Readability scores for the Forest Service NEPA documents reviewed by Lunde, Brody, and Ryan (Appendix E) (Figure 8).

Of the 24 readability recommendations, the BLT EIS included 16 (67%) and the Upper Beaver creek EIS included 14 (58%). The overall number of recommendations incorporated into these EISs falls within the typical range for Forest Service NEPA documents based on Lunde, Brody, and Ryan’s (Appendix E) readability study (Figure 8). Both projects only followed a few of the recommendations to enhance the EISs organization. The BLT EIS used a roadmap in the introduction to inform readers what

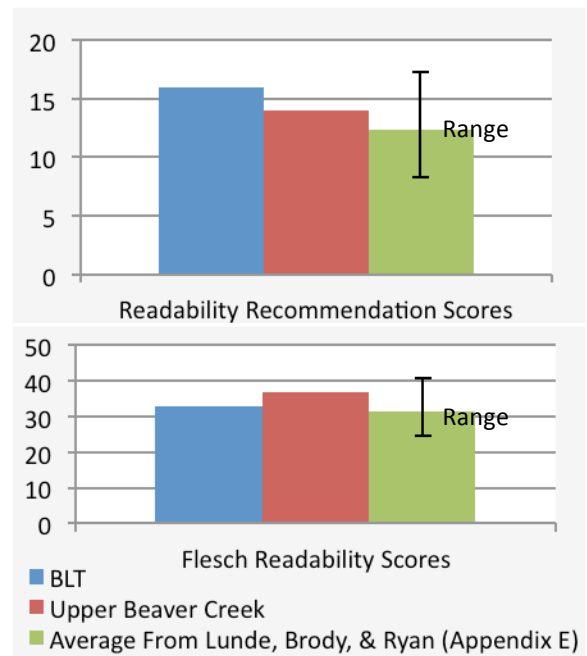


Figure 8: Comparison of Readability Recommendation Scores & Flesch Scores

each chapter discussed as well as providing chapter titles on each page. The Upper Beaver Creek EIS only incorporated a roadmap. Both EISs used ineffective topic headings and used above the recommended three heading levels. Both projects incorporated recommendations for improving the writing of a document including: short sections, using active voice, and writing short paragraphs. At the same time, neither EIS incorporated many transitions between paragraphs or topic sentences, and both often used complex sentence structures. Both EISs listed common acronyms, provided bulleted lists, highlighted key words, and used tables to clarify information. However, neither included sidebars or enough graphics or pictures, and both explained poorly the graphics and tables they did include. For more details on which recommendations were included or excluded from the two EISs see Appendix D on page 109.

#### Flesch Readability Scores: Examples from the BLT and Upper Beaver Creek FEISs

Below are two randomly selected paragraphs, one from the BLT EIS and one from the Upper Beaver creek EIS. Each paragraph was scored using the Flesch formula and illustrates the difficult language and writing that can be found throughout both EISs.

BLT EIS paragraph from page 58 – Flesch Score of 36.09:

*Advance harvest systems such as skyline or helicopter would be required on slopes greater than 30 percent unless the unit contains a steep pitch (slopes of 30 percent or steeper) less than 100 feet long. In that case, equipment would be permitted to make one pass out and one pass back to harvest trees (Project Design Features, Chapter 2). Advanced harvest systems on these steeper slopes are prescribed to reduce potential for soil displacement and erosion by reducing disturbance. It is assumed and has been observed the effects to these types of sensitive soils using an advance harvest system would be much less than ground-based harvest systems.*

Upper Beaver Creek EIS paragraph from page 12 - Flesch Score of 20.98

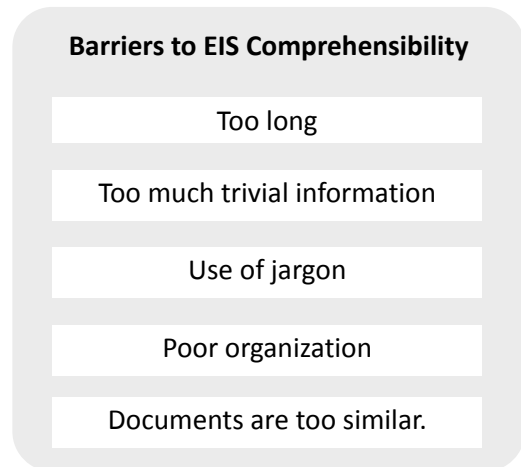
*Alternative 2 proposes a variety of commercial and non-commercial vegetation treatments along with prescribed burning to respond to the purpose of and need for action. Proposed treatments are generally intended to move stands in a multi-strata condition to or towards a single-stratum condition. Many stands would continue to be in an uneven-aged condition. Density reduction activities are intended to maintain and develop large trees on the landscape through reduction of competitive stress (see Cochran et al, 1994 and Powell, 1999). Prescribed burning activities are intended to reduce naturally occurring forest debris, seedlings and saplings to maintain low intensity fire conditions in stands that have been previously treated. Activity-generated fuels would be reduced through underburning and grapple piling. A proposed shaded fuel break around Summit Trail is intended to protect the historic value of the Summit Trail and to provide for firefighter safety.*

## Comprehensibility Interviews

**Research Question:** Is the EIS designed to communicate effectively to a mixed audience?

When asked about comprehensibility, interview participants often discussed specific reasons why EISs were difficult to read. Interview participants felt that **EISs were too long**. EIS documents tend to be “thick” documents and participants have only seen them get thicker over time. One participant cited

that they had not seen a Forest Service EIS that was less than three hundred pages for any of the projects in which they had participated in. Another participant echoed that the current length of EISs far exceeds the CEQ regulation that EISs should be around 150 pages. Participants thought long EISs were a critical barrier for the public because they discouraged people from even attempting to read the document. Participants thought long documents were “intimidating and...you are not invited to participate or comment.” Instead of reading these long documents one participant said that people just “roundfile<sup>5</sup>” them without even looking through them.



The second barrier, that **EISs include too much information**, was considered a key reason EISs were too long. One participant indicated that when the Forest Service provides the amount of information they do, it becomes overwhelming for readers. While an EIS is supposed to provide good analysis and discussion to explain how the Forest Service came to certain conclusions about environmental impacts, participants indicated that there is often information “fluff” that is not important to establishing a good analysis. Increasing the inability for readers to comprehend this large amount of information is the **excessive use of jargon and acronyms**. Jargon occurs when unnecessarily complicated and convoluted language is used to express a point to your reader. When readers come across jargon it often causes misunderstanding or alienation, even when the audience is used to technical writing (Plain Language Action and Information Network, 2011). Participants echoed these consequences of jargon, indicating their inability to understand the Forest Service and their discussion.

Compounding the issues of information overload and jargon is the **poor organization of EISs**. One participant especially felt that EIS documents are often written in a way that can make finding information difficult. They indicated that even with a table of contents they have difficulty finding information. They now spend time skimming various EIS sections searching for information about the topics they’re interested in.

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<sup>5</sup> Roundfile is the relatively simple action of tossing useless documents or other papers you don't care about into the trash bin (usually round in shape).

Participants also felt that Forest Service **EIS documents are quite similar**. While this might seem a solution to help them find information easier, it actually was expressed as an additional barrier. When EISs tended to be similar it confused participants because the content of the various documents would blend together and they could easily lose track of which project they were focusing on. This was especially the case for participants who read and commented on many projects. This feeling of repetition made reading new documents boring and uninteresting. One participant said they felt “you could probably take a couple of those documents and lay them side-by-side and pick chunks of them and have virtually similar wording out of the documents.” One participant stated they thought the reason that these documents were so similar was related to the ability of the Forest Service to defend the document in court. This seemed to be supported by the comments of a Forest Service Manager:

I will not let something out until it's defensible. There's so much at stake. And the costs, we have some projects excess of 750,000 dollars. You cannot afford to let a document out that's not readable or at least your methods are explained and you can back up everything you say and their conclusions.

To ensure the defensibility of the document the Forest Service manager indicated that they rely on documents that have proven successful in court. They borrow how information was presented and organized by “plagiarizing” good analyses. This would likely lead to documents becoming increasingly similar and reduce the Forest Service’s willingness to attempt creative analysis and discussion of impacts.

Interview participants clearly stated that these comprehensibility barriers diminish their desire to read an EIS. Participants would typically read only the Purpose and Need, the alternatives, and sections relating to their specific interest. Thus on average participants indicated they only read about 54% of the EIS (Table 10).

Table 10: **Percent of the EIS Each Participant Read**

Participant's Response						Average
25%	75%	100%	50%	25%	75%	54%

Interestingly, given all these comprehensibility barriers, all interview participants articulated that the BLT and Upper Beaver Creek EISs were readable, useful, and helpful in their understanding of the projects. One participant even went on to say that they found the EIS rather approachable. Furthermore, participants were hesitant to provide insight into how EISs could be written to increase their understandability and decrease these perceived barriers they articulated. Some were even concerned that by doing so, the documents would be “dumbed” down. One participant articulated this concept quite clearly:

I'm torn...because if they made it totally accessible to the general public, it wouldn't deal with a lot of the important issues that I want to deal with, like this whole idea of whether or not you can log the forest to save it from fire to benefit the spotted owl. That is a really complicated probabilistic thing and to actually put that in really simple terms I think would dumb it down and almost make it easier for the Forest Service to just sort of gloss over my concerns because they would just put it in such simple terms that my nuanced concern would never get dealt with. So I think their needs to be somehow both publicly accessible and scientifically rigorous and there's a tension between those two things.

Other participants were afraid there would be a loss of clarity and detail in how the Forest Service would explain why the project was proposed. Another concern about changing the document to be more readable was that participants felt that by doing so it would decrease their ability to provide informed comments to the agency.

### Comprehensibility Conclusions

**Comprehensibility Conclusion 1:** The document analysis indicates the two project EISs are difficult to read and comprehend.

The document analysis and interviews provide some conflicting perspectives on the comprehensibility of Forest Service EISs. On one hand the document analysis clearly indicates that the two EISs are written and organized poorly. Researchers have concluded that the average reader prefers reading at an eighth-grade level (Barry, 1980; Christ & Pharr, 1980; MacDonald, 1979; Axline & Bonine, 1990; Gallagher & Patrick-Riley, The Readability of Federal Land Management Plans, 1989). Both Forest Service EISs are written at a fourteenth-grade level, five grade levels above what the general public prefers. While it is possible for motivated readers to understand more complex text, reader motivation has been shown to raise reading levels by only one or two grades, well below what is needed to make the two project EISs understandable to the public (Axline & Bonine, 1990).

**Comprehensibility Conclusion 2:** Interview participant's backgrounds influence their perspectives on the comprehensibility of EISs.

Interview participants further identified multiple reasons why Forest Service EISs are difficult to understand. However, they indicated that they rarely had "difficulty" understanding or comprehending the EIS even if it took them time to read and comprehend the difficult text. Additionally, interview participants were at best hesitant to see the EISs redesigned to improve readability, fearing that it would result in a "dumbed" down version lacking key information. Participants clearly had grown used to reading these difficult EISs and saw change as detrimental rather than beneficial. This is not surprising given the participants past experience with the Forest Service and NEPA:

⇒ All respondents had reviewed projects prior to the BLT and Upper Beaver Creek;

- ⇒ Two participants have been engaged with EISs for 20 years;
- ⇒ Two have actually participated in writing an EIS in the past; and
- ⇒ One indicated they review 20-30 EIS a year for various agencies.

Additionally, all except one participant reviewed Forest Service NEPA projects as part of their jobs. It seems likely that these past experiences influenced participants' perspectives on the comprehensibility of Forest Service EISs. When directly asked to score the comprehensibility of the EIS, all participants agreed the EISs were comprehensible (Figure 9).

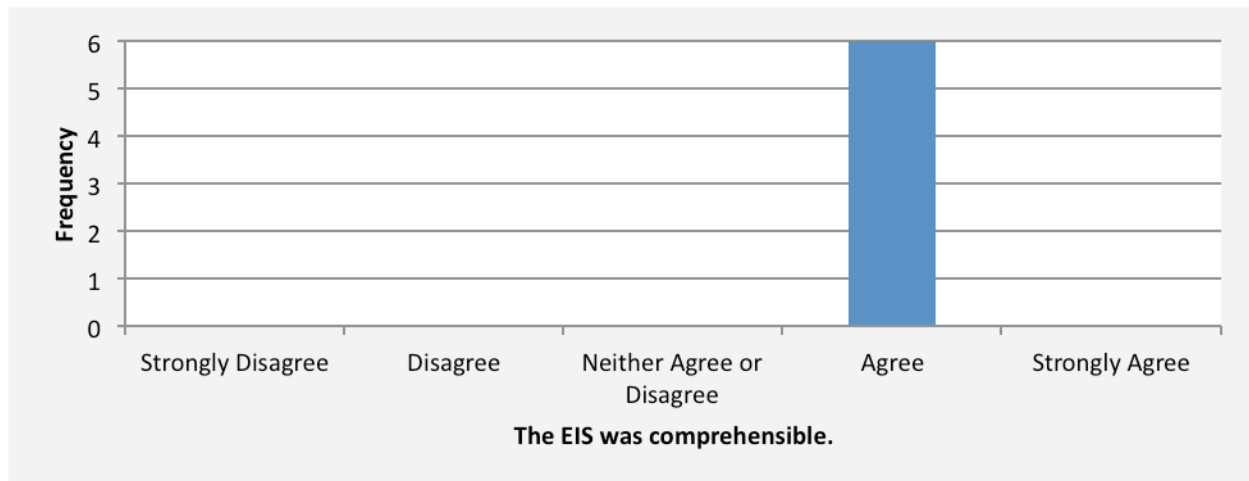


Figure 9: Interview Participant Comprehensibility Scores

**Comprehensibility Conclusion 3:** The BLT and Upper Beaver Creek EISs are not designed to communicate effectively to a mixed audience.

Overall, accounting for the document analysis and interview findings, the Forest Service EISs for the BLT and Upper Beaver Creek were not comprehensible to a mixed audience. The EISs difficult writing and organization along with their length discourage the public from participating in the NEPA process. While interview participants generally thought the two EISs were readable, they are what might be termed “professional participants” with enough background and expertise to comprehend these difficult EISs. If someone off the street were asked to read and comprehend these documents, they most likely would be confused to the point where they would be unable to participate in the decision-making process.

### 5.3 Truth Findings

This section discusses the document analysis and interview findings for the truth validity claim. These findings provide information to answer research questions two and three:

- ⇒ Is the EIS designed to effectively communicate to a mixed audience?
- ⇒ Do comments by reviewers and opponents present any credible evidence that the agency has manipulated or hidden relevant facts?

#### Truth Document Analysis

**Research Questions:** Does the EIS present convincing evidence to support its claims? Do comments by reviewers and opponents present any credible evidence that the agency has manipulated or hidden relevant facts?

**Document Measures:** Evidence Coding Analysis & Comment Analysis

For both projects, the majority of Forest Service claims were not supported by evidence in the EIS. The BLT project EIS only included evidence to support 36 percent of its claims (Figure 10). The Upper Beaver Creek project EIS only included evidence to support 40 percent of its claims (Figure 11). The majority of evidence used to support claims was citations of scientific articles. Other forms of evidence included: discussing scientific studies, providing tables or graphs, and direct discussion of data (Figure 12)

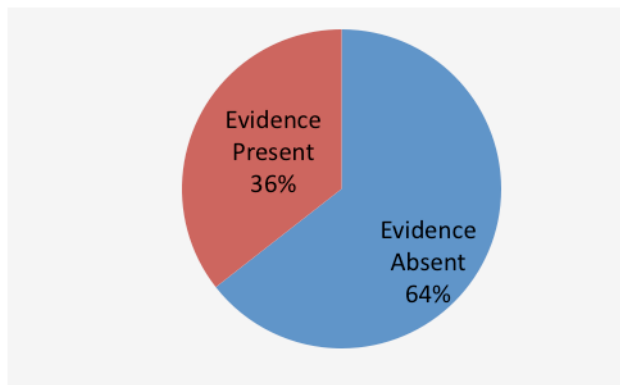


Figure 10: BLT Claims Supported with Evidence

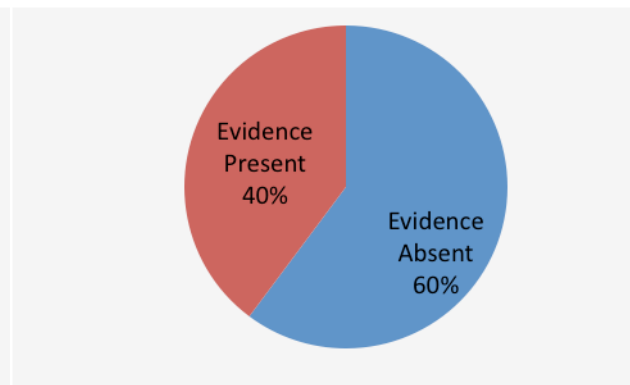


Figure 11: Upper Beaver Creek Claims Supported with Evidence

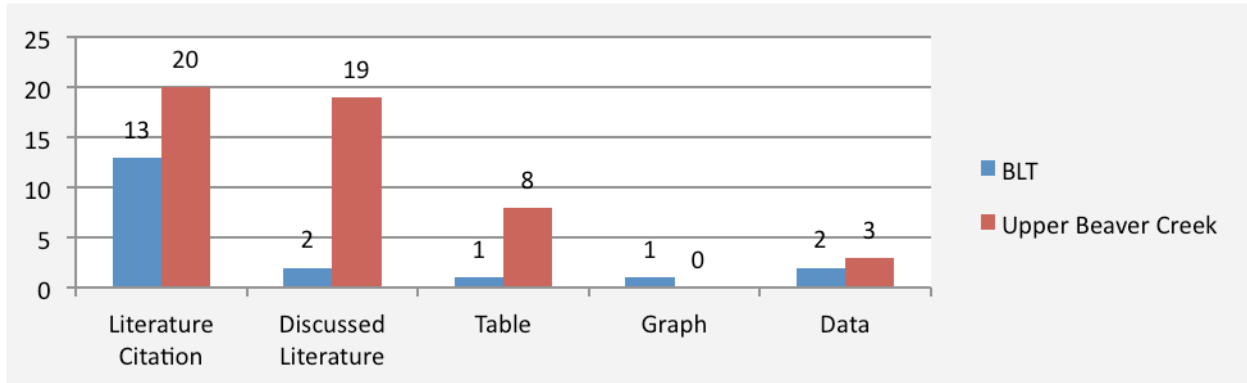


Figure 12: Frequency of Evidence Types for the BLT and Upper Beaver Creek Projects

For both the BLT and Upper Beaver Creek projects, the percentage of comments in each comment type was similar (Table 11). For both, the majority of public comments provided input on the project. These comments were specific suggestions on how to improve the project on topics such as which alternative the commenter thought the agency should finally choose, how to interpret data analysis, and additional evidence to analyze. These types of comments provide little evidence in terms of how commenters felt about the NEPA process.

Table 11: Percentage of Comments in Each Comment Type

Comment Types	BLT	Upper Beaver Creek
Provide Input	36%	35%
<i>Question Evidence</i>	<i>29%</i>	<i>19%</i>
<i>Failure to Disclose Information</i>	<i>17%</i>	<i>19%</i>
Question Project Impacts	9%	13%
Question the Project	8%	11%
Support the Project	1%	1%
Support Evidence	0%	1%
Comprehension Question	0%	1%

Italics indicate the two comments corresponding with the distortion of truth by the Forest Service.

The second and third highest amount of comments were commenters questioning evidence the Forest Service used or indicating the agency failed to disclose certain information in their analysis. These were the two comment types that indicate challenges to the truthfulness of the agency. Combining these comments indicates that 46 percent of the BLT and 38 percent of the Upper Beaver Creek comments indicated a lack of truthfulness by the Forest Service. These comments often articulated commenters' concerns that the Forest Service did not provide sufficient evidence to support their claims. Additionally, commenters noted that without all the evidence, they were unable to understand, analyze, and adequately comment on the proposed projects.

Commenters also wrote comments questioning the Forest Service on their analysis of project impacts and the decision to conduct the project at all. These comments were generally about how commenters disagreed with the result of the alternatives analysis. Commenters would discuss how the Forest Service used poor assumptions or didn't include certain considerations in modeling and analyzing environmental impacts. Lastly, both the BLT and the Upper Beaver Creek project received a minimal number of comments indicating support for the project. In addition to these comments the Upper Beaver Creek project also had a few comments indicating support for the evidence used by the Forest Service and some comments asking the agency to clarify their analysis and discussion in a more understandable manner.

In addition to understanding what types of comments were submitted for the BLT and Upper Beaver Creek projects, it is important to analyze the distribution of comments among various interest groups. Environmental interests provided the most comments of all commenters for both projects (Table 12). For the BLT project environmental interests submitted 155 comments, representing 86 percent of all the comments on the project. For the Upper Beaver Creek project, environmental interests submitted a total of 337 comments, representing 88 percent of the total comments. Timber, federal agencies, and individuals provided much fewer comments for both projects. The sheer amount of comments from environmental interests may bias the comment coding analysis. In the past, environmental interests have been among the harshest critics of the Forest Service and their management decisions. It would be likely that they would be highly critical and question both the evidence the agency brought forward as well as whether they felt the agency failed to consider important environmental impacts. For both the BLT and Upper Beaver Creek projects, environmental interests provided the majority of comments questioning the evidence and identifying failures to disclose information (Figure 13 and Figure 14). However, with the information from the comment analysis, it is difficult to discern if environmental interests were more actually more likely than other groups to question the Forest Service's evidence.

Table 12: **Percentage of Comments by Interest**

Commenter Interest	BLT	Upper Beaver Creek
Environmental	86%	88%
Forest Industry	8%	1%
Federal Agency	6%	1%
Individual	0%	10%

**Comment Types:** Examples from the BLT and Upper Beaver Creek FEISs

Below are comments from the BLT and Upper Beaver Creek EIS. Each comment is an example of comments coded for the various comment types.

**Provide Input:** “While many harvesters agree that no timber harvest in high production Matsi areas is preferred, there is agreement that if logging in any of these areas does occur it be done in a way as to minimize soil damage. These include over snow, large equipment staying on skid roads with machine arms accessing downed material, helicopter logging etc.”

**Question Evidence:** “The agency cannot use ‘average’ snag levels (e.g. 50% tolerance level) as a management objective within treatment areas, because treatments are essentially displacing natural disturbance events which would normally create and retain large numbers of snags, so disturbance areas should have abundant snags, not average levels of snags. It would be inconsistent with current science and current management direction to manage only for the mid-points and low points. The agency should manage for the full natural range dead wood levels, including the peaks of snag abundance that follow disturbance.”

**Failure to Disclose Information:** “The EIS fails to adequately disclose and address scientific research and Northwest Forest Plan science foundations related to LOS and mature forest-dependent species, waiving away these outright in favor of the agency’s logging plans without adequately informing the public or decision maker of scientific recommendations against such logging, overall wildlife viability recovery objectives, cumulative impacts issues, and the accurate extent of the likely harmful consequences of its actions to species of concern that are or may be within the project area.”

**Question Project Impacts:** “The project intends to reduce the complexity of late-successional reserves by thinning the understory and reducing the complexity of the canopy. The canopy cover will be reduced, the stem density reduced, and downed wood will be reduced in the project area. It is unclear whether the BLT Project will reduce the amount of late-successional forest below the required 15% at the fifth- field watershed level, especially when including the effects of the numerous other recent and concurrent projects.”

**Question the Project:** “The agency’s analysis of snag retention and habitat for cavity dependent species is faulty at both a programmatic level and at a project level. The agency must defer any decision on this project until it reviews all the available new information and amends its management plan standards to provide adequate snags for wildlife and all other ecosystem functions.”

**Support the Project:** “We support most of this project especially the non-commercial thinning, hardwood treatments, and reintroduction of fire. We have a few comments, mostly about the commercial treatments.”

**Support Evidence:** “Mitigations specified for *Calochortus longebarbatus* var. *peckii* DEIS p. 25 should apply to all sale units, not just those with Longbeard mariposa lily. We support the mitigations listed to protect Sensitive plants and comprehensive mitigations and prevention measures to prevent the introduction and spread of exotic plants, including those listed on DEIS pp. 26-27.”

**Comprehension Question:** “The EIS has confusing information about roads. It looks like the roads that are to be decommissioned by this project are already decommissioned but they would be reopened then redecommissioned. The NEPA analysis needs to be this puzzle together clearly for the reader.”

