

**CONSERVATION DEMOCRACY:
ECOLOGY, PUBLIC PARTICIPATION, & UNITED STATES
NATIONAL FOREST MANAGEMENT UNDER
THE HEALTHY FOREST INITIATIVE**

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ABSTRACT

Andrew Lawrence George
Conservation Democracy: Ecology, Public Participation, & United States
National Forest Management under the Healthy Forest Initiative
(Under the direction of J. Robbie Cox)

National forest management in the United States has traditionally included public participation in agency decision-making. Under the Bush Administration's 2002 Healthy Forest Initiative, the rules governing citizen involvement were substantially modified. A consequence of this was that the U.S. Forest Service was able to propose more commercial forestry in U.S. National Forests with less public oversight and environmental review previously mandated by the National Environmental Policy Act. This combined with other policy changes allowing use in sensitive areas with "extraordinary circumstances" that were previously off-limits to commercial activity. This North Carolina case study explores the effects of the Healthy Forest Initiative on citizen participation and environmental management in the Pisgah, Nantahala, Croatan, and Uwharrie National Forests.

For my wife, Courtney, who never doubted me, even when I did.

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about the wise council Dr. Peter White brings to a committee, and I am very happy I took his Conservation Biology course and brought him into this social-science, policy oriented dissertation work.

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LIST OF ABBREVIATIONS AND SYMBOLS

Abbreviations

APA	Administrative Procedures Act
ARA:	National Forest Decisionmaking and Appeals Reform Act
AFPA:	American Forest & Paper Association
BLM	Bureau of Land Management
CM	Collaborative Management
CB	Conservation Biology
CE	Categorical Exclusion
CEQ	Council on Environmental Quality
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FACA	Federal Advisory Committee Act
FEMAT	Forest Ecosystem Management Assessment Team
FLPMA	Federal Land Planning and Management Act
FOIA	Freedom of Information Act
Forest Service	United States Forest Service
FORPLAN	Forest Planning Assessment Software
GAO	General Accounting Office
GIS	Geographic Information System
HFI	Healthy Forest Initiative
HFRA	Healthy Forest Restoration Act of 2003
LWCF	Land and Water Conservation Fund
LRMP	Land and Resource Management Plan
MIS	Management Indicator Species
MUSYA	Multiple Use, Sustained Yield Act of 1960
NEPA	National Environmental Policy Act
NFMA	National Forest Management Act of 1976
OIG	Office of Inspector General
OTA	United States Office of Technology and Assessment
PETS	Proposed, Endangered, Threatened, Sensitive
PILT	Payment in Lieu of Taxes Act of 1976
QLG	Quincy Library Group
RCW	Red Cockaded Woodpecker
RPA	Forest and Rangeland Renewable Resources Act of 1974
SPB	Southern Pine Beetle
USDA	United States Department of Agriculture
USDI	United States Department of Interior

Symbols

χ^2	Chi Square
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CHAPTER ONE: DEMOCRATIC THEORY, CONSERVATION, & UNITED STATES NATIONAL FORESTS

INTRODUCTION

Although there is consensus among most scholars regarding the legitimacy of democratic governance in United States National Forest management, there is less agreement over which democratic theory most adequately describes the actual structure or process of public participation involved in a specific decision. There is even less known about the environmental outcomes from those decisions. In the spirit of the Carolina motto, *Lux Libertas*, this dissertation attempts to shed light on these important topics.

Unlike the centuries-old experiment with democratic rule, direct citizen involvement in resource management decisions emerged in the environmental era of the 1970's. Today, democratic theory provides an opportunity to explore the relationships between decision-making processes and their environmental consequences. Through an interdisciplinary approach, this dissertation develops an understanding of the process embodied in the Bush Administration's Healthy Forest Initiative.