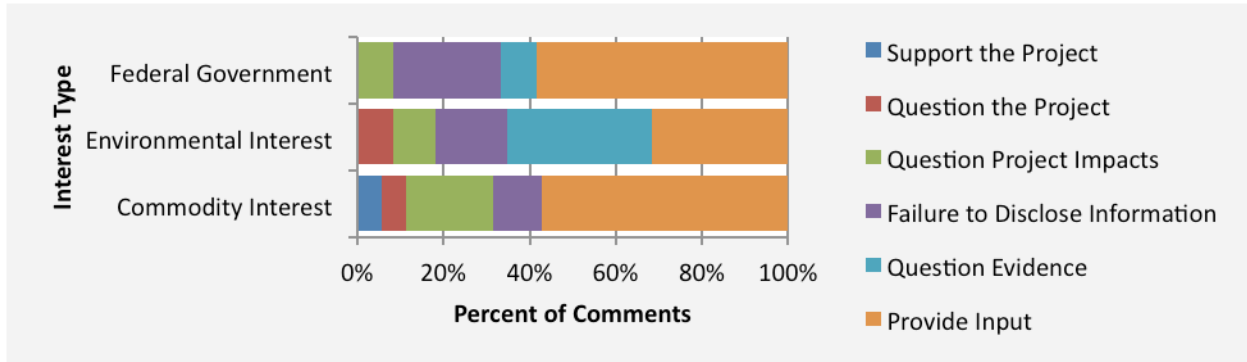


Figure 13: Types of Comments by Interest for the BLT EIS

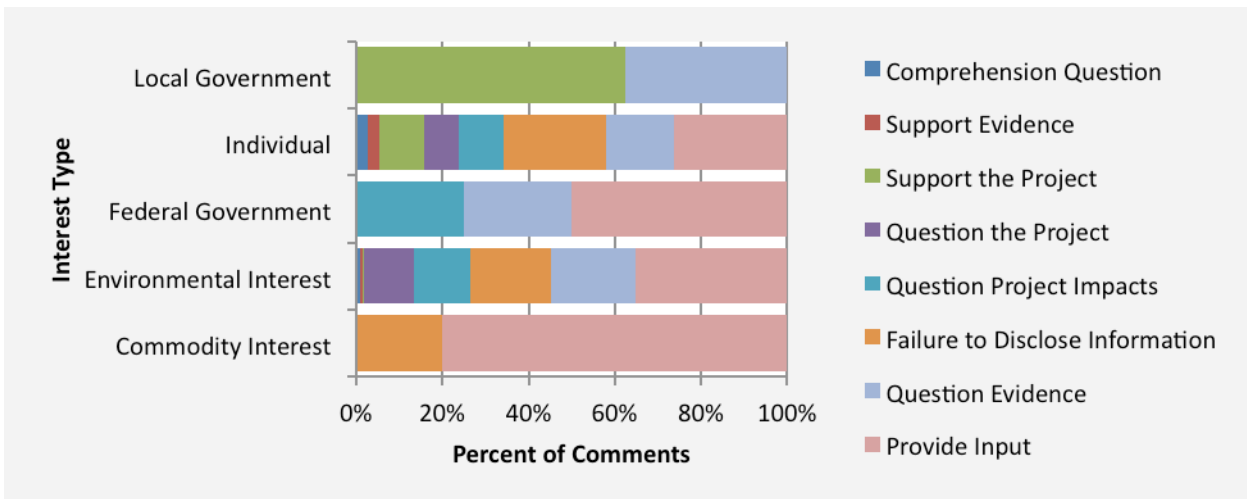


Figure 14: Types of Comments by Interest for the Upper Beaver Creek EIS

## Truth Interviews

**Research Question:** Does the EIS present convincing evidence to support its claims?

Interview participants were evenly split on whether evidence in the EISs was sufficient to support Forest Service claims. Five participants thought the evidence and information presented in the EIS was insufficient to for their needs. Four participants thought the evidence was sufficient indicating that the Forest Service presented good rationale for their conclusions. One participant indicated that the Forest Service is very “good about providing information up front” especially compared to other federal agencies. While participants discussed their views on the sufficiency of evidence in the two project EISs, they also discussed ideas on what evidence increases their likelihood of accepting Forest Service claims. These suggestions included:

- ⇒ Participants felt they were more likely to accept Forest Service claims when the agency explicitly and **clearly disclosed why the project was necessary**. This discussion in the EIS should be

supported with key information, data and a logical discussion of the purpose and need for the project.

- ⇒ Participants felt they were more likely to accept Forest Service claims when the agency **discussed the functional problems the project would fix**. The BLT and Upper Beaver Creek projects were vegetation management projects designed to restore aspects of forest function that had been changed due to past forest management practices. For both projects, this centered on lowering stand density to ensure reduced risk for large scale fire and insect disturbances which were unnatural in the project area. Participants generally felt that the Forest Service adequately discussed this function problem and how the project would fix it.
- ⇒ Participants felt they were more likely to accept Forest Service claims when the agency **clearly identified their objectives and desired outcomes** for the project. By doing so, commenters have an easier time evaluating the agencies argument and justification for implementing the project. Participants felt that by discussing objectives and desired outcomes would increase their willingness to accept the agencies conclusions because it made it easier to understand where the agency was coming from.
- ⇒ Participants felt they were more likely to accept Forest Service claims when the agency **provides images and maps to illustrate their discussions**. Even though the BLT and Upper Beaver Creek EISs included 39 and 28 figures respectively, interview participants indicated they would like to see more included.
- ⇒ Participants felt they were more likely to accept Forest Service claims when the agency **provides clear and simple tables**. The BLT and Upper Beaver Creek EISs included an abundance of tables, 124 and 95 respectively. Participants indicated while there might be numerous tables, they are often too long, complex, and difficult to comprehend. Thus, they are of little use to participants.

When discussing the truthfulness of the Forest Service communication, a few participants perceived the agency to be biased. In their opinion, this bias occurs when agencies attempt to limit the scope of a project towards meeting a specific end outcome. One participant discussed how the Forest Service skews projects to allow logging:

The agencies again tend to build their documents as an argument in favor of their proposal rather than as a neutral informative analysis of the proposal and alternatives. So they will say things that make not logging seem like a catastrophe, and logging seem like the only answer. When in fact there are environmental costs and benefits of logging and there are environmental costs and benefits of not logging. You need to honestly acknowledge both of those. But we tend to see...the benefits of logging emphasized and the costs of not logging emphasized. So that's a form of bias to me and I see that very commonly.

Compounding on the agencies perceived bias is their perceived use of questionable assumptions. Two participants indicated that they often take issue with some of the logic that the Forest Service uses to justify their conclusions. The agency, they say, makes assumptions that go against the best available science, and thus the analysis based off those assumptions are built on high levels of uncertainty. Using questionable assumptions, in the participants' minds, reduces their willingness to accept Forest Service conclusions and causes them to question the truthfulness and accuracy of the environmental impact analysis.

Only one participant clearly articulated that they felt the agency purposefully manipulated, omitted, and even lied in the EIS. The participant felt that:

On the Ochoco National Forest the NEPA process is a giant con job. The documentation has no basis in reality and the Forest Service has no intention of implementing the plan they talk about in the documentation. They are happy to out-and-out misrepresent the facts on the ground if they think that helps them. They'll lie about the status on the ground in those documents. They will make agreements in the appeals process, which they don't want to follow and they will do their best to not have to follow them. That's my overall impression and that's based on far more than just the Upper Beaver. Although, the Upper Beaver [Creek project] is a particularly egregious example of what they do. It might be the most obvious one but it's not the only one.

They also discussed how on multiple occasions they found evidence that the Forest Service was failing to comply with elements of their decision. One example the participant discussed was how on one project the Forest Service decided they would not allow logging when the ground was wet because of its impacts on soil. Yet, the participant observed on multiple occasions logging during the wet season along with evidence of the damage this caused.

### Truth Conclusions

**Truth Conclusion 1:** Forest Service claims in the BLT and Upper Beaver Creek EISs were often not supported by evidence.

**Truth Conclusion 2:** Some factors that increase public support for Forest Service conclusions were included in the BLT and Upper Beaver Creek EISs.

The document analysis and interviews indicate there is a lack of truthfulness by the Forest Service. The majority of the agency's claims lacked supporting evidence. This lack of support translates into many comments that question evidence in the EIS or indicate the agency failed to disclose important information. Interview participants indicated factors that increase the likelihood of their accepting Forest Service claims. Interview participants agreed that for the BLT and Upper Beaver Creek projects the Forest Service adequately disclosed why the project was necessary, what functional problems the project would address, and identified clear project outcomes. The other two factors participants

identified as important for them to support Forest Service claims were not adequately included in the two project EISs: enough graphics and clear tables. The Washington Department of Transportation (WSDOT) has developed a reader-friendly toolkit on how to improve the readability of their documents. Their recommendation is to have at least one image on each page (WSDOT, 2008). The BLT EIS contains 39 graphics, but is 407 pages long. The Upper Beaver Creek EIS contains 28 graphics, but is 235 pages long. Based on WSDOT's recommendation, both Forest Service EISs do not provide near enough graphics, a conclusion that is supported by interview participants. Regarding tables in the two project EISs, they are far too complex to effectively be used by readers. One interview participant's issue with the project was because of a figure in a table, which eventually they found out was misprinted. When directly asked to score the truthfulness of the EIS, generally participants agreed the EISs were truthful (Figure 15).

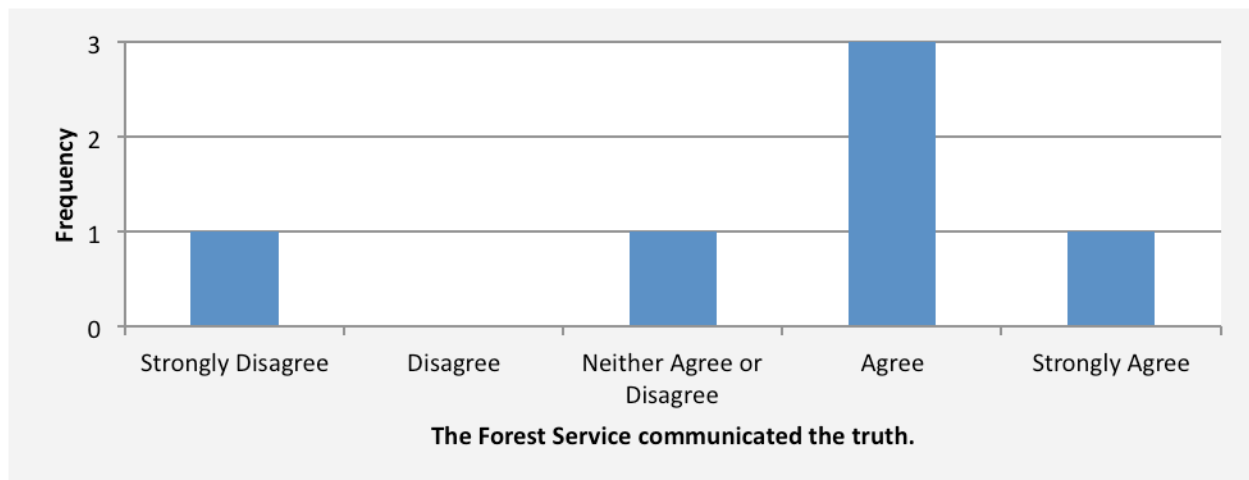


Figure 15: Interview Participant Truth Scores

**Truth Conclusion 3:** The majority of participants do not think the Forest Service intentionally manipulates or hides information from the public.

Except for one participant, participants indicated that missing evidence was not typically the result of the Forest Service directly manipulating or omitting information. Rather, since the agency is biased, it tends to dismiss or disregard certain science that might conflict with their worldview. Most participants indicated this was why they questioned evidence or failure to disclose information, as an attempt to force the agency to incorporate additional scientific references. Overall, the Forest Service does not provide sufficient evidence to support its claims, and comments from participants indicate that the truthfulness of the agency's communication is often distorted.

## 5.4 Sincerity Findings

This section discusses the document analysis and interview findings for the sincerity validity claim. These findings provide information to answer research questions four and five: *does the EIS fairly represent the concerns of project opponents* and *do EIS readers believe their concerns were valued?*

### Sincerity Document Analysis

**Research Question:** Does the EIS fairly represent the concerns of project opponents?

**Document Measures:** Agency Response to Comments Analysis & Public Involvement Analysis

For both projects, the Forest Service responded the majority of the time with detailed responses to comments. For the BLT project the Forest Service provided detailed responses to comments 83 percent of the time. For the Upper Beaver Creek project the Forest Service provided detailed responses to comments 70 percent of the time. For the BLT project all of the comments that supported the project were answered with detailed responses (Figure 16). Comments that questioned the impacts of the project were answered with detailed responses at the next highest rate. The important comment types of questioning evidence and failing to disclose information for the truth validity claim were answered with detailed responses at 87 percent each indicating the Forest Service took those comments seriously enough to warrant providing a detailed and accurate response. Comments that questioned the project itself were the least likely to receive a detailed response (71 percent). For the Upper Beaver Creek project all comments that supported the project were answered with detailed responses (Figure 17). The second highest comment to get detailed response was comments that provided input about the project. Comments that questioned evidence or about the agency failing to disclose information received detailed responses 70 and 71 percent of the time. The comments that received the least detailed responses were comments that included specific questions regarding the commenters ability to understand a topic discussion in the DEIS (50 percent).

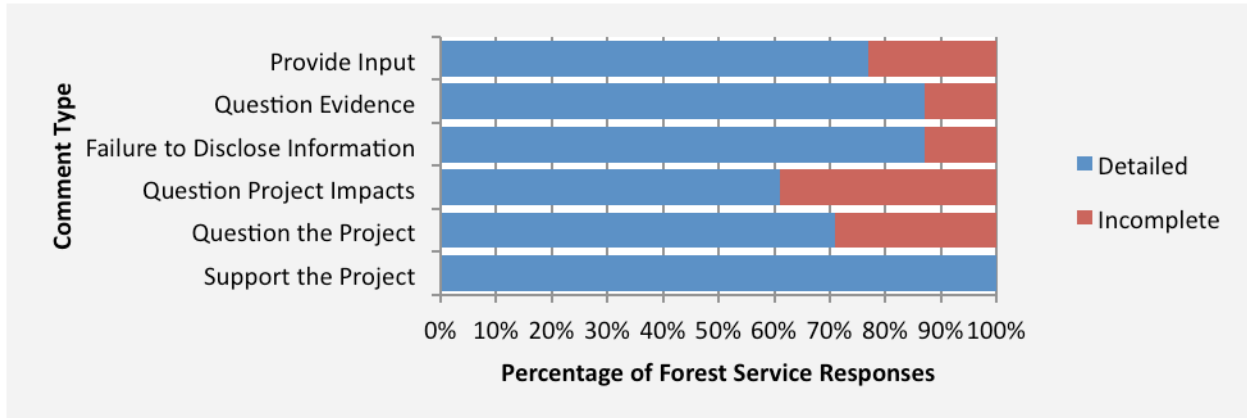


Figure 16: BLT Forest Service Response to Comments by Comment Type

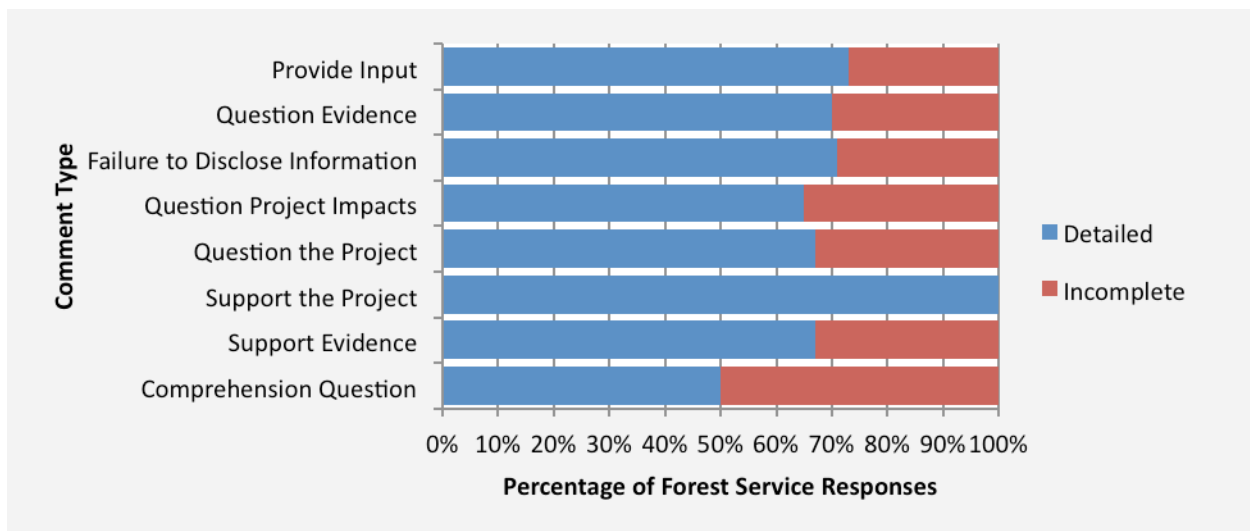


Figure 17: Upper Beaver Creek Forest Service Response to Comments by Comment Type

In addition to looking at how the Forest Service responded by comment type, their responses were also compared across the different organizations that commented (Figure 18 and Figure 19). All comments from federal agencies received detailed responses from the Forest Service for both the BLT and Upper Beaver Creek projects. For both projects, comments from environmental interests received more detailed responses than did comments from commodity interests. The Upper Beaver Creek comments from individuals received a slightly higher percentage of detailed responses from the Forest Service than did those from commodity interests.

### Forest Service Responses: Examples from the BLT and Upper Beaver Creek FEISs

Below are some detailed and incomplete Forest Service responses to comments on the BLT and Upper Beaver Creek EIS.

#### Detailed Responses:

- “In all management areas, the intent is to retain the largest of the large trees across the landscape. The diversity of species on the site is retained, though the proportion of one species over another may change considerably. Generally, the preference for conifer species to retain is (from highest to lowest): Douglas-fir, sugar pine, western white pine, Shasta red fir, mountain hemlock, ponderosa pine, white fir/grand fir, and lodgepole pine. These preferences may vary on specific sites depending on the abundance of a given species, presence of pathogens, vegetative potential, and/or site-specific objectives (DEIS, page 29).”
- “Generally, most improvement cuts are prescribed in lodgepole pine. A considerable portion of these stands have a legacy of salvage operations during the 1980s (DEIS, page 87). There is a compelling need for active management because overall stand health was not addressed at that time. Since then, dense regeneration has come in under some very unhealthy conditions. In this case, Improvement Cuts would remove diseased trees and thin the understory, which would be similar in appearance to an overstory removal with suitable live (green) tree replacements. If the stand is relatively healthy, the only overstory trees to be removed would be those that are competing and the stand would look more like a thinning.”

#### Incomplete Responses:

- “No response is necessary.”
- “This Response to Comment section will only address where the commenter was specific enough to determine which science and management directives were dismissed, as well as recommendations and goals from the Eastside Screens and Northwest Forest Plan. Historical Range of Variability was determined by Plant Association Group beginning on page 88 of the DEIS followed by snags and down wood on page 393 in Appendix B.”
- “The commenter was not specific enough to identify which pertinent scientific research to disclose and how it differs from the science cited.”
- “See response to Comment 1-36. The commenter fails to identify which risk modeling methodology works better than those used by the Forest Service for this project.”
- “See comment 2-51.”
- “See response to comments 7-1 and 7-2 above.”
- “Some specific areas of the BLT project are categorized as WUI; however, the CWPP and the identification of WUI are outside the scope of the BLT project environmental impact statement.”
- “The Willow Pine Project is outside the scope of the Upper Beaver Creek Vegetation Management Project. See responses to comments 1-26, 2-2, 2-5, 2-18, 2-19, and 2-31.”

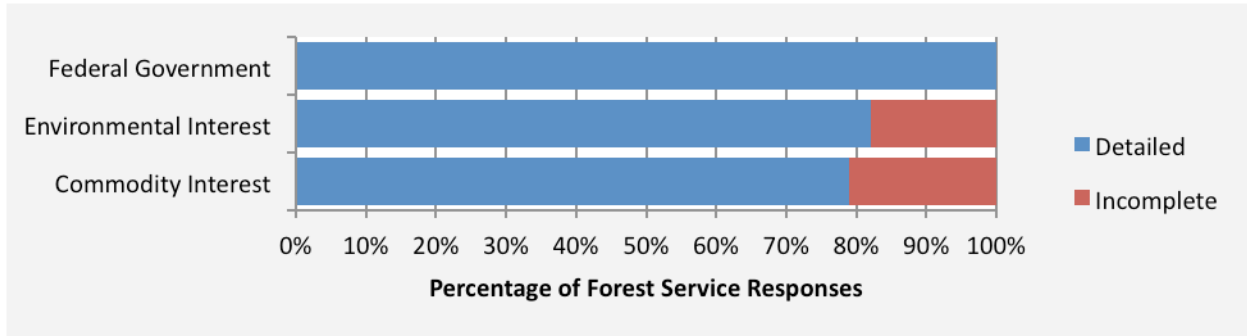


Figure 18: BLT Forest Service Response to Comments by Organization Type

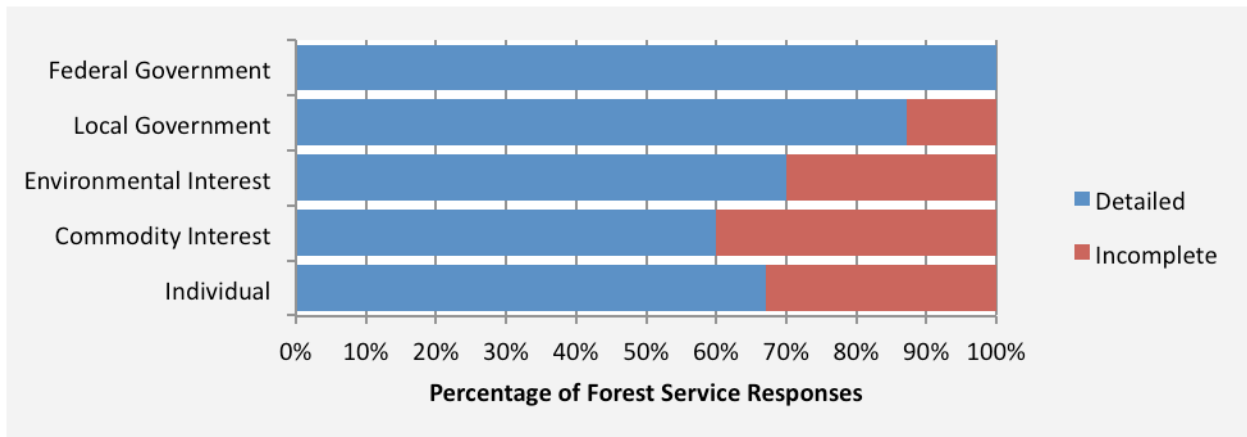


Figure 19: Upper Beaver Creek Forest Service Response to Comments by Organization Type

Regarding the amount of public involvement opportunities offered by the Forest Service, there is a clear difference between the BLT and Upper Beaver Creek projects. In total, the Forest service held 36 public involvement activities for the BLT project. These activities were spread across the following types: field trips, public meetings, closed stakeholder meetings, and camp meetings. The Forest Service began public participation early, starting meetings in 2003. Additionally, efforts were made throughout the NEPA process to keep public stakeholders informed of the projects progress. The Upper Beaver Creek project only conducted three public involvement activities and they were all field trips to the project site. Compared to Lunde, Brody, and Ryan's (Appendix E) findings of public involvement for 13 EIS Forest Service, the Upper Beaver Creek fell within the typical range but was below the average for the number of involvement activities (Figure 20 and Figure 21). However, the BLT project was well above the range of public involvement activities found in Lunde, Brody, and Ryan's study (Appendix E).

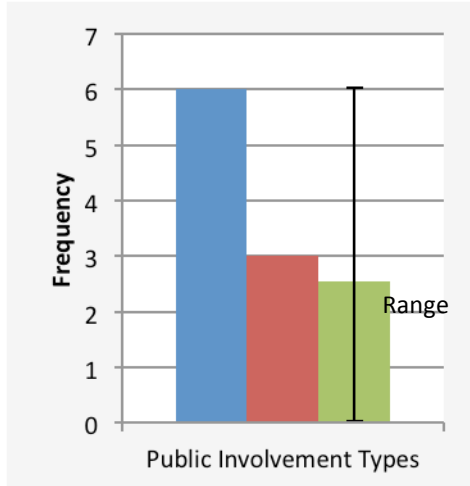


Figure 20: Comparison of Public Involvement Types

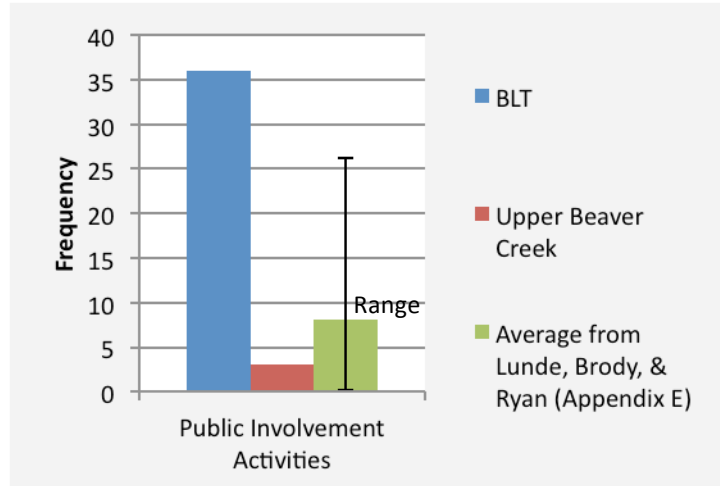


Figure 21: Comparison of Public Involvement Activities

## Sincerity Interviews

**Research Question:** Do EIS readers believe their concerns were valued?

When asked about the sincerity of the Forest Service, the majority of interview participants replied that the agency listened to their concerns and that they were sincere in involving the public. Participants described how they felt listened to in both their formal and informal interactions with Forest Service staff. One participant said:

They were quite open, both the district ranger and his staff, to listen and I think even afterwards if I had additional comments I think they would have been quite receptive to it.

Lastly, one participant added that they thought the Forest Service does a good job of tracking and reaching out to stakeholders for input on their projects.

In addition to discussing their perceptions of Forest Service sincerity for the BLT and Upper Beaver Creek projects, participants discussed that they often gauge the sincerity of the agency based on their responses to their comments. Interview participants discussed how reviewing the agency's responses to their comments was really the only metric they had to distinguish if the agency had valued their concerns and listened to their input. One participant indicated, "usually you can tell by how they respond to [comments]...whether or not they're giving you any credibility whatsoever or they're just blowing you off." When the agency provides thoughtful and detailed responses participants know that their comments were listened to and that the agency valued their concerns. On the other hand, participants identified three main ways to tell when the agency isn't valuing their concerns:

1. The agency responds to their comments by saying “*outside the scope of this project*” without explaining how they came to that conclusion. One participant believed that “there are occasionally things that are outside the scope of that decision but that appeared to me to be their fallback when they didn’t have a good answer. Because I couldn’t see any real logic to how that would be outside the scope of the decision in a lot of cases.”
2. The agency responds to their comments by saying “*see response to the comment from so-and-so above.*” Participants were dissatisfied with this type of response because they want to see the agency respond to their specific comment, which they took time and effort to write and send in. Participants felt that oftentimes when they’d look up the response to the other comment they were not particularly similar or addressing the same issue.
3. During comment analysis, the Forest Service often paraphrases or chooses only certain comments to be responded to. As one participant described, this process “can be very frustrating, because they will cherry pick what you say and sort of paraphrase it in a way that isn’t quite what you meant and then you know dismiss it or they’ll take a long paragraph and the best point was in sentence three but they just take sentence one and respond to that and it never addresses what was in sentence three.”

Interview participants also provided a clear model on their perspective on why the Forest Service provides detailed, thoughtful responses to comments or not (Figure 22). At its root, sincerity is based on how reliant on expertise the Forest Service decides to be for a specific NEPA process. This decision influences whether the agency chooses a preferred alternative before engaging the public or after hearing public concerns. This in turn influences how willing or receptive the agency is to public input and comments. Finally, this influences their responses to public comments. If the agency is sincere they will be open to public knowledge, involve the public prior to identifying a preferred alternative, actively seek public input, and provide thoughtful, sincere responses to public comments. If the agency is insincere, they will rely solely on their expertise, identify a preferred alternative prior to consulting the public, view public involvement as onerous, and provide inadequate or insufficient responses to public comments.

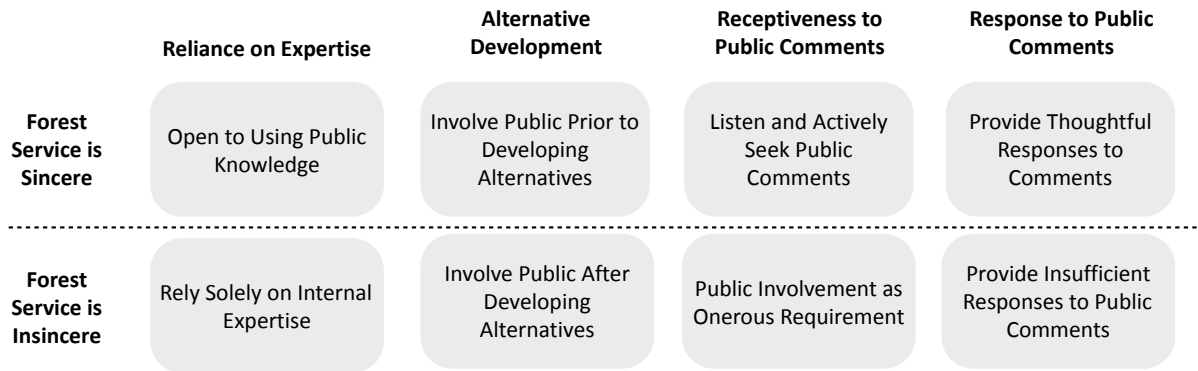


Figure 22: **Model of How Interview Participants Perceived & Evaluated Forest Service Sincerity**

Only one interview participant clearly identified what they perceived as the impact of insincerity by the Forest Service. They identified that:

- ⇒ The agency will attempt to not follow appeal agreements;
- ⇒ Remove respondent from email list if they are viewed as a problem;
- ⇒ Conduct poor analysis/evaluation for project impacts – instance of doing evaluation in the winter when there was too much snow to see on the ground conditions; and
- ⇒ Don't listen to participants and don't respond to their concerns (phone/email/etc.).

## Sincerity Conclusions

**Sincerity Conclusion 1:** The EISs fairly represent the concerns of project opponents.

For both the BLT and Upper Beaver Creek projects, the Forest Service responded to the majority of comments with detailed and well-reasoned responses. This indicates that the agency not only valued the public comments but also listened and incorporated these comments into their thoughts about the two projects. For both projects, all comments supporting the project received detailed responses from the agency. However, it is important to note that the requirement for offering a detailed response to comments that support the project was quite low, most often just needing the agency to acknowledge they received the comment. More interestingly, a large portion of comments that indicated challenges to the agency's truthfulness were responded to adequately. For the BLT project especially, the Forest Service provided detailed and sincere responses to comments questioning evidence (87 percent received detailed responses) or indicating a failure to disclose information (87 percent received detailed responses). These comments on the Upper Beaver Creek project were less likely to be provided with detailed responses than on the BLT, but the majority of responses were detailed (70 percent for comments questioning evidence and 71 percent for comments indicating a failure to disclose

information). Lastly, for both projects, the Forest Service responded to all comments from other federal agencies with detailed responses. In the interview with the federal commenter, they indicated:

I suppose because we have a federal relationship with them, maybe they give some deference. I think because there is a federal relationship there sensitive to our comments...because those can also be used in a court of law either for or against them.

**Sincerity Conclusion 2:** The BLT project offered adequate public participation opportunities. The Upper Beaver Creek project offered inadequate public participation opportunities.

The BLT project offered considerable public involvement opportunities. In fact, pulling in results from Lunde, Brody, and Ryan's study (Appendix E), the BLT project offered more involvement opportunities than eight other reviewed NEPA projects by the Forest Service. On the other hand, the Upper Beaver Creek project offered very few public involvement opportunities. The majority of the public involvement opportunities for the two projects were in the form of public meetings or field trips to the project sites. The public typically views these two involvement methods positively, indicating that they are an adequate way to engage the public in the NEPA process (Blahna & Yonts-Shepard, 1989; Force & Williams, 1989; Lauber, Knuth, Deshler, Curtis, Turner, & Christoffel, 1997). Participants particularly spoke positively about going on field trips because they offered opportunities to discuss the project one-on-one with Forest Service managers. Participants regarded such one-on-one situations as the best way articulate their concerns and get real time responses to their comments.

**Sincerity Conclusion 3:** A majority of participants believed the Forest Service valued their concerns.

**Sincerity Conclusion 4:** Response to comments are often the only way commenters knew their concerns were valued.

The majority of interview participants thought the Forest Service were sincere during the BLT and Upper Beaver Creek NEPA processes (Figure 23). This was based on their belief that the agency valued their concerns by listening and responding to their comments. Interview participants indicated responses to their comments were often the only way they knew whether the Forest Service valued their concerns. When asked how the participant knew their concerns were valued they responded:

Well a lot of it has to do with their response to comments. When they're doing an EIS, you write your comments on the draft or you maybe you first write your scoping comments and if you see the issues you raised in scoping reflected in the EIS you kind of know you're being heard and if you read the final EIS or the ROD will often have an appendix where they respond to comments. And sometimes that, its a good place to sort of further the conversation between the agency and the public.

This indicates that the Forest Service’s responses to public comments are important in how participants view the sincerity of the agency. Thus when the agency doesn’t provide detailed responses it may have large negative impacts in the future of the project.

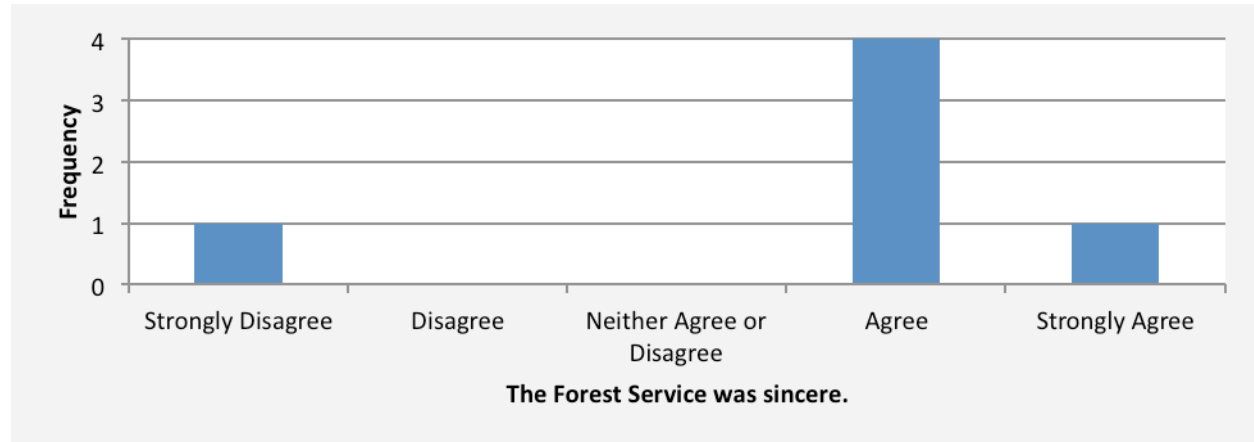


Figure 23: Interview Participant Sincerity Scores

## 5.5 Legitimacy Findings

This section discusses the document analysis and interview findings for the legitimacy validity claim. These findings provide information to answer research questions six and seven: *does the EIS record any significant changes in response to issues raised by the public* and *does the public view the NEPA project as legitimate?*

### Legitimacy Document Analysis

**Research Question:** Does the EIS record any significant changes in response to issues raised by the public?  
**Document Measure:** Changes Between the Draft and Final EIS Analysis

The BLT FEIS recorded four changes from the Draft EIS to the Final EIS (Figure 24). Only one of the changes, the Forest Service provided additional information regarding the northern goshawk as a result of a comment suggesting they should review Greenwald et al. 2005, was considered somewhat significant. The Forest Service also provided clarification of data previously presented which was considered a slightly significant change. The other two changes to the BLT FEIS were not significant and included minor grammatical corrections and editorial formatting. The Upper Beaver Creek FEIS recorded six changes from the Draft EIS to the Final EIS (Figure 24). Three of these changes were very significant. The Forest Service conducted new analysis of potential climate change impacts, areas that exhibited characteristics of inventoried roadless areas and wilderness areas. The agency also included new maps of temporary roads systems and evaluated areas that could contain attributes that would meet potential

Wilderness criteria. These changes were considered somewhat significant. And one change was not significant where the agency corrected typographical errors in a table. Neither project was changed extremely from its original proposal in the DEIS by the addition of a new alternative or the scope of the project based on comments and input from the commenters.

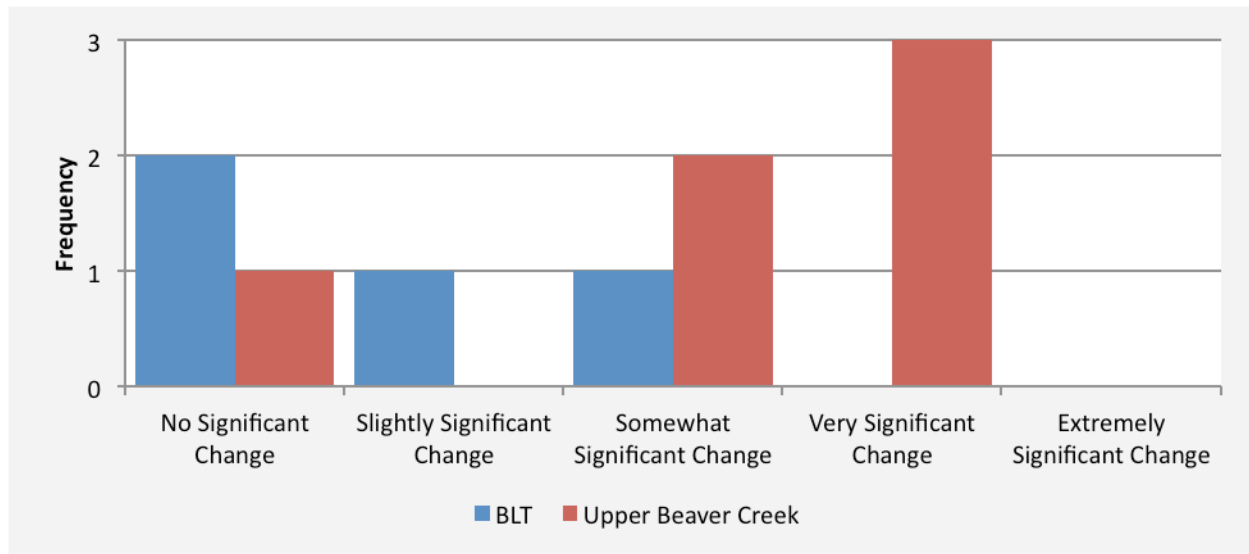


Figure 24: **Frequency of Significant Changes Between the Draft and Final EIS**

## Legitimacy Interviews

**Research Question:** Does the public view the NEPA project as legitimate?

All participants but one accepted the final decision by the Forest Service – this includes after appeal settlements or withdrawal. When discussing the projects all participants (but one) felt the projects were decent and while not maybe happy with all aspects of the project they felt the projects were acceptable. This is belied by neither of these projects being litigated. The one participant who didn't think the decision was legitimate was based on distrust for the agency, perceptions that they intentionally dismissed his comments and were going against their own regulations making the NEPA process unfair and subverted by the agency, feeling that they would say one thing but do the opposite without hesitation.

Factors impacting participant views of the legitimacy of Forest Service decisions and projects (in order of importance based on interview participants discussion):

1. The most important factor in ensuring the interview participants saw the project as legitimate was their **ability to participate in decision-making**. Participants discussed that if they could provide input

and feel the Forest service adequately listened to their concerns they were likely to be supportive, or at least non-confrontational about the project. Most often participants discerned whether their concerns were listened to and valued based on the agency's response to public comments. One participant described how a sincere response to their comment made them more supportive of the project:

“They came back...with a pretty reasoned discussion about why they were proposing what they were doing in the riparian zone. And that coupled with some additional clarification about what exactly they were proposing to do helped to alleviate my concerns. So I don't feel like the project changed but my comfort level with the project changed.”

Interestingly, this participants comment also encapsulated the view of the majority of interview participants that it wasn't as important for them to actually influence or change the Forest Service's decision as much as it was to be listened to. Another participant described it as “the decision may not go [my] way but the participation is key and feeling you had some role in the outcome.”

2. The second most important factor in ensuring participants saw the project as legitimate, was their **relationship and trust in the Forest Service**. The more a participant trusted or had a strong personal relationship with Forest Service managers, the more likely they were to see the project's final outcome as legitimate. All the interview participants except one seemed to have positive relationships with the Forest Service and held some level of trust for the agency. Even participants who appealed the agency decisions indicated that it wasn't from a lack of trust but more based on specific issues they wanted to press the agency on. The one interview participant who didn't trust the agency had multiple instances of bad relationships with Forest Service staff. This participant indicated that their mistrust for the agency and their actions was likely lead to them appealing and even litigating projects in the future.
3. Interview participants did place some importance on being **able to influence a project** in their decision if the project was legitimate. Most participants felt they influence projects in minor ways. One participant indicated that between 50 and 60 percent of the time their comments resulted in some kind of change in the project. However, these changes were often on the periphery and not large fundamental changes in the project. Participants felt that that they didn't expect to significantly change most projects and were satisfied with these minor influences. Additionally, a few interview participants indicated that participating in scoping or filing an appeal were more likely to affect significant changes to the project than commenting on the draft EIS.
4. Interview participants identified that the Forest Service's implementation of a **fair public participation processes** influenced their acceptance of the final project decision. All the interview

participants view the NEPA process as a prescriptive process as a fair way to conduct public participation. One participant described the NEPA process:

I never had a problem with the NEPA process from a public participation perspective. In fact I always kind of thought it was a fair way to go because if the Deschutes National Forest were going to propose something then if you lived in New Jersey you had just as much opportunity to be notified to comment as someone who lives right here does.

Participants did suggest that even through the NEPA process is fair, the Forest Service could manipulate public participation in unfair ways. These could include, restricting public involvement activities or not valuing the public's concerns and comments. Participants indicated if the process was conducted unfairly that they would not support the final project decision.

5. The specific **objective for the project** has a minor influence over whether interview participants accepted the final decision for the project. The majority of the participants didn't have a problem with why the Forest Service were proposing the project and this barely factored into their discussion or comments. No participant indicated that the forest Service shouldn't have been pursuing vegetation management and their goals were more aligned with adjusting and influencing specific aspects of the projects rather than shifting the project's focus or indicating the projects themselves were a problem.
6. One interview participant indicated learning about the project and the reasons why the Forest Service were proposing alternatives influenced their willingness to accept the final decision.

## Legitimacy Conclusions

**Legitimacy Conclusion 1:** The BLT and Upper Beaver Creek EISs do not record any significant changes.

Neither project underwent significant change based on comments received during the Draft EIS comment period. This is not surprising based on past research indicating that the public is more likely to affect or influence forest Service projects if they participate early on in the process, particularly during the scoping stage (Blahna & Yonts-Shepard, 1989; Canter & Clark, 1997; Germain, 2001). Additionally, the main bulk of Forest Service analysis is conducted prior to releasing the Draft EIS. The agency is unlikely given resource and time constraints to invest in making major changes to the project unless key considerations were left out from the analysis. Interview participant responses echoed the document findings stating that very infrequently does the agency make drastic changes to the project based on their comments. However, they did feel that their concerns and input often led to minor changes such as tightening analysis, clarifying discussion, and incorporating some additional science. This sentiment is reflected in the realization that participants for the two projects were more concerned about whether

the Forest Service listened to their comments. It was enough for participants to be heard and be acknowledged that their concerns were at least considered by the agency.

- “But the EIS, the comments on that I don’t think they really sway anybody.”
- “But what you get in the comments really doesn’t change anything.”

**Legitimacy Conclusion 2:** Participants see the scoping and appeal stages of the NEPA process as the best way to influence project decisions.

As supported by previous research, most of the interview participants believed that they could have a greater influence on the project if they were involved in scoping. However, participants also viewed the appeal period as a useful way to influence the agency’s decisions. This makes sense in that appealing a project is similar to threatening the agency that the participant may litigate the final decision. Since the agency is so litigation phobic, they are likely to do a lot to appease an appellate. A few interview participants discussed the appeals process as both advantages and detrimental to the NEPA process.

- “Because once the draft comes out we’re all in a reactionary mode and then we’re just kind of tweaking around the edges basically. And that’s kind of what I think we ended up doing on this one was we went through the document.”

**Legitimacy Conclusion 3:** Participants did not consider building understanding as a way to increase the legitimacy of Forest Service decisions.

Collective learning and education are critical to fostering communicative action, yet only one participant discussed how the NEPA process built legitimacy by building knowledge between the Forest Service and the public. Communicative action’s goal is to ensure legitimate decisions based on collective decision-making by building understanding. This idea of collective learning or building understanding was missing from most interview participants’ frames of project legitimacy. Most seemed to focus on their own concerns and their ability to influence a project and were not aware of working to build a collective vision of the future to ensure that the entire public could see benefit from projects and decisions.

**Legitimacy Conclusion 4:** The majority of participants viewed the BLT and Upper Beaver Creek projects as legitimate.

Finally, interview participants largely agreed that the BLT and Upper Beaver Creek projects were legitimate and that the NEPA process was fair (Figure 25).

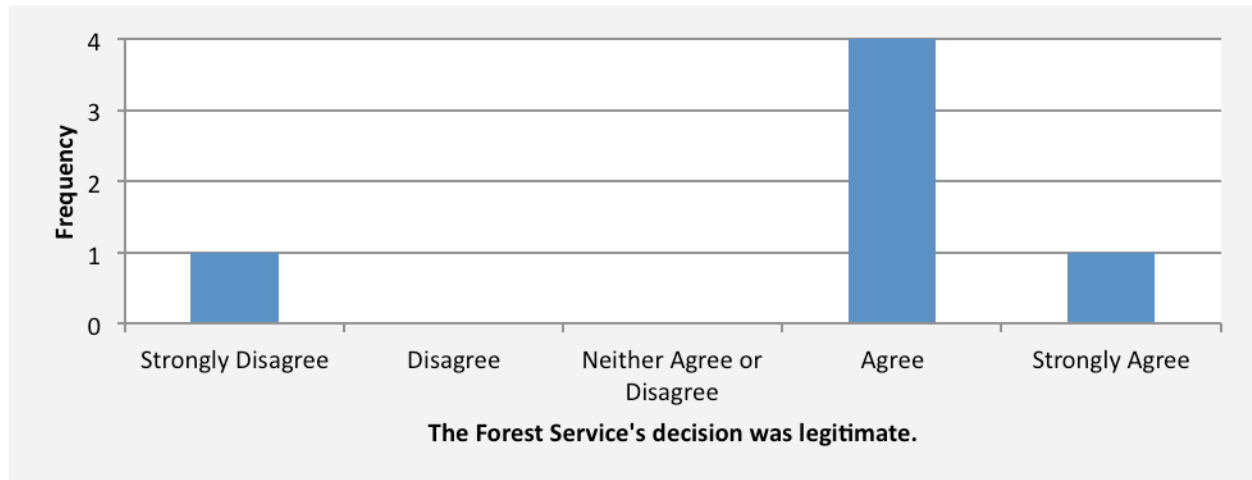


Figure 25: Interview Participant Legitimacy Scores

## CHAPTER SIX: Conclusions and Recommendations

This final chapter discusses how the findings from this research help answer the three overarching research questions. Each section interprets and draws conclusions based on evidence from the document and interview analysis. Finally, the chapter discusses further research that needs to occur to better understand public participation, Forest Service decision-making, and expert-citizen tensions.

### 6.1 Communicative Action Evaluation in Forest Service NEPA Projects

Answering **Research Question 1**: Does the current Forest Service NEPA process lead to communicative action

Neither the BLT nor Upper Beaver Creek projects achieved communicative action (Table 13). The evidence gathered on the comprehensibility claim was contradictory, but overall indicates that the BLT and Upper Beaver Creek EISs were not designed to communicate to a mixed audience. The document analysis supports previous research showing EISs are complex, and too difficult for the average citizen. However, the interviews provide a different view of comprehensibility. The majority of participants felt the EISs were easy to read and that they wouldn't want to see any changes to how they are written or presented. This is likely attributed to the "professional" nature of participants in the two projects. All but one of the participants commented on the two projects because it was part of their job. Thus, the majority of my interview participants are not average citizens. Each participant had reviewed and commented on at least six Forest Service EISs, and two participants had been commenting on Forest Service EISs for 20 years. These participants were highly knowledgeable about forest management and found the EISs for the BLT and Upper Beaver Creek were able to meet their needs. However, an EIS is supposed to be comprehensible to a mixed audience, including average citizens. Neither of the two EISs reviewed achieved such a goal. They are far too long, technical, and difficult to navigate to allow a wide range of readers to understand and effectively engage in the NEPA process.