This dissertation focuses on four democratic theories (elite, pluralist, deliberative, and agonistic) discussed in the policy and conservation literature that address U.S. Forest Service decision-making and environmental management. Presently, these include schools of thought about the rule of the *demos* (the common people) in modern Western liberal democracies: Elite democratic theory (Locke 1690; Madison 1723), Aggregative Pluralism (Dahl & Lindblom 1953, 1956), Deliberative Democracy (Rawls 1971; Habermas 1970, 1975), and Agonistic Pluralism (Mouffe 1999, 2000). Each theory corresponds with distinctly different operational management processes for public participation and U.S. National Forests (National Forests), including traditional resource management (Pinchot 1949), interest group representation (Lowi 1965; Stewart 1975), collaborative management (Gray 1989; Wondolleck 1988, 1998; Leach et al. 2002) and direct, dissent-based conservation (Peterson et al. 2005; Cox 2007).

Traditional “elite” democratic theory advocates limits on citizen participation, to elections. After a vote, according to this view, governance is rightly controlled by professionals who make technical decisions to ensure economic and political stability. Under the elite model, citizen involvement ends after elections install social elites who are entrusted with the control over governance (Schumpeter 1947, Mouffe 1999). The other three more recent theories emerge from a separately defined category of “classical participation,” which calls for active citizen involvement in governance, or the “maximum public participation in all facets of political life” (Steelman 1996:1). Under the ancient Greek or Jeffersonian understanding, classic participatory democracy

includes both instrumental and substantive benefits of involvement for the individual and the public. This dissertation uses elite, pluralist, deliberative, and agonistic theory to analyze federal land decision-making in the United States and document ecological consequences of that management.

RESEARCH QUESTION

Formally stated, this dissertation explores “Which democratic theory most accurately describes the Bush Administration’s Healthy Forest Initiative decision-making process, and how did the prevailing process affect forest management in North Carolina’s national forests?” Given the four competing democratic theories and their value for understanding conflict-ridden environmental management, this dissertation is designed to explore which democratic theory most adequately explains the decision-making processes and public participation characteristics under the Healthy Forest Initiative. Furthermore, this study attempts to quantify how the prevailing decision-making process affected forest management in U.S. National Forests using case study analysis from North Carolina’s Croatan, Nantahala, Pisgah, and Uwharrie National Forests.

DEMOCRATIC THEORY

Elite Democracy – Traditional Administrative Management

There is much debate in the conservation and resource management literature on the question of which democratic theory most adequately explains the proper role of public participation in decision-making for land management. Traditional resource

management literature weighs heavily toward the elite theory (Allen & Gould 1986; Twight & Lyden 1989). This political philosophy was first introduced, broadly, in the United States by James Madison, during the country's founding; it was later enshrined in the late 19th century by Gifford Pinchot and Progressives, who called for strict technocratic professional expertise to guide the formation of public lands. Although the traditional elite structure came under challenge during the "participation explosion" of the 1960's (Almond and Verba 1963:3), this democratic theory recently experienced resurgence under the George W. Bush Administration (Manring 2004; Teich et al. 2004; McCarthy 2005; Vaughn & Cortner 2005).

Aggregative Pluralism – Interest Group Representation

During the 1960's, the elite model was eclipsed, in the literature, by aggregative pluralism as the dominant democratic structure for conservation and management (Schumpeter 1947; Dahl & Lindblom 1953, 1956, 1965). This form of participation emphasizes interest group representation in a political arena. Like elite democracy, the originators of aggregative pluralism reject the legitimacy of participation by individual citizens. Under this democratic model, special interest groups compete with each other in a politically accountable forum without interference from individual members of the general public.

Deliberative Democracy – Collaborative Management

Today, aggregative pluralism has come under criticism from proponents of emergent participatory theories emphasizing active participation by individual citizens and stakeholders who are perceived to be increasingly alienated by insular and conflict-

ridden forms of interest group representation. One of these contending theories is deliberative democracy (Rawls 1970, Habermas 1975). This theory, embraced by proponents of collaborative management (Gray 1989, Wondolleck 1996, 1999), is defined by the adherence to consensus-models, free discourse, and rationality to achieve ethical agreements (Calhoun 1992; Benhabib 1996; Chambers 1996; Dryzek 2000).