The truth validity claim was partially met by the BLT and Upper Beaver Creek NEPA processes. Interestingly, my findings differ from previous research about the Forest Service and trust. While truth and trust might not be the same concept, they are related. The document analysis indicated that the agency did not present a lot of evidence in the BLT and Upper Beaver Creek EISs. Yet, participants did not highlight this as an issue. Most participants did not think that the agency purposefully manipulated facts and often accepted the evidence offered by the Forest Service. That is to not say that they fully agreed with all of the conclusions the agency drew from their evidence. Participants indicated that the

agency tends to be biased and can use questionable assumptions in their analysis, but this wasn't seen as a deliberate attempt to subvert their ability to participate in communication. Rather, it was seen as a difference of opinion that participants were attempting to change through communication. This back-and-forth discourse epitomizes the idea of communicative action and working collectively to identify truth. In a sense, these participants had some level of trust towards the Forest Service. This is contrary to previous research that has found that most citizens do not trust the Forest Service (Shindler, 2003; Shindler & Cramer, 1999; Shindler & Reed, 1996). It is possible that over time the agency has been able to build trust with their stakeholders. While, neither project's communication fully met the truth validity claim, the evidence also doesn't suggest communication was completely based on strategic rationality.

Table 13: **Overview of Communicative Action Evaluation**

Validity Claims and Questions	BLT	Upper Beaver Creek
<b>Comprehensibility</b>	<b>Low</b>	<b>Low</b>
Is the EIS designed to communicate effectively to a mixed audience?	No	No
<b>Truth</b>	<b>Medium</b>	<b>Medium</b>
Does the EIS present convincing evidence to support its claims?	No	No
Do comments by reviewers and opponents present any credible evidence that the agency has manipulated or hidden relevant facts?	Maybe	Maybe
<b>Sincerity</b>	<b>High</b>	<b>High</b>
Does the EIS fairly represent the concerns of project opponents?	Maybe	Maybe
Do EIS Readers believe their concerns were valued?	Yes	Yes
<b>Legitimacy</b>	<b>Medium</b>	<b>Medium</b>
Does the EIS record any significant changes in response to issues raised by the public?	No	Maybe
Does the public view the NEPA project as legitimate?	Yes	Maybe

Sincerity was the only one of the validity claims that was satisfied by the communication between the Forest Service and participants in both of the projects. The documents analysis revealed that the Forest Service provides detailed responses to comments the majority of the time. All but one of the interview participants agreed that the agency listened and valued their concerns and comments. Since there has been little previous research on sincerity and the Forest Service, it is unclear how my findings relate to Forest Service decision-making in general.

The legitimacy validity claim was partially met in the BLT and Upper Beaver Creek NEPA processes. Document analysis evidence suggests that the Forest Service was not facilitating a legitimate decision-making discourse according to Habermas. Even though participants could provide input to the agency, that input did not lead to any significant changes to the project or final decision. Some minor changes were made, but those were mostly editorial fixes and were not related to comments made by

participants. However, when interviewed, participants agreed the two projects were legitimate and that they accepted the final decision. Therefore, the legitimacy validity claim clearly does not fully meet Habermas' requirements, but nor does it fully represent strategic action.

The complexity of the truth and legitimacy validity claims highlights an important consideration when discussing the concepts of communicative and strategic action. Habermas discusses communicative action as a contrast to strategic action. His discussion leaves readers in a one-or-the-other framework, where communication either evolves as strategic or communicative action. However, both of these social actions represent ideals of communication situations. Instead of an either-or framework, I would posit that it is more useful to think of strategic and communicative action as opposite poles on a continuum of communication situations (Figure 26). On one end, strategic action occurs when a clear decision maker is oriented towards success so they can persuade other participants to adopt their interpretation of facts and their final decision. On the other, communicative action occurs when the decision maker and all participants are oriented to reaching an understanding collectively about the interpretation of facts and the final decision. By using this continuum, it is clear that the communication situations for the BLT and Upper Beaver Creek are neither completely strategic nor communicative action. Rather, these situations represent some combination of both and fall somewhere between the two ends of the continuum.

Additionally, it is important to note that in many situations achieving full communicative

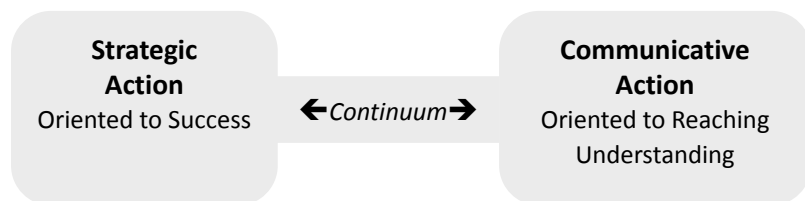


Figure 26: **Strategic to Communicative Action Continuum**

action may not be appropriate. Dayton (2002) argues that if the goal is to achieve ideal communicative action, then decision-making will operate in a "universalist" framework where:

Everyone capable of speaking and acting can take part in the communicative exchange with reciprocal equality (with everyone allowed to raise questions, make assertions, and express feelings) and that no one will be constrained in any way, by intrinsic or extrinsic force, from exercising complete freedom of authentic expression (Cooke, 1994; Blyler, 1994).

Such a framework accompanies what Arnstein (1969) would consider citizen control, where citizens have full managerial and decision-making power. Such a decision-making process is highly impractical, given the plurality of opinions and interests, that full collective understanding can be achieved. If such an accomplishment were to be made it would be at the expense of a considerable amount of time and commitment, resources that are often in short supply in this political decision-making climate. Rather, as

found by Bailey and Grossardt (2006), managers and participants desire NEPA decision-making to be at the partnership level, where citizens can “negotiate and engage in trade-offs with traditional powerholders” (Arnstein, 1969). It is the pursuit and incorporation of the goals of communicative action that can allow the Forest Service and citizens to enter into partnership. It should be this pursuit that the agency takes on to improve their decision-making process, not the wholesale attempt to achieve complete communicative action, because such a goal is unachievable, and ultimately counterproductive.

Another important conclusion regarding Forest Service communicative action is that there currently is a major barrier restraining the agency’s ability to incorporate communicative action into their decision-making process. Habermas articulates that communicative action occurs when multiple interlocutors communicate amongst each other in the pursuit of identifying a collective goal. This shared communication works by bridging differences among stakeholders and allowing them to build understanding of a decision together in order to establish a shared vision. While it is necessary that each interlocutor follow the four validity claims, it is also fundamental that communication occurs amongst all participants for the development of

communicative action. While this research indicates that it is possible for the Forest Service to meet the four validity claims through the NEPA process, the achievement of a shared communication space was lacking from the two cases evaluated in this research.

The communication for the BLT and Upper Beaver Creek Projects operated in a segmented manner. Each participant communicated with the Forest Service individually. The agency had open dialogue with each participant who commented on the two projects, but commenters had no interaction with one another. Using Venn diagrams is useful to visualize the difference between collective and segmented communication (Figure 27). The first Venn diagram represents the ideal communication situation in which communicative action is produced. In

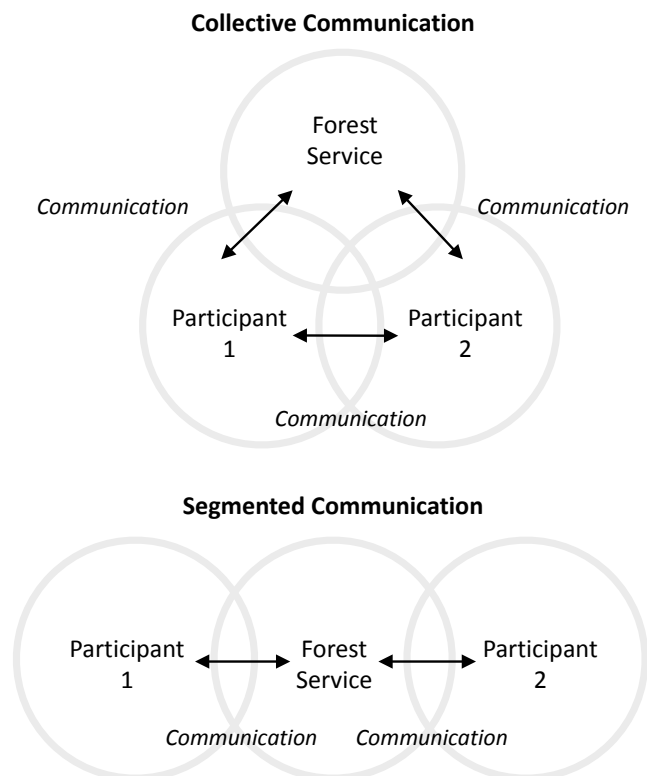


Figure 27: **Collective versus Segmented Communication**

this situation the Forest Service and two participants all overlap creating a centralized source of shared communication where each interlocutor articulates their concerns, ideas, and interests and collectively the interlocutors analyze these messages and together interpret their meaning. Through such a process, these interlocutors can establish a shared understanding and ultimately a collective goal. The second Venn diagram better represents communication as it occurred for the BLT and Upper Beaver Creek Projects. In these cases, the Forest Service was in communication with both participants, but the two participants never communicated with each other. Therefore, each participant expresses his or her concerns, ideas, and interests to the Forest Service. Then as the collector of these comments, the Forest Service alone devises meaning from the communication messages and develops a goal. Such a process inhibits communicative action in two ways: (1) it requires a single interlocutor to interpret communication messages and (2) it removes the cross-communication of all interlocutors, effectively thwarting their ability to learn and build collective understanding.

By inhibiting cross-stakeholder communication, the NEPA process has institutionally established a major barrier to achieving communicative action. It is not clear exactly why the NEPA process has created what I term a segmented communication approach. Research provides some explanation for this development. First, many Forest Service managers design involvement processes to avoid “grandstanding” by the most vocal opposition (Stern & Mortimer, 2009). These managers worry that if the public were able to discuss projects amongst each other it would increase conflicts over decisions. Thus they work to contain “or at least minimize opportunities for, public opposition to their proposals” by avoiding public forums of discussion (Stern & Mortimer, 2009).

Second, by adopting a segmented communication approach, the Forest Service is able to maintain power and authority in the decision-making process. As the communication hub, the agency collects and analyzes all communication messages internally. This allows them to use their own rationale to decide what input is valid and relevant. It ensures that their priorities are used to filter and perceive information, potentially mitigating the influence of participant’s contributions. Finally, there doesn’t appear to be much incentive for participants to advocate for the Forest Service to use a more collective communication approach. None of the interview participants in this research indicated they had any desire to work collectively with other stakeholders during the NEPA process. Additionally, since most participants viewed the decisions as legitimate and acceptable, they didn’t have much desire to change how the process operated.

By operating in this approach, the Forest Service and the NEPA process almost guarantee that communicative action is unachievable. Even if the agency produces comprehensible documents, always provide evidence, and operate sincerely, they will not ever be fully to operate legitimately because they will never fully allow the public to engage and influence decision-making. Without cross-stakeholder or collective communication and discussion, it is impossible for various participants to build understanding. Rather this communication promotes siloed discussion where an individual relays their concerns to the agency only. Thus the agency is left with sorting through competing concerns, interests, and comments and ultimately using their authority to articulate which interest is most important. This often results in participants feeling that the agency used their will to make a decision, which is true, but how else can the agency review such disparate thoughts and interests.

This issue and concern might be alleviated through the establishment of collaborative decision-making projects. Over time, the Forest Service has increasingly turned to collaboration as a way to reduce conflict over project level decisions. After completing the BLT project, a few of the EIS projects on the Deschutes National Forest have involved collaborative groups. These groups, unlike the more typical NEPA public participation process, do allow cross-stakeholder discussion and at least maintain a space where collective understanding and visioning can occur. However, collaboration may further restrict citizen participation in decision-making since collaborative efforts often require large effort and time commitments by stakeholders to participate, which citizens cannot commit to. Thus collaboration may not be the full answer. It seems impractical for the Forest Service to collaborate on every project. Instead, it might be more practical to involve collaborative decision-making when the agency is developing Forest Plans. These plans indicate the vision for the forest for a specified number of years, and act as a strategic plan for forest management. It is at this stage that exerting time and effort to develop a collective vision of what forest management should look like would be beneficial. Then when the agency begins specific projects, they would not need to engage collaboratively because that shared vision in the Forest Plan is what guides the project decision. Stakeholders should still be involved in the project level decision-making but more as advisers to ensure the vision is carried out. This is different from their role now where they are attempting to change policy and the goals of forest management at each project decision. This way, public participation becomes more about achieving the collective goal rather than achieving the believed interests of diverse stakeholders.

## 6.2 Citizen Perspectives on the NEPA Process

Answering **Research Question 2**: What does the public think about Forest Service NEPA processes and communicative action?

Interview participants were asked to discuss their general impressions of the NEPA process as implemented by the Forest Service. Participants discussed both positive and negative aspects of the NEPA process covering a broad range of topics. Participants were pleased that the NEPA process does allow the **public to be included in the decision-making process**, something that without NEPA they were not sure would happen. One participant described NEPA as a “fantastic tool for doing citizen level democracy [for] decisions that affect the environment.” Another stated:

NEPA provides a platform for folks that have a different view about how the land should be managed to be heard and to make a case to the Forest Service...If you don't have that kind of a process, if you don't have a NEPA and you can't have those conversations and you can't try to accommodate all of these other views in your process.

Additionally, participants felt NEPA's prescriptive approach to public participation **ensured a fair process** where anyone could be included. Participants saw having a prescriptive process as important for both the interest public and for the Forest Service. Having a prescriptive process ensured the agency would engage the public and it also ensured that any citizen, no matter where in America had the same opportunity to participate as anyone else. Lastly, participants articulated that the NEPA process establishes a **rational decision-making process**, which requires the agency to “collect the information, compare alternatives, consider cumulative effects, [and] consider connected actions.”

While interview participants highlighted the benefits of the NEPA process, they brought up some clear practical issues with how the process is implemented. A majority of participants discussed their frustration with the **amount of time the NEPA process requires**. One participant indicated that in their experience it takes the Forest Service three to four years to produce an EIS and make their final decision. They found this problematic for multiple reasons: 1) many forest management issues are time sensitive and the length of the NEPA process makes it difficult for the Forest Service to adapt and respond to problems; 2) the long time between different stages of the NEPA process makes it difficult for the public to stay abreast with what is going on; and 3) in an attempt to shorten the process, the Forest Service

### Participant Identified Positive Aspects of the NEPA process

Public involved in decision-making.

Establishes a fair, prescriptive process for making decisions.

Based on a rational decision-making framework.

sometimes rushes the evaluation and analysis stage of the process. Furthermore, the length of the process contributes to **high costs** of upwards of “almost half a million dollars to go through the entire process with stakeholders and the analysis and everything involved in getting to a decision.”

Participants also believe the Forest Service has attempted to streamline the NEPA process and reduce litigation by developing **projects that are increasingly similar**. This results in a difficulty for the public to

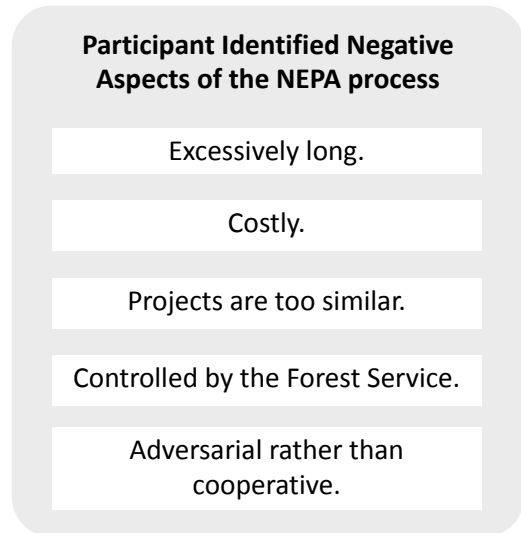
differentiate between projects and also indicates a lack of creativity in how to deal with localized issues. One participant described the concern that:

[Forest Service] treatments have become pretty routine. There are other treatments that could be viable, but because of the threat of appeals and because of what the courts have accepted, the documents tend to be very similar one to another. Because like legal documents the courts have accepted this to mean this in the past so we better not change it.

This attitude and approach to designing projects has removed the ability for the agency to be creative and deal with the varying issues that result from more localized problems. Rather they rely on somewhat established methods that have stood up under court scrutiny in the past to attempt to “bullet proof” their projects.

Another issue interview participants discussed was the **level of power and control the Forest Service had over the NEPA process**. They felt that the agency often reduced the usefulness of the process because they began the process already knowing what they wanted to do. This prior “decision” ensured that the agency had little reason to open itself up to input from public participation. One participant felt that most of the NEPA projects that the Forest Service does occur in this manner. Instead of being open to what alternatives and ideas are formed through early public participation efforts, the agency “tend[s] to know what they want to do and then write a document to justify that.”

The last major issue interview participants identified was how the NEPA process has increasingly been used as a way to **play different interests against each other**. Rather than facilitating a process that brings disparate interests together in order to identify the best management decision, the agency creates a “game” where players strategically jockey for favor and position for their specific interest. One



participant described their interaction with the forest Service highlighting the gamesmanship inherent in these NEPA processes:

I was out in the field with the Forest Service...and they were pretty straightforward about really proposing the maximum [harvest] that they could. They knew [by] getting pushed on by the environmental community in particular they were going to have to take things off the table. And so they felt like if we can put the maximum up front we'll have something to pull back from. It might not have been the alternative that they would've proposed as their preferred alternative in the absence of a NEPA process.

The interview participant continued describing how the Forest Service often feels that they will have to concede the amount of area proposed to be managed under their projects. Additionally, other interview participants felt that the ability of outside interests to appeal decisions contributed to the adversarial nature of the process. One discussed that almost anyone with some money can find a way to stop or halt a project regardless of public support. And as previously discussed by appealing and slowing the process appellants can often make projects ineffective once the agency would be able to implement them.

Interview participants identified one of the main causes for this increasingly adversarial relationship between the agency and the public. They indicate that there is a difference in NEPA's intended objectives and the reality of how NEPA is implemented. Interview participants believe the intent of NEPA was to: 1) disclose potential environmental impacts; 2) get public input; 3) force agencies to carefully consider the environmental impacts of a project and identify mitigation strategies; 4) and create an informed decision-making process. However in reality, NEPA is being used as a tool to require an agency to minimize environmental impact. As interest groups use litigation in an attempt to force the Forest Service to alter projects and decisions, the agency has become litigation phobic and attempt to proactively reduce litigation by providing more analysis than necessary in their EISs. They build legal analysis and offer excruciating details just to cover their tracks in court rather than focusing on how to work with the public to garner the best decisions. What has resulted is a NEPA process based on legal demands rather than a community-friendly environmental process.

Participants also discussed what they thought their role was in the NEPA process. Participants offered very different perspectives from more passive roles to active roles. Nearly all the participants felt they participated to improve the Forest Service project. Participants with timber resource interests indicated they often participated to indicate their support of the project and in some cases feel it necessary to voice support to balance the comments by environmental interests. Environmental

interests on the other hand discussed that it was their role to push the agency to incorporate new science into their analysis – oftentimes science that directly supports the group’s aims. One participant described their thoughts on this as:

One of the big roles for us is trying to bring new science into the equation. The agencies will do that over time, but it takes longer, and I think we sort of accelerate the process of bringing new science in. If they didn’t have to, you know respond to our comments and respond to our appeals, then they would sort of get into a business as usual mode and sort of truck along with their NEPA analysis it justifies what they were going to do anyway. But if we can insert new concepts and new science in there about the value of dead wood, about the need for variability, about the questionable value of logging habitat to save it from fire when you are dealing with species that like dense forests. Those are just examples of areas where once the agencies have to confront that science then they can design mitigation or adjust their project to make it better, accounting the environmental concerns.

Lastly, a few participants indicated they saw their role as voicing opinion for specific alternatives to help the agency identify the alternative preferred by the public.

### 6.3 Fostering Communicative Action in Forest Service NEPA Processes

Answering **Research Question 3**: How can the Forest Service foster communicative action in its NEPA processes?

Based on the BLT and Upper Beaver Creek NEPA projects, it appears that the Forest Service has begun to improve their communication away from strategic action and move towards communicative action. Both of these two projects were perceived as legitimate by almost all of the interview participants. Given that people said the process was legitimate, this section discusses recommendations to enhance current efforts by the Forest Service and make the NEPA process even more conducive to communicative action. These recommendations are based on key conclusions from this research and provide ways to better foster relationships between the agency and the public. Many of these recommendations are not groundbreaking, and can be found throughout the NEPA literature. However, discussing them in terms of communicative action frames their importance in a new light and provides a new understanding for why these recommendations can be successful and important. These conclusions and recommendations touch the NEPA process at different stages. These recommendations start out broad, with ideas for things the Forest Service could work on across multiple NEPA projects, and then narrow discussing recommendations to improve the operation of a specific NEPA projects and process. Overall, these recommendations include:

- ⇒ Actively seek to build and maintain personal relationships across NEPA projects;
- ⇒ Identify opportunities to engage individual citizens;
- ⇒ Increase the use of interactive public involvement activities;

- ⇒ Improve EIS comprehensibility and readability;
- ⇒ Incorporate clear evidence into the EIS; and
- ⇒ Improve the quality of the agency's response to comments.

## Build and Maintain Personal Relationships

It was clear from the interviews how important it was for participants to build personal relationships with Forest Service employees. By building relationships, they were more likely to trust the agency. Additionally, communication often became easier and more substantive. However, two interview participants discussed how turnover within the Forest Service is a major barrier to relationship building. One participant said that in four years there had been four different forest rangers in charge of one ranger district. They described how this fast turnover affects their ability to build relationships:

The vast majority of employees aren't from around here. I think they are much more interested in getting along and getting promoted than they are in fixing what's wrong on the forest. Not saying they wouldn't fix it if they could. [Y]ou can talk to a Forest Service employee in a specialty...and you can say something about Tamarack Butte and they won't know where that is. One of the major landmarks in the District...You might find someone you can work with, but before they get anything done they leave. Then the next person comes.

When talking with the Forest Service NEPA manager, they also articulated the importance and difficulty of building relationships. They stressed that building relationships is a lengthy process but that they help establish trust. These relationships improve communication so that it is more meaningful for both the agency and participants. When asked if these relationships benefited Forest Service projects, they responded:

Over a career in NEPA for 30 years I am now seeing some of those relationships help with that. But it took that long and it's a personal relationship it seems like more so than anything. That's just human nature, but...when we're gone...we lose a lot. It's just a relationship that has to be rebuilt.

**Recommendation 1:** Actively seek to build and maintain relationships.

Building relationships is critical in order to foster communicative action. The trust and ease of communication that develops from a strong relationship will help the agency work with stakeholders in a way that will benefit both parties. These relationships can be cultivated best through interactive communication activities, where both parties maintain a dialogue. Additionally, while this is a professional relationship, it often helps to have personal interaction because it is the basis for a stronger relationship. These relationships can be built and maintained across different NEPA projects and can be seen as a long-term focus to improve communication and public relations.

As some of the interviews indicated, building relationships is not easy, and require a lot of upfront investment to establish. Yet, participants felt that when they were able to call or meet Forest Service employees in person to discuss their concerns and opinions, it made it possible to build relationships. Finding ways to institutionalize the importance of building and maintaining relationships should be the priority of Forest Service managers. Some possibilities would be to include time in the NEPA process for Forest Service employees to call and talk with key stakeholders for specific projects. Additionally, having management prioritize opportunities for NEPA coordinators to conduct activities that develop interactive communication public involvement will help ensure there is staff time dedicated to build and maintain relationships.

### **Creating Opportunities for Individual Citizen Participation**

One of the driving reasons I pursued this research was to better understand how the public could influence agency decision-making and ensure their concerns were integrated into final decisions. However, when only one of my interview participants represented a concerned individual, it begs the question whether the public is being engaged through the NEPA process. Besides this one individual, all other interview participants reviewed and commented on Forest Service EISs as part of their job or profession. These “professional” commenters pursued a clearly defined interest set by an organization. While some previous research found that the majority of Forest Service participants were individuals (Scardina, Mortimer, & Dudley, 2007), other researchers have worried that public participation has become an activity for the elite and not the general public (Burch, 1976). This raises concerns about who is actually participating and their ability to coerce decisions (Mortimer, 2002).

Other research indicates the major reason the general public doesn’t participate in decision-making activities is their lack of time, knowledge, or interest (Moote & McClaran, 1997; Pierce, Steger, Steel, & Lorvich, 1992). Instead they often participate in a representative democracy model where individuals support interest groups, such that the “distribution of groups in policy debates tends to fairly represent the actually underlying distribution of interest in a given time in society” (Overdeest, 2010; Pierce, Steger, Steel, & Lorvich, 1992). Across the two cases I reviewed, it is clear that the representative democracy model was dominant. However, it is unclear whether these interest groups actually represent the interests of the public. Overderst (2010) has found that oftentimes, the distribution of interest groups is not correlated to actual public attitudes and thus certain interests have undue influence over policy debates. While other research indicates that many individuals do participate in Forest Service NEPA processes, it is unclear how influential they are and whether they can compete with

organized interest groups who have more resources and knowledge. This indicates that organized interests may be able to “capture” the agency and distort the public interest.

**Recommendation 2:** Identify opportunities to engage individual citizens in the NEPA process.

The Forest Service has the ability to engage various stakeholders in the NEPA process. It is difficult to engage individuals because of their time, knowledge, and interest limitations. However, the Forest Service’s role should be to encourage and educate the public about forest management. Identifying opportunities to better engage individuals may ensure broader perspectives on forest management are introduced into the discourse about forest management. These perspectives may provide clearer ideas about the public interest than specialized interest groups. Providing opportunities for individuals to engage with the Forest Service should not be limited specifically to when the agency is conducting a NEPA project. The agency could begin by identifying ways to engage communities by working with local organizations, governments, and community interest groups to identify already established events to participate in. Such events might include, town hall meetings, farmers markets, speaker series at universities and community centers.

While working to provide greater opportunities requires an investment of time and personnel, it seems like the potential gain in the increased public understanding of forest management could outweighs the costs. Additionally, working to offer more interactive public participation and improving EIS readability may also provide avenues to engage more individual citizens.

### **Interactive Communication and Public Involvement**

The majority of public involvement in the BLT and Upper Beaver Creek projects occurred as non-interactive communication. Such communication makes it difficult to not only build trust and a relationship between the agency and the public, but often leads to miscommunication. Interview participants clearly expressed that when they were able to communicate interactively with the Forest Service, their perspectives of the NEPA project were more beneficial and they were more likely to view the final project decision as legitimate. The interactive involvement activities most often cited were field trips, phone calls, and informal discussions between Forest Service managers and individuals.

Such interactive public involvement is beneficial for multiple reasons. First, unlike written communication, interactive communication is typically clearer and less likely to be fraught with interpretation errors. Additionally, interactive communication by nature is a two-way communication dialogue where the agency and individual interact in much more substantial nature than one-way

communication or written dialogue. This substantial interaction leads to stronger relationships, which often establish mutual trust and avenues for learning and education. By allowing managers and individuals to communicate interactively, they can bridge the communication gap between technical knowledge and individual desires, allowing mutual education and the development of alternatives and decisions that can be implemented with a broad support base (Friedmann, 1973; Ashor, 1986). Furthermore, citizens who participate in public meetings often have more favorable perceptions of the process than those who only wrote letters (Lauber, Knuth, Deshler, Curtis, Turner, & Christoffel, 1997). In their research, Blahna and Shepard (1989) found that managers often avoid interactive public involvement for fear that it will drive or fuel controversy. However, rather than minimizing conflict, this non-interactive approach often has the opposite effect. Rather “the lack of interactive public involvement designed to review planning alternatives actually forced interested parties to take extreme stands even if they only wanted a small or moderate change in the plan” (Blahna & Yonts-Shepard, 1989).

Research often points to the importance of providing public participation early on in the decision-making process. Early participation is thought to be more interactive and give participants more influence in designing the project alternatives. While my interview participants did view the scoping stage of the NEPA process as important for expressing their viewpoints, they emphasized the appeal period as a more influential public participation activity. From there perspective, the appeal period, which occurs after the Forest Service officially makes a decision, affords a greater ability to influence the agency’s decision than either scoping or draft comments on the EIS. This largely is due to the appeal period process, where appellants are granted meetings with agency decision makers and often by leveraging their ability to sue the agency, negotiate the agency to change the project based on their concerns. These meetings represent an interactive communication activity, where it is much easier for participants to voice their concerns and work directly with Forest Service personnel.

While the appeal period allows participants to influence the project, it can be a manipulative and unfair process. Only appellants are given a say during these appeal negotiations and thus, the appellants views dominate the discussion resulting in negotiated agreements that favor their interest over other interests. In this manner environmental groups often are able to restrict the amount of logged, or treated, acreage with little to no opposition. As such, timber groups have begun appealing projects, not because they do not view the project as legitimate, but because they want to ensure they are a part of the appeal negotiation process. These findings indicate that participants want to engage the agency

more interactively. While the appeal period is interactive, it comes too late in the decision-making process to be efficient. The Forest Service should look to increase their use of interactive public involvement activities earlier in the process to reduce the need for participants to use the appeal process to influence decisions.

**Recommendation 3:** Increase the use of interactive public involvement activities.

It is important for the Forest Service to offer more interactive public involvement activities. Large public meetings and open houses typically allow only one-way communication and offer little to no ability for collective discussion and engagement. Gericke and Sullivan (1994) found that small group activities were perceived as one of the most important public involvement techniques while large meetings were the least important. Small group activities provide an arena for substantial two-way interaction between agency professionals and the public. Additionally opportunities, that allow for “face-to-face” communication situations, even if over the phone, were highly regarded by my interview participants. Being able to talk to a person rather than just writing letters into a black box, allowed participants to get instant feedback and ensure the Forest Service understood their concerns.

Possible Interactive Public Involvement Activities:

- ⇒ Field trips and site visits;
- ⇒ Small group meetings; and
- ⇒ Calling stakeholders and commenters to inquire about their comments and concerns.

It is important to note that in some situations, interactive public involvement may not reduce conflict. If individuals hold intractable positions that are at odds with one another, interactive communication may not be enough to come to consensus. Yet, interactive communication still has the ability to ensure that commenters know that their concerns were heard and listened too during the process. While the commenter may still not agree with the specific outcome for a NEPA project, by at least knowing they were able to participate and that their comments were valued during the process improves their likelihood of viewing the final decision as legitimate.

### **Improve EIS Readability**

Both the BLT and Upper Beaver Creek EISs were difficult to read based on the Flesch reading ease test and a review of readability recommendations. In addition, Lunde, Brody, and Ryan’s review of 32 NEPA documents found all 32 documents difficult to read and lacking many readability best practices

(Appendix E). This indicates that these documents need to be improved in order for readers to better comprehend their content. The readability of EISs is critical because the EIS plays a central role in public engagement and discussion around Forest Service NEPA projects. The main form of public involvement in the NEPA process is offering comments on the Draft EIS. If the Draft EIS is difficult to read and understand, it will first alienate many potential stakeholders, especially individual citizens, and second has the potential to reduce readers ability to provide substantive comments.

The Council of Environmental Quality (CEQ) has recently identified the need to improve the readability of NEPA documents. In a draft Memorandum for Heads of Federal Departments and Agency, CEQ discussed the need for agencies to encourage “simple, straightforward, and concise reviews and documentation that are proportionate to and effectively convey the relevant considerations in a timely manner” (CEQ, 2011). This draft guidance indicates that EISs should be written in plain language and use a clear format to emphasize the impact analysis over background material.

While improving the readability of Forest Service EISs is important, it alone will not solve and reduce conflict between the agency and the public. Working on improving communication through public involvement activities and building relationships is a key component to reducing conflict and tensions. Improving readability is just one function of achieving better relationships and improving the agency’s ability to engage citizens in the NEPA process.

**Recommendation 4:** Improve EIS readability by incorporating readability best practices.

The first step to improve the EIS readability is to begin to address some of the comprehensibility barriers identified by the interview participants. These barriers included:

- ⇒ The EIS being too long;
- ⇒ Providing too much information and detail;
- ⇒ Using and not defining jargon;
- ⇒ Poor organization; and
- ⇒ Similarities among EIS documents make differentiation difficult.

Working to address these barriers, identified by the main readers of EISs will likely have the biggest impact on improving the readability of these documents. To provide clear opportunities to address some of these barriers, Forest Service NEPA coordinators, who write and compile EIS documents, should attempt to incorporate readability best practices and recommendations into the EIS. These

recommendations were first compiled by Lunde, Brody, and Ryan (Appendix E) and were used to evaluate the readability for the BLT and Upper Beaver Creek EISs. There are 24 recommendations that span aids for clarity, organization, and writing style. The full set of recommendations are discussed in Appendix A.

Lastly, Forest Service NEPA coordinators could begin using the Flesch readability test as a measure of readability as they write EISs. The Flesch score offers a numerical quick indication on how readable a document is. The average citizen prefers to read documents that score between 60 and 70. Using a Flesch test to see how close to this range EISs are will be an easy evaluation tool to identify if the readability of a document needs to be improved.

### **Incorporate Evidence Into the EIS**

In both the BLT and Upper Beaver Creek EISs, very few claims were backed up with evidence. Evidence includes providing citations to research studies, actual data, or using tables and or graphics to depict trends and information. When claims are backed up with clear evidence, it improves the legitimacy of the claims and readers are more likely to accept these claims and trust the information the Forest Service is providing. The Council of Environmental Quality's new draft NEPA guidance also discusses the need to incorporate references and evidence into EISs. The guidance clearly states "an agency may not incorporate any material in an EIS unless the material is reasonably available for inspection by potentially interested persons within the time allowed for comments" (CEQ, 2011).

**Recommendation 5:** Incorporate clear evidence to back up claims in the EIS.

When the Forest Service provided clear rationale as the basis for their claims, they defined concepts, and provided clear information interview participants were more likely to trust these claims. Ensuring that the EIS incorporates these three needs will provide readers with evidence that they find compelling and legitimate. Additionally, the majority of the evidence provided in the BLT and Upper Beaver Creek EISs were citations to various research studies. While these are legitimate forms of evidence, in order to verify this evidence, readers must spend time and energy obtaining and reading these sources and evaluate them for themselves. Providing numerical data or data in tables and graphic figures may be more compelling to readers than just providing citations. If citations are the best form of evidence, it also might be useful to provide some of the major pieces of scientific literature as an appendix for reader to easily access if they want to.

## Importance of Agency Response to Comments

In nearly every interview, participants brought up the importance they place on reading the agency's response to their comments on the draft EIS. These responses often acted as the only, or at minimum, a significant method for participants to identify if their concerns were valued, heard, and thoughtfully incorporated into the agency's decision-making process. Poor agency responses were clearly a source of frustration for participants. Since the agency's response is often the only metric for a participant to learn if their concerns were valued it becomes integral for influencing their perspective on the sincerity or legitimacy of a decision. If responses are well written and clearly address a commenters concerns, commenters are much more likely to accept the final decision. This is the case even if their input had rather insignificant influence on that decision overall. On the other hand, if the agency's response is poorly written and doesn't address commenters concerns, then commenters are more likely to contest the project and view it as illegitimate.

Previous research indicates that NEPA managers understand that it is important to provide clear responses to public comments (Stern & Mortimer, 2009). During this research I interviewed a Forest Service Environmental Coordinator whose job it is to run and execute the NEPA process, including responding to public comments. This coordinator articulated that they take public comments very seriously and that they value public comments. However, research shows that managers typically believe that just responding to every comment is enough, and that the quality of response is less important. This, from the viewpoint of participants, is clearly a mistake.

**Recommendation 6:** Improve the quality of agency response to comments.

Besides just answering all the public comments the agency receives, the Forest Service should emphasize responding with adequate quality. This means providing a detailed explanation and reasoning for their response. One of the most frustrating responses for participants is when the agency only wrote "this comment is outside the scope of the project." This response provides no explanation for why the comment is outside the scope of the project and why it has no validity on the project decision. The agency needs to provide reasoning why the comment is not relevant. Overall, the agency needs to approach writing responses to comments as part of a sincere dialogue rather than viewing if they provide a response that it is meaningful. By approaching responses sincerely, the Forest Service can foster a relationship with participants who will be more willing to accept the project decision. Some responses to comments that interview participants responded negatively too and that should be avoided include:

- ⇒ No response is necessary;
- ⇒ This comment is outside the scope of the project; and
- ⇒ See response to comment...

## 6.4 Questions for Further Research

During this study, it became clear that there are other areas that require further research. First, since this study is exploratory, more research needs to look at communicative action and Forest Service NEPA projects. Understanding communicative action in a broader array of Forest Service projects will provide a better platform to identify opportunities and strategies to foster communicative action.

Additional research into participant perceptions of Forest Service decision-making is also important. This study focused specifically on the concepts of comprehensibility, truth, sincerity, and legitimacy. There are other important concepts that need to be explored from the participant perspective. These concepts include: preferred public involvement activities, education, and relationship building. A concept that was brought up in multiple interviews was the adversarial nature of the NEPA process. Research that looks at what aspects of the process lead to this adversarial relationship should be explored. This may result in identifying key practices the Forest Service could adopt to better facilitate the decision-making process.

Finally, there is a need to better understand who participates in Forest Service NEPA processes. At times my research looked into understanding the role of interest groups versus individual citizens and the differences that has on the NEPA process. A better understanding of who participates and what motivates them to participate can help answer whether public participation is really just for the elite. Furthermore, it can help offer ideas for how best to engage the public in order to best define the public interest.

## 6.5 Conclusion and Implications

At its core, this study looks at how bureaucratic agencies make decisions. I believe that citizens have an important role in such decision-making processes. Understanding how effective public participation has been at allowing citizens to engage in decision-making is important. Research shows that public input provides important benefits, from building legitimacy for decisions to actually improving decision quality. The idea that decision-making could allow disparate interests to work

together to understand all the complexity of environmental management decisions and come to a collective answer is perhaps bred from idealism. Decision-making in government is complex, and there won't be a simple answer as to how better to engage citizens in decision-making. But, at least encouraging decision makers and citizens to think about these concepts may begin the process of improving and encouraging greater communication and understanding. Through such thinking, it may just be possible to break down the divide that currently exists so often between agency experts and citizens.

## APPENDIX A: Readability Recommendation Coding

Organization Readability Recommendations		
Recommendation	Description	Coding
Type of Heading	<p>Question headings are the most useful in helping readers scan the document to find specific information. Statement headings are the next best choice because they are still very specific. Topic headings are the least useful heading because they are vague and may confuse the reader.</p> <p><i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; Garner, Legal Writing in Plain English, 2001; Kimble, Lifting the Fog of Legalese, 2006; Murawski, 1999; Office of the Federal Register, 1998)</p>	<p>Question Headings: 1 Statement Headings: 0.5 Topic Headings: 0</p>
Number of Heading Levels	<p>Documents with more than three heading levels make it difficult for readers to track where they are in the structure of the document. The Office of the Federal Register recommends that regulations contain no more than three levels.</p> <p><i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; Office of the Federal Register, 1998)</p>	<p>&lt;= 3 Headings: 1 &gt; 3 Headings: 0</p>
Outline Headings	<p>Outline headings provide either numbers or roman numerals before each heading to indicate the chapter and section the heading corresponds to. Using outline headings can enforce to readers where they are in reading the document, and also help ensure that headings are formatted consistently.</p> <p><i>Relevant Citations:</i> (Freeman, 2002)</p>	<p>Present: 1 Absent: 0</p>
Chapter Title on Each Page	<p>This recommendation is not based on readability literature but rather a review of Forest Service NEPA documents. Having the chapter title on each page makes it clear to the reader what chapter they are reading and increases a reader's ability to skim a document for certain chapters</p>	<p>Present: 1 Absent: 0</p>
Document Outline	<p>This recommendation is not based on readability literature but rather a review of Forest Service NEPA documents. Providing a document outline that identifies where certain information is present is useful because it allows readers who may not be familiar with NEPA to identify what chapters, such as "purpose and need," actually discuss. Providing brief descriptions of what each chapter will cover is beneficial to readers and enhances their ability to find the information they wish to obtain.</p>	<p>Present: 1 Absent: 0</p>
Writing Readability Recommendations		
Recommendation	Description	Coding
Average # of Paragraphs in A Section	<p>Short sections break up material so it is easier to comprehend. Short sections can also provide better document organization.</p> <p><i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; Kimble, Lifting the Fog of Legalese, 2006; Murawski, 1999)</p>	<p>&lt;= 5: 1 &gt; 5 &amp; &lt;= 8: 0.5 &gt; 8: 0</p>
Average # of Words/Sentence	<p>Only one idea should be expressed in each sentence. Shorter sentences make it easier to convey complex information by breaking information into smaller, easier-to-process units.</p> <p><i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; Kimble, 2005; Garner, Legal Writing in Plain English, 2001; Kimble, 2006; Murawski, 1999; Office of the Federal Register, 1998; Redish, 1991; Securities and Exchange Commission, 1998)</p>	<p>&lt;= 20: 1 &gt; 20 &amp; &lt;= 35: 0.5 &gt; 35: 0</p>

Average # of Words/Paragraph	Long paragraphs discourage readers from even trying to understand the materials. Short paragraphs are easier to read and understand. Experts recommend paragraphs of no more than 150 words in three to eight sentences and should never be longer than 250 words.  <i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; Garner, Legal Writing in Plain English, 2001; Murawski, 1999)	<= 150: 1 > 150 & <=250: 0.5 > 250: 0
% Sentences with Subject, Verb, & Object	English's natural word order is subject-verb-object. Sentences should clearly provide these components.  <i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; Garner, Legal Writing in Plain English, 2001; Murawski, 1999; Office of the Federal Register, 1998; Securities and Exchange Commission, 1998)	>= 66: 1 > 33 & < 66: 0.5 <= 33: 0
% Sentences with Active Voice	Active voice is a clearer form of writing than passive voice. It eliminates ambiguity about responsibility and makes it easier for readers to understand.  <i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; Garner, 1995; Garner, 2001; Garner, 2003; Murawski, 1999; Office of the Federal Register, 1998; Redish, 1991) (Securities and Exchange Commission, 1998)	>= 66: 1 > 33 & < 66: 0.5 <= 33: 0
% Sentences without Double Negatives	If you write a sentence containing two negatives the sentence sounds negative but is actually positive. These types of sentences are difficult for readers to comprehend.  <i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; Fleisch, How to Write in Plain English, A Book for Lawyers and Consumers, 1979; Garner, 1996; Wydick, 2005)	>= 66: 1 > 33 & < 66: 0.5 <= 33: 0
% Paragraphs with Topic Sentences	A good topic sentence establishes a context for readers before they are provided with the details. Also, by having a good topic sentence readers are better able to skim the document.  <i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; Garner, 2001)	>= 66: 1 > 33 & < 66: 0.5 <= 33: 0
% Paragraphs with Transitions	Topic sentences should provide a transition from one paragraph to another. Using transition words clearly tells the reader how the following paragraph links with the preceding paragraph.  <i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; Garner, 2001)	>= 66: 1 > 33 & < 66: 0.5 <= 33: 0
<b>Aids for Clarity Readability Recommendations</b>		
Recommendation	Description	Coding
Glossary	This recommendation is not based on readability literature but rather a review of Forest Service NEPA documents. EISs that included a glossary allow readers to easily find definitions for unfamiliar terms and jargon.	Present: 1 Absent: 0
Lists Common Acronyms	This recommendation is not based on readability literature but rather a review of Forest Service NEPA documents. EISs that included a list of common acronyms made it quick and easy to identify what different acronyms stood for.	Present: 1 Absent: 0
Sidebars	Sidebars are useful tools for readers because they highlight important information in a document. Sidebars can be used to define unfamiliar terms or concepts, refer readers to additional information sources, highlight or reinforce important points, or identify project benefits and adverse effects.  <i>Relevant Citations:</i> (WSDOT, 2008; Jones, McDavid, Derthick, Dowell, & Spyridakis, unpublished)	Present: 1 Absent: 0

Vertical Lists	Vertical lists highlight a series of requirements or other information in a visually clear way. Use vertical lists to help your reader focus on important material.  <i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; Garner, 2001; Murawski, 1999; Securities and Exchange Commission, 1998)	Present: 1 Absent: 0
Highlighting	Highlighting makes important concepts stand out. The most typical types of highlighting are the use of bold and italics.  <i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011)	Present: 1 Absent: 0
# of Graphics	Graphics, or illustrations help provide meaning to difficult concepts or dense material.  <i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011)	>= 40: 1 < 40 & > 20: 0.5 <= 20: 0
# of Tables	Laying out material in tables helps readers see relationships in a way that dense text cannot. For most readers.  <i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; Kimble, 2006; Murawski, 1999; Office of the Federal Register, 1998; Securities and Exchange Commission, 1998)	>= 40: 1 < 40 & > 20: 0.5 <= 20: 0
Titles for Graphics/Tables	It is important for tables and graphics to be titled. These titles help readers interpret the table or graphics content and how it relates to the discussion.  <i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; WSDOT, 2008)	Present: 1 Absent: 0
Explanations for Graphics/Tables	It is important for tables and graphics to be explained and referenced in the discussion text. Otherwise, it is unclear to the reader why these aids for clarity are present.  <i>Relevant Citations:</i> (Plain Language Action and Information Network, 2011; WSDOT, 2008)	Present: 1 Absent: 0
Page Numbering	This recommendation is not based on readability literature but rather a review of Forest Service NEPA documents. EISs were written with different page numbering systems. The worst system was when page numbers restarted at each chapter making page references incomprehensible. The best page numbering system was when it indicated the chapter and the page number.	Chapter & Number: 1 Number: 0.5 Renumbered for each chapter: 0
Environmental Effects Comparison Table	This recommendation is not based on readability literature but rather a review of Forest Service NEPA documents. EISs with a table that compared the environment impacts of various alternatives made it easier for the reader to identify differences between alternatives.	Present: 1 Absent: 0

## APPENDIX B: Interview Guide

I am interested in having a conversation with you about your experience participating in the NEPA process with the Forest Service. I am interested in your general thoughts on the NEPA process as well as your thoughts on the process for the Upper Beaver Creek Vegetation Management Project.

- 1) To start, could you talk about your general impressions of the NEPA process?**
  - a) What are your thoughts of the NEPA process?
  - b) What is your attitude towards the NEPA process?
  - c) Negative/positive impressions?
- 2) What has your personal experience with the NEPA process been like?**
  - a) How often have you participated in NEPA processes?
  - b) What other agency EISs, other than the forest Service, have you commented on?
  - c) What differences have you noticed in how various agencies conduct the NEPA process?
  - d) Have you been involved with other Forest Service projects besides the BLT/Upper Beaver Creek Vegetation Management Project?
- 3) Now, transitioning from your general impressions of NEPA, could you briefly discuss your impressions about the NEPA process for the BLT/Upper Beaver Creek Vegetation Management Project?**
  - a) Why motivated you to participate in the NEPA process for the BLT/ Upper Beaver Creek Vegetation Management Project?
  - b) What did you want to get out of the process?
  - c) What did you see as your role in the process?
  - d) Besides commenting on the DEIS, how else did you participate in this process?
- 4) How did you know whether the Forest Service valued your concerns?**
  - a) Can you give an example of how the Forest Service responded to your concerns?
- 5) Can you discuss your impression about whether your input influenced the project?**
- 6) What is your opinion about the project after participating in this process?**
  - a) Do you accept the decision that was made?
  - b) Do you think the process was conducted fairly?
- 7) Where your expectations about the process met?**
  - a) Did you accomplish what you wanted?
- 8) What did you learn from reading the EIS?**
  - a) How easy to read was the EIS?
- 9) Was the evidence in the EIS particularly compelling? How did you come to this conclusion?**
  - a) Do you think the evidence was unbiased? Example
  - b) Do you think the evidence was complete? Example
  - c) Do you think the evidence was credible? Why?
- 10) What kinds of things really stood out for you about the process for this project?**
  - a) What was positive? Why?
  - b) What was negative? Why?
- 11) That covers the things I wanted to ask. Is there anything else you would care to add**

## APPENDIX C: Interview Questionnaire

This short questionnaire is supplemental to our interview and allows me to ask a few quick questions for which in-depth responses are unnecessary. These questions are in reference to the BLT Vegetation Management Project. Your identity and the information you have provided will remain confidential.

**About how much of the Environmental Impact Statement did you read? (Circle One)**

0%	25%	50%	75%	100%
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**Using the following scale, rate your agreement with the following statements:**

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
The EIS was comprehensible.	1	2	3	4	5
The Forest Service communicated the truth.	1	2	3	4	5
The Forest Service was sincere.	1	2	3	4	5
The process was legitimate.	1	2	3	4	5

*The following questions were for participants who comments on the BLT Project: The following questions will help me better understand the effectiveness of the EIS to communicate key information.*

	Yes	No
The Forest Service analyzed in detail an alternative based on matsutake mushroom harvesting production.	Y	N
The Forest Service preferred the alternative that best addressed wildlife species.	Y	N
One of the key issues for this project was its impact on soil productivity.	Y	N
The Purpose and Need called for the reduction of forest stand density for forest health and the contribution of timber to local and regional economies.	Y	N

*The following questions were for participants who comments on the Upper Beaver Creek Project: The following questions will help me better understand the effectiveness of the EIS to communicate key information.*

	Yes	No
The Forest Service analyzed an alternative based on riparian habitat conservation.	Y	N
The Forest Service preferred the riparian habitat conservation alternative.	Y	N
One of the key issues for this project was its impact on the harvesting of non-timber forest products.	Y	N
The Purpose and Need called for the reduction in the distribution of western juniper.	Y	N

## APPENDIX D: Readability Recommendations Analysis Data

The table below provides a list of all 24 readability recommendations; whether they were included in the BLT or Upper Beaver Creek EISs; and the score each recommendation received using the coding scheme. For more details of the coding scheme, refer to Appendix A.