As a departure from interest group negotiations, deliberative theorists approach management decisions with “fair conditions” for debate. According to deliberative theorists, these conditions include Habermas’ “ideal speech situation” (1975) and Rawls’s “public reason” (1970) as an antidote to the conventional contentious decision-making. Presently, the resource management literature contains a collective wave of interest in collaborative decision-making, especially with regard to its application to environmental conflicts, yet empirical research on the environmental outcomes from collaboration is significantly lacking (Koontz & Thomas 2006).

Agonistic Pluralism – Dissent-Based Conservation

The fourth and most recent decision-making structure described in the democratic and conservation literature is Agonism (Laclau & Mouffe 1985; Connolly 1991; Honig 1993) or Agonistic Pluralism (Mouffe 2000). These theorists address the role of conflict and direct participation, including forms of dissent-based conservation (Petersen MN et al. 2005, 2006, 2007; Cox 2007; Petersen T et al. 2007). Like deliberative democracy, agonism emphasizes direct participation and the ascendancy of individual citizens in agency decision-making. However, agonism’s distinctive central

contribution is the attention to the inevitability of conflict, (Arendt 1971; Connolly 1991; Honig 1993; Mouffe 1999, 2000). These “ineradicable antagonisms” in Western liberal-democratic societies are perceived as barriers to consensus-based deliberation or interest group compromise (Mouffe 2000). Instead, dissent-expectant agonistic theorists accept the intractability of conflict in environmental decisions and calls for direct confrontation over scientific claims. These conflicts require individuals to “challenge assumptions, debate scientific claims, identify areas of disagreement, and critically examine participants’ reasoning” (Peterson MN et al. 2006:576) through direct contest or argumentation. The purpose of this atmosphere of contest and challenge is perceived to be the most effective way to arrive at the most democratically healthy outcome.

Political theorists explain the tension between competing uses and demands as an inherent conflict within Western liberal-democratic governments. This innate tension divides popular sovereignty of the majority and the liberty of private interests and individuals. Given the nature of conflict in environmental management, agonistic democratic theorists and dissent-based conservationists call for navigating inherent tension between private interests and popular sovereignty by acknowledging this “democratic paradox” (Cox 2007; Peterson MN et al. 2007). Agonism and “dissent-based conservation” (Peterson MN et al. 2006:576) help develop an understanding of controversy surrounding “multiple-use” management for U.S. National Forests by acknowledging intractable aspects of conflict in resource management debates (Twight

& Lyden 1989, Coggins 1999; Moote and MaClaran 1997; Peterson MN et al. 2005, 2006, 2007; Peterson T et al. 2006).

Since the founding of the U.S. Forest Service, public and private interests have wielded political and economic power, aiming to influence control over decision-making (see Chapter Four). Much controversy surrounds the agency, which began in 1881 as the Bureau of Forestry and evolved into the modern U.S. Forest Service (Forest Service) under the U.S. Department of Agriculture. Currently, the agency manages 155 national forests, 20 national grasslands, and 222 research and experimental forests on 192 million acres of public land. Today, the clash over competing and incompatible multiples uses of U.S. National Forests provides rich material for an exploration of conflict over environmental decision-making.

FOREST MANAGEMENT

Policy-makers began experimenting with participatory democratic processes the “environmental era” beginning in the late 1960’s (Andrews 1999), after several high-profile environmental controversies captured public attention. These include the discovery of aminotriazole—a potent carcinogenic herbicide— in shipments of cranberries in 1959 (Dunlap 1981; Lear 1997); deformities found in newborn children from the drug thalidomide used by pregnant mothers (Dunlap 1981); radioactive Strontium-90 in the teeth of infants (Dunlap 1981:102), and findings in Rachel Carson’s *Silent Spring* (1962) addressing carcinogenic and deleterious affects of industrial chemical pollution on wildlife and humans. These and other high profile environmental issues created a public backlash that moved the U.S. Congress to pass, and President

Nixon to sign the National Environmental Policy Act of 1970 (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982) (NEPA). NEPA was the nation's first statutory law guaranteeing environmental analysis and public participation for major federal actions. Today, NEPA's procedural requirements are intended to guide Forest Service management (see Appendix A & B).