Readability Recommendations	BLT		Upper Beaver Creek	
	Notes	Code	Notes	Code
<b>Organization Recommendation Score</b>	<b>2 of 5 recommendations</b>		<b>1 of 5 recommendations</b>	
Heading Type	Uses topic headings	0	Uses topic headings	0
# Of heading levels	4	0	8	0
Uses outline headings?	No	0	No	0
Has chapter title on each page?	Yes	1	No	0
Has a roadmap?	Yes	1	Yes	1
<b>Writing Recommendation Score</b>	<b>5.5 of 8 recommendations</b>		<b>5.5 of 8 recommendations</b>	
Average # of paragraphs in each section	3.04	1	4.38	1
Average # of words/sentence?	23.88	0.5	25.19	0.5
% Of simple sentences	40%	0.5	50%	0.5
% Of sentences with active voice	68%	1	100%	1
% Of sentences without double negatives	96%	1	100%	1
% Of paragraphs with topic sentences	64%	0.5	50%	0.5
% Of paragraphs with transitions	16%	0	25%	0
Average # of words/paragraph	107.71	1	123.06	1
<b>Aids for Clarity Recommendation Score</b>	<b>8.5 of 11 recommendations</b>		<b>7 of 11 recommendations</b>	
Has a glossary?	Yes	1	No	0
Lists common acronyms?	Yes	1	Yes	1
Has sidebars?	No	0	No	0
Has bulleted lists?	Yes	1	Yes	1
Uses highlighting?	Yes	1	Yes	1
# Of graphics	39	0.5	28	0.5
# Of tables	124	1	95	1
Has titles for graphics/tables?	Present and detailed	1	Present and detailed	1
Has explanations for graphics/tables?	Present but not detailed	0.5	Present but not detailed	0.5
Page numbering system	Page #	0.5	Page # restarts for each chapter	0
Has table comparing the effects of alternatives?	Present and detailed	1	Present and detailed	1
<b>Total Readability Recommendation Score</b>	<b>16 of 24 recommendations</b>		<b>14 of 24 recommendations</b>	

## APPENDIX E: Forest Service NEPA Readability Study

This appendix provides an in-depth discussion of the methods and findings of a research study conducted by Ashley Lunde, Clare Ryan, and myself prior to working on the communicative action study that was the focus of my thesis. The findings and information presented here provides useful insights and background about the readability of Forest Service NEPA documents. All the text and information in this appendix are excerpts from a report submitted to the Forest Service titled *Communication in NEPA at the US Forest Service: Crafting Effective NEPA Documents*.

### 1.0 Readability in NEPA

#### 1.1 Goals

The primary goals of this study were: 1) to analyze a sample of Forest Service NEPA documents and determine whether they meet NEPA content requirements and readability recommendations; and 2) to analyze a sample of Forest Service NEPA documents to determine whether they meet NEPA public participation process requirements.

#### 1.2 Approach and Method

##### 1.2.1 Analytical Framework

A framework for analyzing the quality of Forest Service NEPA documents was developed following a review of NEPA requirements, in conjunction with a literature review on readability and document quality. The literature was specific to NEPA documents as well as technical documents. NEPA requirements and recommendations were identified through an examination of the CEQ NEPA regulations (40 CFR 1500 et. seq.); the Final Rule for the USDA Forest Service on NEPA Procedures; the US Forest Service NEPA Handbook (USDA Forest Service); Owen Schmidt's "Writing the perfect EA/FONSI or EIS" (2007); and The Shipley Group's "How to Write Quality EISs and EAs" (Freeman, 2002). These sources were used to develop a set of required and recommended components of the NEPA document and the NEPA process. In addition, these sources identified a requirement for NEPA documents to be written in "plain language" (40 CFR 1500.4). The review of literature on readability therefore focused primarily on the Federal Plain Language Guidelines (PLGs) which are intended to create documents where readers can: (1) find what they need, (2) understand what they read, and (3) use it to fulfill their needs ([plainlanguage.gov](http://plainlanguage.gov), 2010). These guidelines were supplemented with literature on readability and document quality specific to NEPA documents (Killingsworth & Palmer, 1992; Gallagher & Jacobson, 1993; Sullivan, Frances, & Prabhu, 1996).

Based on the review of the regulations, guidance documents, and associated literature, a framework was developed which intended to capture all of the government required elements which can be

observed from a review of the NEPA document itself (including the EIS or EA and FONSI or ROD) as well as the most applicable recommendations. The set of required and recommended elements was then divided into three major categories:

- ⇒ Document requirements and recommendations;
- ⇒ Process requirements and recommendations; and
- ⇒ Readability recommendations.

*Document Requirements and Recommendations* – The document requirements and recommendations are comprised of those components which should be included in an EIS or EA, and the specific aspects of these elements which must be discussed. These elements include the length of the document, the presence of a cover sheet, table of contents, summary, purpose and need, alternatives, affected environment, environmental consequences, list of preparers, list of whom copies of the statement are sent, appendices, and methodology and scientific accuracy. In addition, many of these elements have specific requirements for components, which must be included in the discussion. The document requirements were developed from the CEQ regulations, the Forest Service regulations, and the Forest Service NEPA Handbook. The CEQ regulations, the Forest Service regulations, and the Forest Service NEPA Handbook focus on requirements for the EIS and provide little guidance for the document contents of EAs, making EAs much more flexible. Therefore, the set of requirements developed were based on requirements for an EIS document. Because there are few requirements for an EA, the document components were divided into required elements and those that would be considered recommended (generally these were EIS requirements that could also apply to EAs).

*Process Requirements and Recommendations* – The process requirements and recommendations are comprised of those elements that relate to the process by which the document is created and are based on the CEQ regulations, Forest Service regulations, and the Forest Service NEPA Handbook. These requirements focus on the public participation process and include an interdisciplinary approach, time limits, the Notice of Intent (NOI), public comments, public involvement activities, and public notifications. In addition, many of these elements have specific requirements for these processes. It should be noted that these components were developed based on those requirements that can be observed in the EIS or EA document. In other words, this portion of the framework relies not only on whether these process requirements were met, but also on whether they are clearly summarized in the document itself. Like the document requirements, the process requirements differ for EISs and EAs and the set of elements developed were based on the broader requirements of an EIS. For use in the examination of EAs, these elements were then divided into required components and those that would be considered recommended.

*Readability Recommendations* – The readability recommendations are comprised of those elements that relate to the organization and clarity of the document. The only readability requirement included in the CEQ regulations, the Forest Service regulations, and the Forest Service NEPA Handbook are that the documents be written in "plain language." All other components are considered recommended for both EISs and EAs and were largely drawn from the Federal PLGs and supplemented with NEPA-specific recommendations taken from the literature review. The set of PLGs as well as other recommendations

from the literature review were paired down to those that were considered most applicable to NEPA documents. The readability components included are focused on document organization, the clarity of the writing, and aids used for clarity (graphics, lists, tables, etc.).

In order to assess the validity of the framework as well as to refine areas , which needed more detailed evaluation, four documents were initially selected (two EISs and two EAs) for a pilot round of coding. Three of the cases were initially coded by two separate individuals. Based on questions and inconsistencies that arose during this first round of coding, the framework was revised and one of the previously coded documents was coded jointly by the two coders. Following the joint coding, small revisions to the framework were made, and the framework was finalized. The two coders then individually coded the fourth document and compared the results of this coding. This comparison revealed that the coders were producing the same results and the remainder to the coding was completed by these two individuals.

A complete list of all document, process, and readability requirements and recommendations are included in Appendix A.

### ***1.2.2 Case Selection***

Once the framework was developed, a process of case selection was undertaken in order to apply the framework to Forest Service NEPA documents. In order to obtain a diverse set of cases, EISs and EAs were selected from three Forest Service regions (Regions 1 - the Northern Region, 2 - the Rocky Mountain Region, and 6 - the Pacific Northwest Region). Additionally, cases were selected from two forests in each of these regions, for a total of six National Forests. Based on discussions with the Forest Service, a ratio of two EISs for every three EAs was selected to better represent the relative frequency of EISs produced to EAs. A limitation to this approach is that it relies solely on what is written in the EA/EIS for analysis. If discussion about impacts, or the process of analyzing impacts were left out of the EA/EIS this approach would not capture that activity. However, since an EA/EIS is required to disclose the information about the environmental impacts and the process of analyzing these impacts, it seems appropriate to solely focus on the EA/EIS in order to fill out the evaluation framework.

A target sample of 30 projects was selected in order to increase the confidence in findings. Three EAs and two EISs were selected from each of the six national forests (10 per region). The individual forests and cases were selected based on the date of the documents (documents completed between 2007 and 2010), the availability of the documents (documents were collected from the Forest Service webpage), and project type. In most cases, the availability of documents within the specified date range narrowed the choice of National Forests to two in each region, as most forests did not have the necessary two EISs and three EAs readily accessible. For the forests where more than two EISs and three EAs were available, the project types were reviewed and cases were selected which were intended to provide a wide range of Forest Service project types and purposes. The cases selected included the following project activities at various scales: forest products; facility management; road management; fuels management; grazing management; land management planning; minerals and geology; recreation management; special areas

management; special use management; vegetation management; wildlife, fish, and rare plants; watershed management; research; as well as combinations of these actions.

Two of the pilot NEPA documents corresponded to a chosen National Forest for the sample and thus they were incorporated into the 30 projects that were selected. The incorporation of these projects raised the sample size to 32 projects (13 EISs and 19 EAs) across three regions and eight National Forests. The other two documents did not correspond to a National Forest in the sample, and were therefore not included in the analysis.

### **1.2.3 Coding**

Once the framework had been completed and cases selected, the documents were coded to identify if the requirements and recommendations were met in each case.

#### *1.2.3.1 Document and Process Coding*

The document and process coding scheme consisted of either a two- or three-point coding schematic (depending on the component being coded). The two-point code was used to denote the presence or absence of a requirement or recommendation. By using a full circle and an empty circle symbol, we coded this presence or absence (a ● indicated presence and a ○ indicated absence). An example of this coding would be the presence or absence of an index. A three-point coding system was used to indicate not only presence or absence, but the quality in which a requirement was met:

- Present and detailed = ●
- Present but not detailed = ◐
- Absent = ○

#### *1.2.3.2. Readability Coding*

In order to code for many of the readability recommendations (e.g. short sections, active voice, etc.), it was necessary to select samples of each document. One-page excerpts were selected from every fifteen pages of each document measuring at least 30 pages, and from every five pages of documents measuring less than 30 pages. These sample pages were then assessed for the readability recommendations and the scores were averaged for each document. One exception to this document sampling was the Flesch reading ease scores and the Flesch-Kincaid grade levels which were run on the entire document as well as the document summary (where available) using a computer analysis program (Flesch 2.0).

Where appropriate, the readability components were coded according to the present/absent or present and detailed/present but not detailed/absent coding described above (e.g. the presence or absence of a glossary). In other cases, the readability recommendations were numeric in nature (e.g. the average number of sentences per paragraph). Where the components were numeric in nature, recommendations from the readability literature were used to create thresholds for coding into a maximum of three codes. An example of this coding is the thresholds for the number of paragraphs per section. In this case, the following coding scheme was used:

Less than or equal to 5 paragraphs = ●

Greater than 5 paragraphs, but less than or equal to 8 paragraphs = ◐

Greater than 8 paragraphs = ○

Where the readability components were assessed based on percentages (e.g. the percentage of paragraphs with topic sentences), the following coding scheme was used:

Greater than or equal to 66 percent = ●

Less than 66 percent but greater than 33 percent = ◐

Less than or equal to 33 percent = ○

### *1.2.3.3 EIS and EA Scores*

In order to compile document, process, and readability "scores" from the codes discussed above, the codes were transferred into a point system where the ● was valued at 1, the ◐ was valued at 0.5, and the ○ was valued at 0.

### *1.2.3.4 Qualitative Impressions*

Additionally, qualitative comments were made for each document based on overall readability/understandability, overall usefulness for users, positive elements, negative elements, and general comments. These qualitative impressions are included in the conclusions and recommendations of the document, process, and readability findings sections for EISs and EAs below.

### **1.2.4 Development of Findings**

The results of the coding analysis were compiled into an excel spreadsheet which allowed for notes on each component of each document. In addition, the numeric scoring results discussed above were transferred into a statistical analysis program (PASW) in order to determine requirements and recommendations which were consistently being met, and those that were consistently not met. The statistical analysis was used to develop a set of mean scores and frequencies which were examined for patterns regarding the consistency with which each component was being completed. The following sections represent a summary of the findings of the coding analysis.

## **2.0 Environmental Impact Statements – Document Requirements**

### **2.1 Are Forest Service EISs meeting document requirements?**

The CEQ provides broad guidance and requirements for the EIS document. The Forest Service also created supplemental requirements outlined in the Forest Service NEPA Handbook. Therefore, certain information in a Forest Service EIS may not be required for EISs prepared by other Federal agencies. According to the CEQ regulations, an EIS “shall provide full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment” (40

CFR 1502.1). Furthermore, an EIS is not just a disclosure document; it is a tool to assist in planning actions and making decisions.

Sixty-three different document requirements were identified in the CEQ regulations, the Forest Service regulations, and the Forest Service NEPA Handbook. In general, the EIS should not normally exceed 150 pages and for proposals of unusual scope or complexity should be less than 300 pages (40 CFR 1502.7). The total document scores for EIS required elements ranged from 41.5 to 56.5 of the 63 identified elements (Figure 1). The average number of document requirements met was 50.5, indicating that on average, 80 percent of EIS document requirements were met in the sample analyzed.

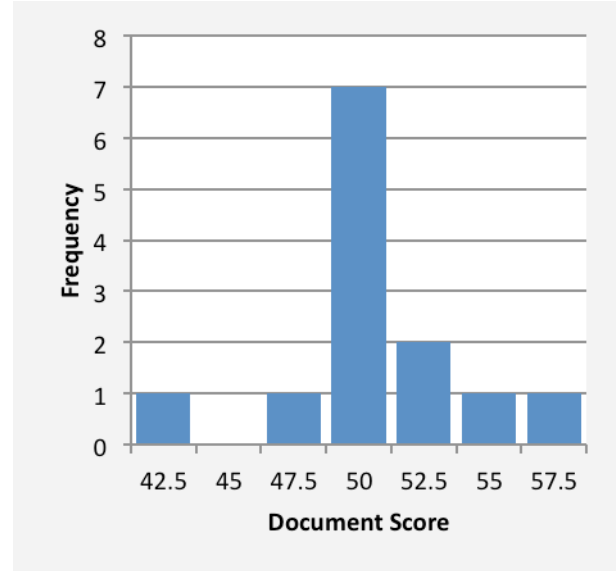


Figure 1. Range and Frequency of EIS Document Scores (Out of 63)

**2.1.1 Which required document elements are Forest Service EISs consistently meeting?**

CEQ recommends that EISs follow a standard format to “encourage good analysis and clear presentation of the alternatives including the proposed action” (40 CFR 1502.10). The regulations identify eleven elements that are required to be present in an EIS .

The analysis indicates that the majority of the required document elements were included in the EIS documents in our sample. Nine of these eleven elements were consistently present in the sample of Forest Service EISs reviewed (included in at least 75 percent of the EISs reviewed) (Table 1). These elements included the purpose and need, alternatives, environmental consequences, and a list of document preparers.

All of the EISs reviewed contained a description of the scope and objective of the proposal. Nearly all contained discussion of why action was being proposed at that location and at that time (12 of the 13 EISs contained a detailed discussion and one contained a limited discussion) as well as an explanation of the difference between the existing and desired condition (12 contained a detailed discussion and one contained a limited discussion). All of the EISs reviewed included reasonable alternatives that met the purpose and need. In addition, nearly all provided substantial treatment of each alternative so that reviewers could evaluate their comparative merits (12 contained a detailed discussion and one contained a limited discussion). Over 75 percent of the documents included detailed discussions of both the indirect and

**EIS Required Elements**

- Cover sheet
- Table of contents
- Summary
- Purpose and need for action
- Alternatives including proposed action
- Affected environment
- Environmental consequences
- List of preparers
- List of whom received copies of the statement
- Index
- Appendices

direct effects of the actions and an even greater number (above 90 percent) included detailed discussions of cumulative effects. All reviewed EISs included a list of preparers.

Table 1. **EIS Document Requirements that were Consistently Met**

Document Requirement	Percent of Sample Which Met Requirement
Cover sheet	84.62%
Table of contents	92.31%
Summary	76.92%
Purpose and need	100.00%
Alternatives	100.00%
Affected environment	100.00%
Environmental consequences	100.00%
List of preparers	100.00%
Appendices	100.00%
Scope and objective of the proposal	100.00%
Why action proposed at that location and time	92.31%
Difference between desired and existing condition	92.31%
Reasonable alternatives	100.00%
Alternatives meet purpose and need	100.00%
Substantial treatment of alternative to evaluate comparative merits	92.31%
Indirect effects	84.62%
Direct effects	84.62%
Cumulative effects	92.31%

### ***2.1.2 Which required document elements are Forest Service EISs consistently lacking?***

Five elements were consistently lacking in the sample of Forest Service EISs reviewed (included in less than 25 percent of the EISs reviewed) (Table 2). The length of the document was found to be inconsistent with CEQ regulations. Only one EIS met the 150-page limit identified for normal proposals, and six documents were between 150 and 300 pages – the page limit for unusual or complex projects. A further six documents (46.15%) were longer than 300 pages, with the maximum page length reaching 672 pages.

The Forest Service requires that a cover sheet, a required element for an EIS, provide the date by which comments or appeals must be received. This requirement was consistently lacking from the reviewed EIS cover sheets with only two providing a comment date. However, this may be due to the particular administrative review process of the project, as some types of projects require pre-decisional review and thus the opportunity to comment on the final EIS prior to a decision being made.

There were three components that are required to be included in the affected environment section of an EIS that were consistently lacking. Only three EISs discussed energy requirements and conservation potential for various alternatives and mitigation measures. Two EISs discussed depletable natural resource requirements of various alternatives.

Table 2. EIS Document Requirements that were Consistently Lacking

Document Requirement	Percent of Sample Which Met Requirement
Document length <150 pages	7.69%
Document length <300 pages <sup>1</sup>	53.85%
Comment date on cover sheet	15.38%
Energy requirements for alternatives and mitigation measures	23.08%
Conservation potential for alternatives and mitigation measures	23.08%
Depletable natural resource requirements of alternatives	15.38%

<sup>1</sup>While more than 25% of the sample met this requirement, and thus may not be considered consistently lacking, it is an important finding to highlight because it indicates that 46.15% of documents do not meet the maximum length requirement.

## 2.2 Summary

The results of document analysis indicate that in the sample of EISs examined, the majority of the required document elements were included. Nine of the eleven required EIS document elements were included in at least 75 percent of the document reviewed (six of the elements were included in all of the EISs). However, some specific components of discussion were missing from a majority of documents or not detailed in the document. The following items represent required elements which were not consistently included in the EISs (included less than 75 percent of the time). These items are considered to be meaningful ways in which to meet the primary goals of EISs: to provide sufficient evidence and analysis, and to make the information accessible:

- Document Length – The EISs reviewed were on average just over 300 pages in length, and only one document met the 150-page limit suggested by the CEQ for normal EIS proposals. While the CEQ does allow unusual or complex proposals to be up to 300 pages in length, it does not seem probable that half of the projects reviewed were in this category. Furthermore, six documents were longer than 300 pages. The length of an EIS plays a role in readability, and writing shorter EISs could enhance readability by making them more accessible to readers. Because EISs can be quite long, readers may rely heavily on summaries to obtain information quickly. Providing a clear and concise summary is of critical importance.
- Summary – Although a Summary was included in 10 of the 13 EISs, it is a critical component for readability and could easily be included in all EISs. The summary should be of great interest for stakeholders to get a sense of what the project is about and a general representation of the impacts that the various alternatives can produce. However, even in the EISs that contained summaries, the areas of controversy and issues to be resolved were only discussed in 70 percent and 60 percent of the summaries, respectively.
- Environmental Consequences – While all EISs in the sample had an environmental consequences section, three requirements for this section were met by less than 25% of the sample. For example, an environmental interest group will likely be interested in the conservation potential of alternatives and mitigation measures. Providing this information provides a clear picture of the differences in alternatives beyond the direct effects on the project area.

- List of Preparers – While all the EISs reviewed contained a list of document preparers, only five documents provided detailed qualifications of these preparers. CEQ regulations indicate that the list of preparers “shall list the names, together with their qualifications (expertise, experience, professional disciplines), of the persons who were primarily responsible for preparing the” EIS (40 CFR 150.17). The majority of documents listed only a preparer’s name and their resource area. The best example of a list of preparers was identified in the Trapper Bunkhouse BEMRP Project, which provided the name, position, contribution, education, and experience of all preparers.
- List of Whom Copies of the Statement are Sent – Only 9 of the 13 EISs reviewed provided a list of who received copies of the statement. This requirement should not be difficult to meet and could be easily incorporated into every EIS.
- Index – An index was only included in 6 of the 13 EISs reviewed. The CEQ requires an index as part of the EIS, but furthermore, an index is very important in terms of readability. An index is something that should be included in any document and could easily enhance a reader’s ability to locate specific information in the document.

The EIS document coding provided a number of qualitative impressions regarding EISs produced by the Forest Service. In general, the EISs reviewed followed a similar document structure. The Forest Service provides an EIS template to guide agency personnel in writing an EIS. This template is not required to be followed, and although some of the EISs followed the formatting and style of the template, others did not.

Even though the majority of the sample met most of the document requirements, a qualitative analysis indicates that claims are often made without providing evidence in support. Below is an example from the Upper Beaver Creek EIS:

Vegetation patterns and occurrence within the analysis area are different now than what existed historically. Changes to the health, structure, composition, distribution, and function of forest stands have altered the natural processes that maintain a viable ecosystem. This has affected vegetative resiliency, wildlife habitat diversity and amount, water quality, visual quality, fuel loadings, and potential fire behavior (pg. 2).

This information was found after conducting a watershed analysis, but no evidence is provided for the basis of these conclusions. The document states that vegetation patterns are different, but does not explain the difference. The document claims that certain processes have changed but does not indicate how or provide evidence for this change. Stating that wildlife habitat diversity has changed means very little if no evidence is provided to demonstrate this change (although some things cannot be quantified, it would be useful to have an indication of the direction (up or down) of change. Without evidence, readers are expected to accept Forest Service claims based on faith, which may alienate key stakeholders or increase opposition to a project. The Spruce Gulch FEIS is a good example of providing evidence. When discussing the increase in mountain pine and spruce bark beetles, the document includes a graph and actual numbers on the population increases. This evidence clearly supports their claim and the use of a graph relates this concept clearly to the reader.

Finally, the purpose and need section should provide the reader with an understanding of the project and why it is being recommended. The Forest Service indicates that a purpose and need statement “defines the scope and objectives of the proposal [and] describes in detail why action is being proposed at that location and at that time.” This section is the persuasive notion of an EIS; it must provide the evidence and the argument for why a project is proposed. If a reader reads this section and cannot identify why the project is being proposed, then the objective of this section is forgone. While not all EISs had this problem, several in the sample produced more questions after reading the Purpose and Need rather than answering them. Writers of this section must ensure that the reasoning is both clear and evidence-based so that a broad audience can understand the purpose and need for a project.

Some of the same problems in the Purpose and Need occurred in the Environmental Consequences section. In many of the EISs in this sample, claims are provided with very little clear reasoning behind the claim. Other times, claims can be confusing and seem contradictory. The Big Summit Cluster Allotment Management Plan FEIS contains the following discussion about the grazing impacts on the plant species *Calochortus*:

...the guide recommends that *Calochortus* populations identified as “select populations” be grazed early [...]. The idea of avoiding early grazing is to reduce impacts of removing plants by grazing and trampling when soils are more moist and plants are actively growing. Late season grazing would mean that livestock would be using habitats occupied by *Calochortus* when soils are drier and more firm and plants are dormant and therefore less vulnerable to livestock impacts (pg. 142).

This passage suggests that scientific review indicates and recommends that *Calochortus* populations be grazed early in the season. Yet, the Forest Service proceeds to discuss that they prefer avoiding early grazing and in fact propose to do late season grazing to reduce livestock impacts. The discussion does not provide literature or evidence to support why late season grazing is preferred over early season grazing as recommended by the guide. This type of reasoning is both unclear and contradictory, making it difficult for readers to comprehend the impacts of the project.

The CEQ regulations (40 CFR 1500) and the Forest Service NEPA Handbook (FSH 1909.15) provide a checklist of document requirements for an EIS. The Forest Service also provides an EIS template that provides writers with both written requirements and document design recommendations. Even with these tools, the EISs in the sample did not include all of the established EIS document requirements.

### **3.0 Environmental Assessments – Document Requirements & Optional Elements**

#### **3.1 Are Forest Service EAs meeting document requirements?**

The EA document has fewer requirements than the EIS in terms of specific components that must be included (according to CEQ regulations and Forest Service directives). For this reason, the required elements and those that are recommended (optional) are discussed separately. Optional elements include components, which are required for the EIS (which would also be applicable to EAs but are not required) as well as those that are recommended in the environmental impact assessment literature. It should be noted that the EA is designed to be a more flexible document in terms of content than the EIS and this assessment is not meant to imply that all EIS required components should be present in, or are

appropriate for, all EAs. According to the CEQ regulations "an EA may be prepared in any format useful to facilitate planning, decisionmaking, and public disclosure as long as the requirements of paragraph (b) are met" (the required elements).

### **3.1.1 Are Forest Service EAs meeting the majority of document requirements?**

Eleven different document requirements were identified in the CEQ regulations, the Forest Service regulations, and the Forest Service NEPA Handbook. In general, the requirements for the EA document are that it must include brief discussions of the need for the proposal, alternatives, the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted (40 CFR 1508.9). In addition, the EA should be concise and normally not exceed 15 pages (FSH 1909.15). The EA must also include a discussion of the following elements: (1) the relationship between the desired condition and the existing condition (FSH 1909.15), (2) the proposed action and alternative(s) that meet the need for action, and (3) the environmental impacts (direct, indirect, and cumulative) of the proposed action and alternative(s) (36 CFR 220.7). The total document scores for EA required elements ranged from 7.5 to 10 of the 11 identified elements (Figure 2). The average number of document requirements met was 9.4, indicating that on average, 85 percent of EA document requirements were met in the sample analyzed.

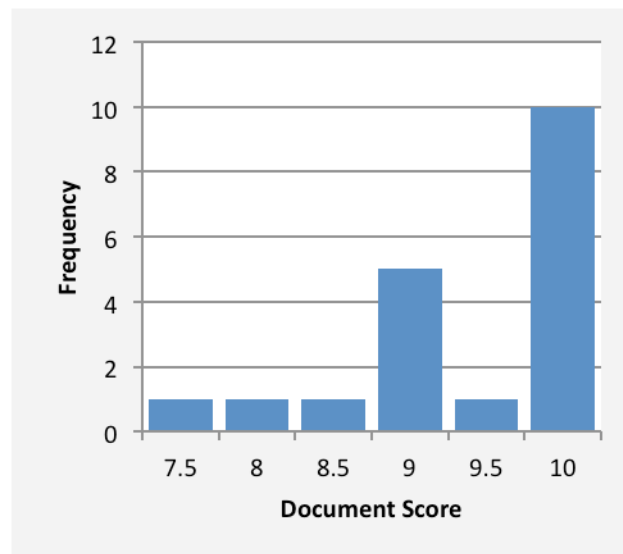


Figure 2. **Range and Frequency of EA Document Scores (Required Elements – Out of 11)**

### **3.1.2 Which required document elements are Forest Service EAs consistently meeting?**

The EA documents consistently included the major section requirements identified by the CEQ regulations, including a discussion of the purpose and need, alternatives, and environmental consequences/effects. At least some discussion of these key requirements was present in all of the EAs reviewed. Other required components were present in most, but not all, of the EAs assessed (Table 3). Nearly all of the EAs reviewed contained a description of why the proposed action was being proposed at that location and at that time (18 of the 19 EAs contained a detailed discussion and one contained a limited discussion) as well as an explanation of the differences between the existing and desired conditions (17 contained a detailed discussion and one contained a limited discussion). In addition, all of the EAs reviewed contained alternatives which met the described purpose and need. It should be noted that under the new 1909.15 direction and rule that alternatives are only required if there are unresolved conflicts with the proposed action. Over 75 percent of the documents included detailed discussions of both the indirect and direct effects of the actions and an even greater number (nearly 90 percent) included detailed discussions of cumulative effects. All but one of the reviewed EAs also included the required listing of agencies and persons consulted.

Table 3. EA Document Requirements that were Consistently Met

Document Requirement	Percent of Sample Which Met Requirement
Purpose and Need for Action	100.00%
Why Action is Proposed at that Location and Time	94.74%
Difference Between the Existing and Desired Conditions	89.47%
Alternatives	100.00%
Alternatives Meet the Purpose and Need	100.00%
Environmental Consequences	100.00%
Direct Effects and Significance	78.95%
Indirect Effects and Significance	78.95%
Cumulative Effects	89.47%
Agencies and Non-Forest Service Contributors	93.75%

**3.1.3 Which required document elements are Forest Service EAs consistently lacking?**

Of the required EA document components, only the length of the document was found to be inconsistent with the Forest Service NEPA Handbook guidance (there is no CEQ required page limit. None of the EAs met the 15 page limit recommended by the Forest Service, and note that this requirement is no longer in the directive system. The mean document length was slightly over 100 pages. Only five of the 19 EAs reviewed were under 50 pages, with the longest EA reaching nearly 300 pages.

**3.2 Are Forest Service EAs including optional elements?**

The complete set of document components used to evaluate the EIS documents were used as the optional elements for an EA. There were 63 document components for the EIS, 11 of which were required for EAs, leaving a total of 52 optional document requirements for the EA. A complete list of the components is included in Appendix A. For the purpose of this discussion, only the components which are consistently present or are consistently lacking in the sample of EA documents are discussed.

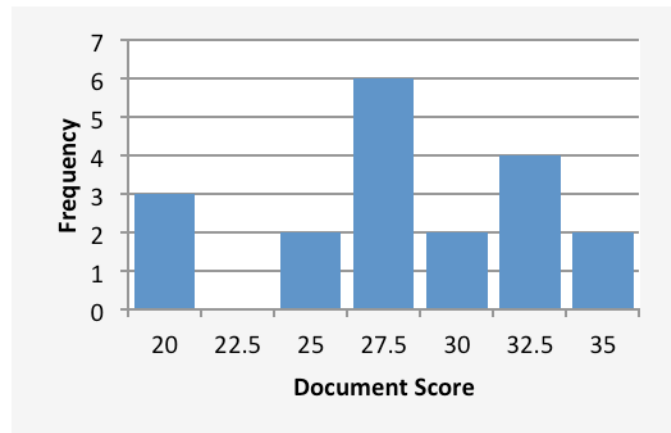


Figure 3. Range of Frequency of EA Document Scores (Recommended Elements – Out of 52)

The total document scores for EA optional elements ranged from 20 to 35.5 of the 52 identified elements (Figure 3). The average number of optional document elements met was 28.1, indicating that on average 54 percent of optional EA document elements were met in the sample.

**3.2.1 Which optional document elements are Forest Service EAs consistently including?**

A number of the optional elements were consistently included in the sample of EAs (included in at least 75 percent of the EAs reviewed) (Table 4). Among these was the table of contents, including a list of major chapters and sections as well as a mechanism for locating these sections within the document. In addition, over 80 percent of the EAs reviewed contained a list of preparers which allows readers to

identify personnel and, in many cases disciplines of these staff, which were involved in the development of the document. Additional content components were also included in many of the EAs within the alternatives, affected environment, and environmental consequences portions of the documents that are not specifically required for an EA but aid in fulfilling the goal of providing sufficient evidence and analysis for determining whether to prepare an environmental impact statement or a finding of no significant impact. These components included providing substantial treatment of alternatives so that reviewers can evaluate their comparative merits; including reasonable alternatives; including a no action alternative; describing the environment of the area to be affected or created by the alternatives; describing the biological, physical, and social components of each affected resource; addressing possible conflict between the proposed action and the objectives of other land use plans, policies, and controls for the area; as well as a discussion of urban quality, historic, and cultural resources. Each of these components was included and the discussion considered detailed in at least 75 percent of the EAs reviewed.

Table 4. **Optional EA Document Recommendations Elements that were Consistently Met**

Document Requirement	Percent of Sample Which Met Requirement
Length of Cover Sheet (of those with Cover Sheets)	100.00%
Table of Contents	89.47%
Table of Contents Includes Major Chapters and Sections	89.47%
Summary Less than 15 Pages (of those with Summaries)	100.00%
Purpose and Need Less than 5 Pages	78.95%
Defines Scope and Objectives of Proposal	94.74%
Alternatives Less than 5 Pages	100.00%
Substantial Treatment of Each Alternative	84.21%
Inclusion of Reasonable Alternatives	78.95%
Inclusion of No Action Alternative <sup>1</sup>	89.47%
Affected Environment	100.00%
Environment of Area to be Affected	89.47%
Physical Components of Affected Resources	84.21%
Biological Components of Affected Resources	94.74%
Social Components of Affected Resources	94.74%
Possible Conflict Between Proposed Action and Land Use Plans, Policies, and Controls for the Area	89.47%
Urban Quality, Historic, and Cultural Resources	94.74%
List of Preparers	84.21%

<sup>1</sup>A new rule in 2008 speaks to whether a No Action is needed in an EA and clarifies that it is not required, provided the effects of no action are appropriately covered in the affected environment section.

### **3.2.2 Which optional document elements are Forest Service EAs consistently lacking?**

This discussion is focused on the optional elements, which were consistently absent from the sample of EAs (present in 25 percent of the documents or less) (Table 5). Many of the optional elements were included sporadically in the EAs reviewed (present in between 25 and 75 percent of the documents), but were not considered consistently lacking. Optional elements that were consistently lacking in the sample of EAs included the identification of the Forest Service's preferred alternative; energy requirements, conservation potential, and depletable natural resource requirements of the various alternatives and mitigation measures; the qualifications/experience of staff involved in the preparation of the document;

a list of whom copies of the document were sent; and an index.

**Table 5. Optional EA Document Elements that were Consistently Lacking**

Document Requirement	Percent of Sample Which Met Requirement
Designation as Draft or Final on Cover Sheet	21.05%
One Paragraph Abstract on Cover Sheet	5.26%
Cover Sheet Abstract Includes Alternatives	0.00%
Date Comments are Due on Cover Sheet*	10.53%
Summary Includes Areas of Controversy	0.00%
Forest Service Preferred Alternative Identified	21.05%
Energy Requirements of Alternatives and Mitigation Measures	5.26%
Conservation Potential of Alternatives and Mitigation Measures	10.53%
Depletable Natural Resource Requirements of Alternatives and Mitigation Measures	0.00%
Names and Qualifications of Preparers	12.50%
List of Whom Copies Were Sent	21.05%
Index	5.26%

### 3.3 Summary

The results of the document analysis indicate that in the sample of EAs investigated, the majority of the required document elements were discussed. All of the EA required document components were included in at least 75 percent of the documents reviewed (five of the elements were included in all of the EAs), with the exception of the page limits. Many of the optional elements for EA documents were not included in many of the documents reviewed. The following represent optional elements which were not consistently included in the EAs (included less than 75 percent of the time):

- Document Length - The EAs reviewed were on average just over 100 pages in length. According to the CEQ's "Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations," a lengthy EA generally indicates that an EIS is needed.
- Table of Contents - Although 17 of the 19 EAs did include a table of contents, only six of the EAs included lists of tables and figures. These are often important quick references and without a listing of the locations within the document, they may be difficult to find. This is especially important for the sample of EAs reviewed, which were relatively long.
- Summary - One of the recommended elements that was included sporadically in the EAs reviewed was the summary (included in 8 of the EAs reviewed). The summary is an important tool in providing an overview of the project and is important for readers to quickly gain information and understanding about the project. The CEQ regulations indicate that a summary should include: "the major conclusions, areas of controversy (including issues raised by agencies and the public), and the issues to be resolved (including the choice among alternatives)" (40 CFR 1502.12). Only half of the EAs with a summary discussed major conclusions, none discussed the areas of controversy, and three discussed issues to be resolved. The coding and qualitative analysis indicate that these summaries were often too short

(average length was 1.2 pages) to provide critical information and were not useful in providing an overview of the project.

- Alternatives - The alternatives section was included in all of the EAs reviewed, but some of the recommended elements in this section were found to be lacking. Of note here is that the explanation of why alternatives were eliminated from detailed study was included in just over 30 percent of the EAs reviewed. This is an important element for readers to understand how the alternatives were developed and may play a role in challenges to the document if readers are unsure of why alternatives that they think should be included were not assessed. Even a limited discussion of this element, or inclusion in the form of a table, could provide readers an understanding that is currently lacking.
- Environmental Consequences - All of the EAs assessed included a discussion of environmental consequences. However, only two included a discussion of the conservation potential of the alternatives and mitigation measures, and only one included a discussion of the energy requirements of the alternatives and mitigation measures. None of the EAs included a discussion of the depletable natural resource requirements of the alternatives and mitigation measures. It is clear that these sections may not be applicable to every EA decision; however, they would provide meaningful information in appropriate cases. Including sections that are clearly titled could make this information more easily accessible and would provide additional information related to the tradeoffs between alternatives provided.
- Qualifications of Preparers, List of Whom Copies were Sent, and Index - These elements were included in 12.5 percent, 21 percent, and 5.3 percent of the EAs reviewed, respectively. Although these elements do not provide substantive information regarding the decision itself, they do provide a means of evaluating the preparation and increasing the readability of the document. In addition, they are relatively simple elements to include and could easily be included in all of the EAs produced.
- Methodology and Scientific Accuracy - All but one of the EAs reviewed included some discussion of methodology; however, only 63 percent of the documents were considered to have a detailed and clear discussion of methods. Some of the EAs included no references and in nearly all cases the methodology was buried in the document and/or scattered and confusing.

The EA document coding yielded a number of qualitative impressions. In general, the EAs reviewed followed a similar document structure and contained many of the same elements required of the EIS. However, many of the EAs left out components, which may be helpful in the assessment of alternatives. Interestingly, the scale of the decision did not appear to be tied to the number of elements, which were included in the documents. Also, the EAs did not appear to take on other document structures as may have been expected by the lack of specific requirements. The language provided in the Forest Service directives and CEQ regulations which state that an EA may be prepared in *any format* useful to facilitate planning, decisionmaking, and public disclosure appears to support flexibility in the development of these documents. Instead, what was observed was a pared-down version of the strict requirements of

the EIS. In most cases, even the areas, which were found to be consistently lacking were the same areas which were least often present in the EIS. Although the components and structure of the EAs were roughly similar, it is worth noting that the EAs did not appear to reflect a set template, even within each region. This is not to say that no documents were similar enough to be from the same template, but that there did not appear to be any one single specific format or structure.

The major qualitative impressions of the document structures and included components were focused around the relationship between the purpose and need and the development of alternatives. As was the case with the EIS documents reviewed, the purpose and need was often clearly defined in terms of identification of differences between the existing and desired conditions (as required), but the background was often lacking. For example, in a hazardous fuels project, the conditions which define what makes a given stand hazardous may not be detailed. Instead the hazardous conditions would be taken as given and the desired condition detailed, but the rationale and evidence for why one condition is desired over the other may be lacking.

In addition, the alternatives were generally considered appropriate to the purpose and need (as required), but often did not discuss the rationale for why the range of alternatives was selected or why other alternatives were not evaluated (as evidenced by the lack of the rationale for eliminating alternatives from study discussed above). Finally, the documents appeared inconsistent with their treatment of the No Action Alternative. In most cases, the treatment seemed appropriate, where No Action was considered to be the continuation of current management; however, in a few cases, the No Action Alternative was considered to be the cessation of ongoing management activities. Although the No Action Alternative is not required for the EA, it should be noted that the treatment of this alternative was not consistent throughout the documents. It has been clarified in the new rule and now has been incorporated into the handbook

The provision of a template which includes a set of elements as well as the types of information to be included may be useful in addressing these inconsistencies. In addition, as the EA is allowed a degree of flexibility, alternative approaches which would allow for the exploration of alternatives and their impacts may be warranted. This may allow the Forest Service to break away from the lengthy EAs which are currently being produced and provide a means for clearly articulating the information which is relevant to the decision at hand.

## **4.0 Environmental Impact Statements – *Process Requirements***

### **4.1 Are Forest Service EISs meeting process requirements?**

The CEQ and Forest Service regulations and the Forest Service NEPA Handbook establish procedural requirements that must occur in the development of an EIS. There are 19 process requirements (complete list included in Appendix A) for EISs as well as four additional elements (designated in Appendix A), which were developed as a means of qualifying unspecified NEPA requirements. Of these 23 total process elements, the EISs reviewed contained between 14.5 and 20 of these elements (Figure 4), with an average of 17.5 elements. As noted above, the coding of these elements was based on

whether the processes were summarized in the EIS document. In other words, the coding may not represent process requirements, which were in fact conducted, but were not summarized in the EIS.

**4.1.1 Which required process elements are Forest Service EISs consistently meeting?**

A summary of nearly all of the process components required of EISs were consistently included in the 13 EISs reviewed, and over half of these process requirements were completed for every decision reviewed (Table 6). Process requirements which were completed for all

decisions included the presence of an interdisciplinary approach; the presence of a NOI published in the Federal Register which invited participation, identified the timing and schedule of the decisionmaking process, described the proposed action and alternatives, included the name and address of a person within the Forest Service who could answer questions, and the title of the responsible official; a discussion and/or summary of public comments; a draft EIS comment period of at least 45 days; and the presence of public notification of NEPA-related hearings, public meetings, and the availability of environmental documents. In addition, the following process requirements were also consistently completed (completed in greater than 75 percent of the case) for the decisions analyzed: the NOI described the scoping process including scoping meetings; the Forest Service responses to public comments provided in the EIS were considered substantive; the Forest Service obtained the comments of federal agencies which have jurisdiction by law or special expertise in the decision; a draft EIS was provided at least 15 days prior to public meetings; and the scoping comment period was at least 30 days.



Figure 4. Range and Frequency of EIS Process Scores (Out of 23)

Table 6. EIS Process Requirements that were Consistently Met

Document Requirement	Percent of Sample Which Met Requirement
Interdisciplinary approach	100.00%
Notice of Intent (NOI)	100.00%
NOI invites participation	100.00%
NOI identifies timing/schedule	100.00%
NOI describes proposed action and alternatives	100.0%
NOI describes scoping process and meetings	92.31%
NOI includes agency contact	100.00%
NOI includes title of responsible official	100.00%
Discussion of comments	100.00%
Substantive response to comments	84.62%
Draft comment period of at least 45 days	100.00%
Public involvement	100.00%
Draft available at least 15 days prior to meetings	83.33%
At least 30 days for scoping comments ( <i>not required by regulations</i> )	92.31%
At least 30 days for appeal after ROD	100.00%
Public notification	100.00%
Public notice of hearings, meetings, availability of documents	100.00%

#### 4.1.2 Which required process elements are Forest Service EISs consistently lacking?

Only a small portion of the process requirements were not consistently completed (completed less than 75 percent of the time) for the sample of EIS decisions reviewed (Table 7). Of these, only two were consistently absent (present for less than 25 percent of the time) from the cases reviewed. These were the presence of time limits and the number of types of involvement activities provided (e.g. public meetings, field trips, collaborative meetings, etc.). It should be noted that although CEQ regulations encourage the setting of time limits appropriate to individual actions and they can be requested by members of the public, these are not a requirement. Although this is not a requirement, only one of the EISs reviewed contained any reference to time limits for any stage in the decisionmaking process. It should also be noted that although CEQ regulations state that the agency must "make diligent efforts to involve the public in preparing and implementing their NEPA procedures," there is no set requirement for the number of involvement activities or the number or types of activities. These elements were developed to qualify the requirement for a public involvement process. For this analysis, the threshold for a project to be considered to have a sufficient number of types of involvement activities was set at five. Although only two of the decisions analyzed had at least five types of involvement activities, the mean number of types of involvement activities was 3 and only two of the EISs did not discuss any involvement activities.

Table 7. EIS Process Requirements that were Consistently Lacking

Document Requirement	Percent of Sample Which Met Requirement
Time limits <sup>1</sup>	7.69%
Number of types of involvement activities <sup>2</sup>	18.18%

<sup>1</sup>Encouraged by CEQ regulations, not a requirement.

<sup>2</sup>Not required by regulations, assigned as a mechanism for qualifying intent.

## 4.2 Summary

The results of the EIS process analysis indicate that in the sample of EISs investigated, the majority of the required process elements were discussed. However, the following elements were met infrequently or inconsistently and warrant further discussion.

- Time Limits - Time limits were discussed in only one of the EIS reviewed. Although time limits are not required, they are recommended by the CEQ regulations. In addition, CEQ has advised that "even large complex energy projects would require only about 12 months for the completion of the entire EIS process" (CEQ, 1981). It seems unlikely that without setting time limits on the NEPA process, this aggressive time-line would be met in most instances.
- Notice of Intent - Although the NOI was completed for all of the EISs reviewed, just under half of the NOIs included a discussion of permits or licenses required to implement the proposed action. It should be noted that permits and licenses may not have been required for these decisions; however in order for the public to be clear on whether this is the case, the NOI should make note if none are required.

- Public Involvement - Some type of public involvement was undertaken for all of the EISs reviewed. However, the number of involvement activities and the number of types of these activities appeared somewhat lacking. The number of involvement activities ranged from zero to 26 with 8 being the average number of activities undertaken (with a median of 5 activities). However, six of the EISs included less than 4 activities, which gives members of the public few options for involvement in the process, especially when the activities are undertaken at set times in locations which may not be near all stakeholders. In addition, the types of involvement activities were limited, with nine of the 13 EISs noting three or fewer types of involvement.
- Public Notification - All of the EISs reviewed included a summary of the public notification provided for the availability of documents, comment periods, and involvement activities. Yet, over half of the EISs included four or fewer means of notification. These types of notification included publication of the NOI, publication in the Forest Service Schedule of Proposed Actions (SoPA), uploading of documents to the Forest Service website, publications in local newspapers, radio advertisements, etc. Due to the fact that many of these types of notification are relatively inexpensive and easy to undertake, the number of notification types appeared limited. This is especially the case when it is considered that the NOI, SoPA, and publication to the Forest Service website require previous knowledge of the project or periodic checking of these sources by interested parties to encounter these notifications.

Nearly all of the EISs included some discussion of the process components; however, the format and detail of these discussions varied widely. Although the components explicitly required in the CEQ regulations, Forest Service regulations, and Forest Service NEPA Handbook were present in nearly all cases, a handful of documents provided specific information regarding the participation process and/or structuring of this information which may be valuable to an EIS reader/participant. This information and structure included dividing the discussion of public involvement up into stages (e.g. scoping, NOI, and DEIS) and clearly describing the actions in each stage; including tables and/or lists of each individual meeting/activity, defining the type of activity, the location, and the number of attendees; and clearly describing the involvement and notification actions and what they entailed. In one case, the document provided detailed information regarding points of agreement reached during specific collaborative meetings. This level of detail did not necessarily increase the length of the section, especially when placed in the form of a table, but added a great deal in term of the clarity of the process undertaken. A clear discussion of process components may allow the reader to feel more at ease that concerns have been heard and the public has played a role in developing the alternatives and shaping the proposed action.

## **5.0 Environmental Assessments – Process Requirements**

### **5.1 Are Forest Service EAs meeting process requirements and optional elements?**

The EA process has fewer requirements than the EIS in terms of specific components that must be followed (according to CEQ regulations and Forest Service directives). For this reason, the required and optional elements are discussed separately. Optional elements include process elements that are

required for the EIS (which would also be applicable to EAs but not required) as well as those that are recommended in the environmental assessment literature.

**5.1.1 Are Forest Service EAs meeting process requirements?**

Six different process requirements were identified in the CEQ regulations, the Forest Service regulations, and the Forest Service NEPA Handbook. In general, the requirements for the EA process are that the process should be interdisciplinary and have time limits that the public should be involved, and that public notification must occur. The total process scores for EA required elements ranged from 1.0 to 5.0 of the six identified elements (Figure 5). The average number of document requirements met was 4.58, indicating that on average 76 percent of EA process requirements were met in the sample analyzed.

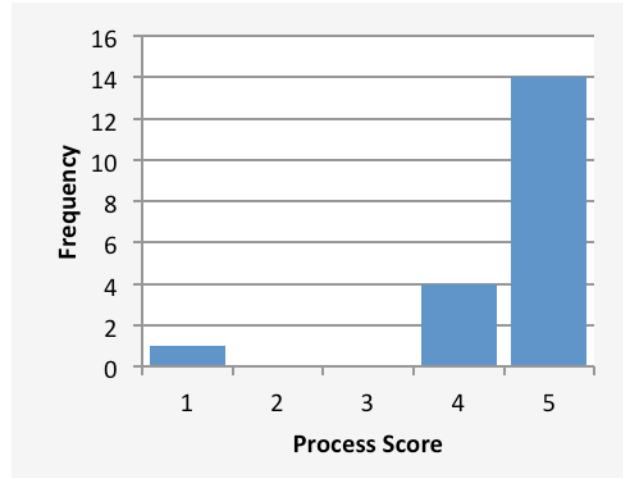


Figure 5. Range and Frequency of EA Process Requirements (Out of 6)

Which required process elements are Forest Service EAs consistently meeting?