During this time, many federal agencies came under increased scrutiny, including the Army Corps of Engineers (Maass 1950), the Bureau of Land Management (Foss 1960), the Soil Conservation Service (Morgan 1965), and the Tennessee Valley Authority (Selznick 1949). Although the Forest Service originally claimed exemption from NEPA, public outcry over federal land policy culminated with pivotal political and legal events highlighting controversial Forest Service commercial logging practices.

Until the 1960's, the Forest Service was known as a corps of professional foresters forged during the Progressive era, which emphasized expertise-based, technocratic decision-making (Steelman 1996). However, with the publications of *The Bolle Report* (1970) and *The Church Guidelines* (1971), as well as the federal district court ruling on *Izaak Walton League v. Butz* (522 F.2d 945 4th Circuit, 1975), a groundswell of opposition was directed toward the agency and its adherence to the traditional "elite" administrative model (Sax 1971, 1975; Stewart 1975; Jones and Taylor 1995; Hirt 1994, Andrews 1999; Steelman 1999, Hays 2007).

More specifically, the public reacted to Forest Service monoculture plantation farming and industrial clearcutting in national forests, which were forms of commercial

forestry the agency embraced since the post-World War II housing boom (Hirt 1995).

The Bolle Report criticized the Forest Service's commercial forestry management in Montana's Bitterroot National Forest, including logging on steep-slopes, terracing, and plantation tree-farming (Bolle 1970). *The Church Guidelines*, named for Senator Frank Church (1971), recommended the end of clearcut logging in "highly scenic land, land with fragile soils, land with low reforestation potential, and land where reforestation or environmentally acceptable harvesting would be uneconomical" (Wilkinson 1992:142).

The third pivotal event was *Izaak Walton League v. Butz* (552 F.2d 945, 4th Cir. 1975) (*Monongahela*), a significant Fourth Circuit District Court decision—like the *Bolle* (1970) and *Church* (1971) publications—challenging fundamental assumptions about the traditional elite decision-making structure for Forest Service management of national forests. The *Monongahela* ruling enjoined the agency from logging in the Monongahela National Forest and throughout the Fourth Circuit, which included all the national forests in West Virginia, Virginia, North Carolina, and South Carolina.

Public Participation

As a judicial check to elite decision-making, the *Monongahela* decision created a political vacuum that the U.S. Congress filled in 1976 by passing the *National Forest Management Act* (NFMA) (16 U.S.C. §1604(6)(3)(E)-(F)). Congress rewrote federal law to balance competing demands for conservation and resource extraction, which meant striking a compromise that created the first opportunities for citizens to actively participate in Forest Service planning and management (Fortenbery & Harris 1983; Parent 1992; Andrews 1999). Although the Forest Service considered itself exempt from

NEPA's statutory protections, the passage of NFMA established—for the first time—the legally guaranteed requirement for citizen involvement in long-term planning and forest-wide management in national forests (Hirt 1994; Andrews 1999).

Although NFMA established the right of citizen participation in the creation and revision of forest-wide plans, the public was not formally involved in the implementation of those plans at the site-specific, project-level until 1992 when the U.S. Congress passed the National Forest Decision-making and Appeals Reform Act (ARA) (Pub. L. No. 102-381, § 322, 106 Stat. 1419 (1992) (codified at 16 U.S.C. § 1612)). This new law codified the right of citizens to be notified, comment, and permitted to file administrative appeals challenging particular project-level decisions. Although the agency had an objection process since its founding in 1905, the formal administrative appeals process was not guaranteed until 1989, when U.S. Senators, provoked by a 1989 Forest Service proposal to eliminate the appeals process, passed the only statutory protections specifically guaranteeing these kinds of challenges to federal agency decisions (Coulombe 2004).

Most conservation scholars agree that statutory requirements for public participation have opened Forest Service decision-making to more ecological, non-consumptive considerations (Baldwin 1992; Kessler et al. 1992; Jones & Mohai 1995; Jones & Taylor 1995), facilitated direct exchange with decision makers (Moote and McClaran 1997), and promoted accountability by federal agencies (Kaufman 1960; Coggins 1999; Manring 2004). Forest-wide policies requiring citizen involvement in agency decision-making have contributed to moving “the Forest Service toward the

adoption of the ecosystem-based policy of sustainable forest management that now better reflects public values and scientific opinion” (Manring 2004:70), which leads to “more ecologically sensitive and socially acceptable project designs” (Teich et al.: 2004:15). Other authors have asserted that citizen oversight and participation have compelled “the Forest Service to comply with environmental laws and regulations” (Manring 2004:62) and adhere to environmental laws more closely (Baldwin 1992:2).