The process for developing the EAs reviewed consistently met five of the six required process elements (Table 8). Nearly all of the EAs reviewed incorporated an interdisciplinary approach in planning and developing the proposed project (17 of the 19 EAs conducted an interdisciplinary approach) as well as provided some avenue for public involvement (18 of the 19 EAs provided public involvement). Additionally, over 90 percent of the EAs reviewed provided public notification of NEPA-related hearings, public meetings, and the availability of environmental documents. Eighteen of the 19 EAs reviewed conducted scoping processes. Of the 19 EAs reviewed, 16 provided a review or appeal period following the release of the final EA. One project was not subject to appeal pursuant to 36 CFR Part 215.12(e). This review or appeals period is required to be 30 days in length; of the sixteen EAs with this review period, 12 explicitly provided the length of this period and all were longer or equal to 30 days.

Table 8. EA Process Requirements that were Consistently Met

Document Requirement	Percent of Sample Which Met Requirement
Interdisciplinary approach	89.47%
Public Involvement	94.74%
Scoping	94.74%
Review/appeal period	84.21%
Public notification	94.74%

Which required process elements are Forest Service EAs consistently lacking?

Only one EA process requirement was consistently lacking from the EAs reviewed. None of the EAs identified time limits, which are encouraged by CEQ.

### 5.1.2 Are Forest Service EAs meeting optional process elements?

The complete set of process components used to evaluate EIS processes were used as the optional elements for an EA. There were 22 process components for the EIS, six of which were required for EAs, leaving a total of 16 optional process requirements for the EA. A complete list of the components evaluated, as well as the frequency with which these components were conducted, are included in Appendix A. For the purpose of this discussion, only the components that are consistently present or are consistently lacking in the sample are discussed.

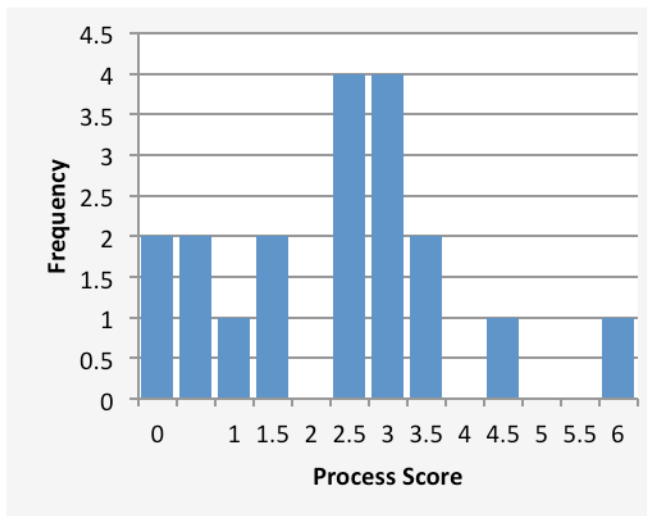


Figure 6. Frequency and Range of EA Optional Process Elements (Out of 16)

The total process scores for EA optional elements ranged from zero to six of the 16 identified elements (Figure 6). The average number of optional process elements met was 2.34, indicating that on average, 15 percent of optional EA process elements were met in the sample analyzed.

#### Which optional process elements are Forest Service EAs consistently meeting?

None of the optional process elements were consistently included in the sample of EAs reviewed (included in at least 75 percent of the EAs reviewed). The most consistently met optional process element was providing an opportunity to comment on an EA prior to making a decision (11 of the 19 EA processes had a draft comment period). Additionally, 10 of the 19 EAs noted that they obtained comments from Federal agencies that had jurisdiction by law or special expertise.

#### Which optional process elements are Forest Service EAs consistently lacking?

This discussion is focused on the components that were considered to be consistently absent from the sample of EAs reviewed (present in 25 percent of the documents or less) (Table 9). Some of the optional elements were included sporadically in the EAs reviewed (present in between 25 and 75 percent of the documents), but were not considered consistently lacking. These elements are not included in this discussion, although due to the importance of some of these elements and/or the relative ease of including them in an EA, they may be noted in the discussion of recommendations below. Process elements that were found to be consistently lacking included: presence of a notice of intent; the number of involvement activities; the number of types of involvement activities provided (e.g. public meetings, field trips, collaborative meetings, etc.); and the types of public notice provided (e.g. SOPA, website, legal notice, press release, etc.).

Table 9. **Optional EA Process Elements that were Consistently Lacking**

Document Requirement	Percent of Sample Which Met Requirement
Number of involvement activities	7.69%
Number of types of involvement activities	21.43%
Types of notification	5.56%

Although CEQ regulations state that the agency must "make diligent efforts to involve the public in preparing and implementing their NEPA procedures," there is no set requirement for the number of involvement activities or the number of types of activities. This element was developed to qualify the requirement for a public involvement process. For this analysis, the threshold for a project to be considered to have a sufficient number of types of involvement activities was set at five. Five EAs did not discuss any involvement activities. The 14 EAs that did ranged from only one activity type to six activity types, with an average of three types. Furthermore, the amount of total involvement activities ranged from one to 30 with an average of six activities.

Similarly, while CEQ regulations state that an agency must provide public notification, there is no specific number of notification types that must occur. For this analysis, the threshold for a project to be considered to have sufficient public notification the project needed to conduct five notification types. One project did not provide public notification. The range of notification types ranged from one to ten, with an average of three notification types.

## 5.2 Summary

The results of the EA process analysis indicate that in the sample of EAs investigated, the majority of the required process elements were discussed. However, recommended elements, when done were often lacking in meeting the intent of the recommendation. The following elements were met frequently or inconsistently and warrant further discussion.

- Time Limits – None of the EAs in the sample discussed time limits. The CEQ regulations indicate that the responsible agency needs to provide "a mechanism for putting appropriate time limits on the environmental impact statement process (1501.1)" and "are encouraged to set time limits appropriate to individual actions (1501.8)." This is supposed to be identified in the NEPA document. Without this information it makes it difficult for readers to identify the stages of the NEPA process the project will go through. Furthermore, without time limits, the decisionmaking process could drag on, and by the time a decision is made the information analyzed may not accurately represent the affected environment, technology, or the best available science. Providing time limits encourages decision-makers to realistically understand how long the process of analysis will take and begin looking forward to possible implementation.
- Draft EA Comments – While providing a draft EA comment period is not required, it can be an important method for obtaining public acceptance of a project. For EISs, CEQ regulations require that once comments are received, the agency must respond substantively by providing "sources, authorities, or reasons which support the agency's position and, if appropriate, indicate those circumstances which would trigger agency reappraisal or further response"(40 CFR 1503.4). Of

the eleven EAs that provided a draft EA comment period, only seven provided substantive responses to comments. These responses allow writers to ensure their comments were heard by the agency and, if necessary, that changes occurred.

- Public Involvement – The only public involvement activity required in an EA process is to provide scoping. However, it is recommended that other involvement is used to engage the public. A number of EAs reviewed discussed various recommended involvement activities that occurred; however some EAs did not provide complete information about the public involvement process. For example, often times the beginning of the scoping period would be identified but no end date was provided, making it impossible to identify how long the period lasted. Certain documents identified that *several* field trips were conducted. Without a specific number, the total amount of public involvement activities could not be calculated. In these instances, we coded the data as a zero (for those that included days) and coded several to be one involvement activity. This may mean that some of the EA process data is less than what occurred in reality, an obvious limitation to the study. While NEPA documents are not required to disclose process discussions, it is important for readers to get a full understanding of how the public has been involved with the project.
- Public Notification – Another element that was only included in one document in the sample is ensuring there is enough variety in the types of public notification provided. The majority of EAs in the sample provided one or two types of public notification, however one EA pursued a considerable amount of public notification by using ten different notification types. The average number of types of notice in the sample of EAs was 2.7, indicating that there is not a wide variety of notice being used to inform stakeholders about NEPA projects. However, this study did not investigate the *effectiveness* of different types of public notice, so it is difficult to know which methods are most effective. For example, publishing information in the Federal Register is unlikely to be effective at informing local communities about a NEPA process. The first step in engaging the public is notifying them that a project is even occurring. Without notification, stakeholders may be unaware that a project is being developed that is of interest to them. It is important to consider various audiences of the NEPA process and ensure notification activities provide information to all potential audiences.

## 6.0 Readability Recommendations

### 6.1 Are Forest Service documents (EAs and EISs) meeting readability recommendations?

Twenty-six different readability recommendations were identified in the federal PLGs and other literature. In general, the recommendations for document readability are that the document needs to be well organized, written clearly, and provide aids for clarity. The findings sections below are organized around these three major areas. The readability recommendations are applicable for both EISs and EAs; therefore, the findings here are composites of both document types.

The total scores for readability recommendations ranged from 8.0 to 17.0 of the twenty-six identified elements (Figure 7). The average number of readability recommendations met was 12.6, indicating that on average, 49 percent of readability recommendations were met in the sample analyzed.

### **6.1.1 What do readability tests indicate about the readability of Forest Service NEPA documents?**

Our findings indicate that NEPA documents written by the Forest Service are generally difficult to read, and they do not incorporate many readability recommendations. One of the

most common tests for readability is the Flesch Reading Ease Scale – or Flesch Formula (Flesch 1949). The formula uses two objective measures, sentence length and number of syllables per word, multiplied by a constant, to yield a reading ease score. The score ranges from 0 (extremely difficult) to 100 (extremely easy.) The reading ease scores for the 32 NEPA documents in the sample range from 24.5 to 40.4, or from “very difficult” to “difficult.” The easiest documents are written at the thirteenth-grade level (first year in college). The most difficult documents are written at the sixteenth-grade (college graduate). The Flesch scores demonstrate that while there is variability in scores among documents, all the scores are “difficult” or “very difficult.”

EISs are required to include a summary of the document, which is intended to provide readers with an overview of the project. For NEPA documents with summaries, a Flesch test was run on just the summary to evaluate its readability. The reading ease scores for the 18 NEPA documents with summaries ranged from 16.8 to 41.9, or from “very difficult” to “difficult.” The easiest summaries are written at the twelfth-grade level (senior in high school). The most difficult summaries are written at the nineteenth-grade level (beginning doctoral degree). These scores indicate that the document summaries are not written at a lower level than the entire document and may not clearly provide an overview for the general public.

### **6.1.2 Which readability recommendations are Forest Service NEPA documents consistently meeting? (Table 10)**

*Organization* – None of the organization recommendations are met consistently (completed in greater than 75 percent of the documents).

*Writing* – Three of the writing samples were consistently met in the sample. These recommendations are providing short sections, not using double negatives, and short paragraphs. The majority of NEPA document samples reviewed indicates that the average number of paragraph in each section was less than or equal to five – indicating the use of short sections. All of the samples of sentence writing indicated that all 32 of the documents rarely used double negatives. All of the samples of paragraphs

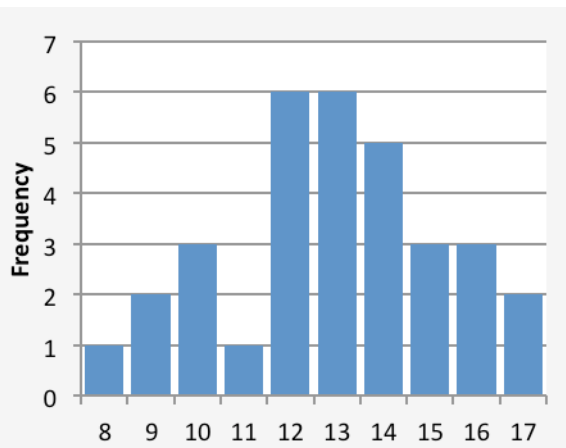


Figure 7. Frequency and Range of EIS and EA Readability Scores (Out of 26)

indicated that NEPA documents included short paragraphs (average length less than 150 words per paragraph).

*Aids for Clarity* – Vertical lists were present in all NEPA documents reviewed. This was the only aid for clarity recommendation that was consistently met in the sample.

Table 10. EIS and EA Readability Recommendations that were Consistently Met

Document Requirement	Percent of Sample Which Met Requirement
Short sections	90.63%
Percent of sentences that do not use double negatives	100.00%
Short paragraphs	100.00%
Vertical lists	100.00%

### **6.1.3 Which readability recommendations are Forest Service NEPA documents consistently lacking? (Table 11)**

*Organization* – It is recommended that documents have no more than three heading levels, and only five documents in the samples met this recommendation. The average number of heading levels for the sample is 5.7 and the number of heading levels ranges from 3 to 10.

*Writing* – Two writing recommendations were consistently lacking in the sample (included in less than 25 percent of the documents). The NEPA document samples indicated that the sentence length was consistently too long, with only five samples averaging sentence length less than or equal to 20 words per sentence. The NEPA document samples also indicate that transitions are rarely used between paragraphs in NEPA documents.

*Aids for Clarity* – The PLGs recommend various aids for clarity to enhance the ability of the reader to find information and understand the information presented in the document. Because NEPA documents often use technical terms and abbreviations, we analyzed the sample to indicate if there was a glossary or a list of common acronyms or abbreviations in each document. Seven (21.9 percent) documents included glossaries, while only three (9.4 percent) included a list of common acronyms or abbreviations.

Readability literature recommends that “as you begin to examine the data collected from the technical reports, consider using visual displays to present the information.” Also including tables can convey a lot of information in a simple matter. However, just the presence of graphics and tables is not enough to enhance readability. Graphics and tables are recommended to have appropriate titles and require explanations to ensure they are understood and relevant to the subjects being discussed. The number of graphics ranged from 0 to 45 with an average of 11.9. The number of tables ranged from 0 to 159 with an average of 46.3. Graphics and tables were labeled with appropriate titles in 71.9 percent of the sample and 62.5 percent of the sample provided clear explanations for graphics and tables.

Sidebars are useful tools for readers because they highlight important information in a document (Jones, et. al., unpublished). Sidebars can be used to define unfamiliar terms or concepts, refer readers to additional information sources, highlight or reinforce important points, or identify project benefits and adverse effects (WSDOT, 2008). Only three documents (9.4 percent) in the sample used sidebars.

Table 11. EIS and EA Readability Recommendations that were Consistently Lacking

Document Requirement	Percent of Sample Which Met Requirement
Question headings	0.00%
Number of heading levels	15.63%
Used outline headings	18.75%
Short sentences	15.63%
Paragraph transitions	3.13%
Glossary	21.88%
List of common acronyms/abbreviations	9.38%
Sidebars	9.38%
Number of graphics	3.13%
Type of page number system is clear	21.88%

#### **6.1.4 Are there differences in use of readability recommendations between Forest Service EISs and EAs?**

There are a few evident differences in readability between EISs and EAs. The number of graphics and tables in EISs averages higher than the number in EAs (17.8 versus 4.9 for graphics and 76.9 versus 25.4 for tables). This is not surprising considering that EISs are often longer than EAs, giving more space for the use of figures and tables.

Two readability recommendations were found only in EISs – sidebars and list of common acronyms and abbreviations. Another five readability recommendations were used considerably more often in EISs than EAs including: the page numbering system, use of outline headings, presence of the chapter title on each page, a roadmap at the beginning of the document, and a comparison of effects table.

#### **6.2 Summary**

The results of the document analysis for readability measures indicate that NEPA documents written by the Forest Service are difficult to read and that they do not incorporate many readability recommendations. The Flesch scores demonstrate that while there is variability in scores among documents, all the scores are “difficult” or “very difficult.” Most of the recommendations to enhance readability from the PLGs and other literature were not incorporated into the documents in the sample. There were four recommendations that the Forest Service did score well on – short sections, avoidance of double negatives, short paragraphs, and the use of vertical lists. Each of these recommendations was used by greater than 75% of the sample.

In all three areas of readability, the Forest Service NEPA documents did not use the majority of recommended practices.

*Organization* – The NEPA documents in the sample generally used too many heading levels. Headings were often inconsistent in formatting and use within some individual documents, with each chapter appearing to have a new or adapted heading structure. Headings provide an effective way to instruct the reader on how the document is organized. Inconsistent headings can disrupt the reader’s ability to understand the document’s organization and cause confusion.

Five recommendations were developed from the literature review. The first is having the chapter title on every page of the document. This makes it clear to the reader what chapter they are reading and increases a reader's ability to skim a document for certain chapters. In the sample, only 12 (37.5 percent) documents provided the chapter title on every page.

The second recommendation involves the use of outline headings. Outline headings provide either numbers or roman numerals before each heading to indicate the chapter and section the heading corresponds to. Using outline headings can enforce to readers where they are in reading the document, and also help ensure that headings are formatted consistently. In the sample, six (18.8 percent) documents used outline headings.

A third recommendation is to write headings that identify specifically what the section is about. What often occurred in the sample is for headings to be devoid of information. For example, in the Affected Environment and Environmental Consequences chapters, many resource areas are discussed. Each resource area discusses the same components. It is easy to confuse which "direct effects" section you are looking at, considering there could be 15 sections called "direct effects" in one document. Including headings that identify more than just "direct effects" – such as "Air Quality Direct Effects of Alternative A" – would make it easier for readers to identify what they are reading and why the information is important.

The fourth recommendation is providing a roadmap at the beginning of the NEPA document that identifies where certain information is present. A roadmap is useful because it allows readers who may not be familiar with NEPA to identify what chapters, such as "purpose and need," actually discuss. Providing brief descriptions of what each chapter will cover is beneficial to readers and enhances their ability to find the information they wish to obtain. In the sample, 22 documents (68.8 percent) used a roadmap at the beginning of the document.

The final recommendation about organization deals with how the document's pages are numbered. Two documents used new page numbers for each chapter of the document. This system was often confusing because page numbers were repeated and it became difficult to find document sections. Seven documents restarted page numbers with each chapter but provided the chapter number before the page number. This did improve identifying document sections; however, this system could also be confusing. Twenty-three documents did not restart page numbers with each chapter.

*Writing* – The sample of NEPA documents indicates that the Forest Service is variable in how documents are written to enhance readability. The writing in the NEPA documents in the sample indicates that passive voice is used more often than active voice. The PLGs highlight that passive voice obscures who is responsible for what and creates ambiguity. Often, sentences in Forest Service NEPA Documents do not have the subject-verb-object close together. The natural word order of an English sentence is subject-verb-object (PLGs). When too many modifiers, phrases, or clauses are put between two or all three of these essential parts of a sentence, it becomes much harder for the reader to understand.

The PLGs identify that having topic sentences and transitions between paragraphs enhances readability. In both cases, the use of topic sentences and transitions in NEPA documents was insufficient to guide

readers from thought-to-thought. Without topic sentences and transitions, it is easy for a reader to lose the main point of what they are reading.

*Aids for Clarity* – In the sample of NEPA documents, it is apparent that not enough aids for clarity were used. The technical nature of NEPA documents requires that technical terms and acronyms are used. However, these terms and acronyms need to be defined so that readers know what they mean. Furthermore, having this list in one location makes it easy to reference while reading the document. One of the key recommendations to doing this is by offering a glossary and a list of common acronyms or abbreviations. These two aids make it easy for readers to inform themselves what terms or acronyms mean. However, these aids were rarely used in the sample of NEPA documents we analyzed. Many documents used multiple acronyms that were similar to one another, making it very difficult to track which was which. If a list of acronyms is not included in the document the reader must try to find the first time the acronym is used to identify what it stands for. However, sometimes this is impossible. In one document, an acronym was used more than ten times before it was defined.

## 7.0 Summary and Conclusions

Our study focused on a sample of NEPA documents, and it is clear that documents alone do not constitute an effective or adequate NEPA process. NEPA documents are a key component of the NEPA process, and they must be considered in conjunction with the entire NEPA process that provides the context for each document. With this caveat in mind, the Forest Service NEPA documents in our sample were fairly consistent in the inclusion of required items. However, several items stand out that could be addressed in future NEPA document preparation efforts.

*Document Length.* All of the documents (EA and EIS) were longer than recommended. However, simply shortening the document is not the answer. As our document quality and readability analysis shows, documents should include required elements at a minimum, and attempt to incorporate readability elements. For example, the shortest four EAs in the sample have an average quality score of 33.5 compared to the longest four EAs with an average quality score of 43.5. Looking at readability, the four shortest EAs have an average readability score of 8.88 compared to 13.13 for the four longest EAs. We identified other differences in readability between EISs and EAs. The amount of graphics and tables in EISs is on average higher than the amount in EAs (17.84 and 4.89, respectively for graphics and 76.92 and 25.42, respectively for tables). This is not surprising considering that EISs are often longer than EAs so there is more space for the use of figures and tables. NEPA documents cover complex and technical issues that require full explanation in order to create understanding. While the length of a NEPA document should be considered, and excess information that is not useful needs to be cut from the document, length alone should not dictate how a document is produced.

*Navigation.* Navigation of documents can be improved by including many of the required and recommended elements (e.g. index, complete table of contents, lists of acronyms and abbreviations, glossaries, etc.), as well as including readability elements (complete headings, an outline structure, clear page numbering structures, a document roadmap, etc.). Incorporating some of the key readability items, while not required, would do much to improve the quality and usefulness of NEPA documents. For

example, it would be fairly easy to provide a roadmap at the beginning of the document that identifies where certain information can be found. Providing brief descriptions of what each chapter will cover is beneficial to readers and enhances their ability to find information. In the same way, simply including the chapter title on every page of the document makes it clear to the reader what chapter they are reading and increases their ability to skim a document for certain chapters. Document page numbering is also an easy fix. Two of the documents in our sample used new page numbers for each chapter of the document. This system was quite confusing because page numbers were repeated and it became difficult to find document sections. In addition, outline headings provide either numbers or roman numerals before each heading to indicate the chapter and section the heading corresponds to. Using outline headings can remind readers where they are in the document, and ensure that headings are formatted consistently. The headings should be written so that they identify specifically what the section is about. Many of the headings in the documents in our sample were simply devoid of information.

*Supporting Conclusions.* Although the majority of the EIS and EAs met most of the document requirements, some interesting issues became apparent upon closer reading through the sample. First, in several cases claims were made without providing evidence in support. Below is an example from an EIS document.

Vegetation patterns and occurrence within the analysis area are different now than what existed historically. Changes to the health, structure, composition, distribution, and function of forest stands have altered the natural processes that maintain a viable ecosystem. This has affected vegetative resiliency, wildlife habitat diversity and amount, water quality, visual quality, fuel loadings, and potential fire behavior (pg. 2).

The document states that vegetation patterns are different, but does not explain what that difference is. The document also claims that certain processes have changed but does not indicate how or provide evidence for this claim. Without evidence, it is not surprising that readers may be skeptical of claims made in the document, and question the science behind them. Other documents in the sample included graphs and actual numbers as evidence to support the claims being made.

Second, in some Purpose and Need sections, it was difficult to clearly understand why and for what reason a project was proposed. The Forest Service indicates that a purpose and need statement “defines the scope and objectives of the proposal [and] describes in detail why action is being proposed at that location and at that time.” This section is the persuasive notion of an EIS/EA; it must provide the evidence and the argument for why a project is proposed. If a reader reads this section and cannot identify why the project is being proposed, then the objective of this section is forgone. While not all EISs/EAs had this problem, a number in the sample produced more questions after reading the Purpose and Need rather than answering them. Writers of this section should work to ensure that while they know why a project is proposed, that the reasoning is both clear and evidence based so that a broader audience can understand.

*Document Structure.* The EA documents did not display alternative document structures, in spite of the fact that there are no firm requirements for an EA structure. The language provided in the USFS

guidance and CEQ regulations states that an EA "may be prepared in any format useful to facilitate planning, decisionmaking, and public disclosure as long as the requirements of paragraph (b) are met" (the 13 required components). This suggests a great deal of flexibility in the development and design of EA documents. Instead, we observed a pared-down version of the strict requirements of the EIS, as well as formatting and content that was clearly based on the EIS requirements. It is clear that many of these EIS components are useful in EAs; however, it is possible that opportunities for flexibility and creativity in the creation of EA documents have been missed. In most cases, even the areas which were found to be consistently lacking in EAs were the same areas which were least often present in the EIS.

*Audiences.* Finally, it is critical to think about the audiences for a NEPA document. While NEPA's language implies that anyone can and should have access to NEPA documents, it is unlikely that this broad of an audience actually engages with these documents. In theory, if the document writer understands the audience, they will be able to produce documents that effectively communicate to that intended audience. However, the numerous and varied audiences who engage with NEPA documents have very different purposes for reading these documents. This makes it difficult to produce a document that fulfills each audience's needs. By incorporating required elements as well as readability recommendations into NEPA documents, it is possible to effectively meet multiple audiences' needs. Few studies have focused on the readers of NEPA documents, and it would be beneficial to study these different audiences to understand the reasons they read NEPA documents, the types of information they are looking for, and their thoughts on readability. That knowledge of audience, combined with efforts to include required and recommended elements, as well as readability elements, could serve to improve everyone's experience with NEPA documents.

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