Today, there is almost universal agreement among both conservation and resource management scholars that citizen participation (through group representation and independent participation of individuals) has transformed the Forest Service over the past 40-years. There is little empirical research, however, documenting the role of this public input for site-specific project-level decisions (Mohai 1987; Teich et al. 2004). Among the notable exceptions is an independent study of public participation at the project level (although not addressing ecological outcomes) conducted by Teich, Vaughn, & Cortner (2004), who demonstrated that the comment and appeals process is most commonly used by unaffiliated private citizens and public conservation organizations (2004:16). These traditionally underrepresented groups (Stewart 1975; Twight & Lyden 1989; Jones and Mohai; 1995; Steelman 1999; Overdevest 2000) filed comments and appeals to challenge resource extraction projects more than any project-type (Teich et al. 2004:17). Therefore, the citizen comment and administrative appeal process provides opportunities for underrepresented individuals and groups to directly participate in national forest management at the site-specific project level.

Healthy Forest Initiative

On August 22, 2002, President George W. Bush announced changes to established policies for public participation and environmental analysis in national forest decision-making to address perceived management gridlock that was producing unhealthy forest conditions ripe for large wildfires and insect outbreaks. This regulatory package, called the “Healthy Forests: An Initiative for Wildfire Prevention and Stronger Communities,” commonly known as the Healthy Forests Initiative” (White House 2002) was proposed as a way to address an alleged “analysis paralysis” and “process predicament,” (Bosworth 2002) by removing the ARA’s notice, comment (36 C.F.R. § 215.4(a)), and administrative appeals process (36 C.F.R. § 215.12(f)) for expedited management projects. This restriction on public participation, commonly known as the “Appeals Rule,” also included a long list of other policy changes (described in Chapter Six).

The HFI relied on a special class or permit system, called “Categorical Exclusion” (CE), for project-level management actions that are exempted from NEPA’s conventional Environmental Assessment (EA) or Environmental Impact Statement (EIS) process. Federal regulations define categorical exclusions as “a category of actions which do not individually or cumulatively have a significant effect on the human environment” (40 CFR 1508.4). In addition to the existing CE’s used by the Forest Service, the HFI Appeals Rule also applied to five new classes of CE’s for “Hazardous Fuels Reduction” (CE 10), “Post-fire Rehabilitation” (CE 11), “Limited” commercial logging (CE 12), “Salvage” logging for weather-related disturbance (CE 13), and “Sanitation” logging related to insect outbreaks (CE 14). The Forest Service’s use of CE’s is highly controversial

(Moriarty 2004, Vaughan 2006; GAO 2007, Sutley 2010).

The HFI regulation changes modified the spatial and temporal scales of public participation in federal lands planning (Manring 2004) by reducing the days for comment, eliminating environmental analysis, and, in some cases, requiring face-to-face collaborative management or deliberation. Specifically, the HFI eliminated the longstanding guarantee for public participation in forest-wide planning (NFMA, 36 CFR 217), as well as the requirement for notice, comment, and administrative appeal for project-level decisions (ARA, 36 CFR 215). In some cases, existing public participation processes were replaced with “cooperative conservation” (Bush 2004) planning processes that rely on collaborative management procedures (CE 10; Stewardship Contracts).

In 2005, the U.S. 9th Circuit of Appeals ruled in favor of environmental plaintiffs (CIV F-03-6386 JKS, 2005) (*Earth Island v Ruthenbeck*) and invalidated several components of the HFI regulations, including portions of the Appeals Rule. On March 3, 2009, the U.S. Supreme Court threw out the 9th Circuit judgment on a 5-4 decision based on a technicality (standing) and reinstated the HFI (*Summers V. Earth Island Institute* (No. 07-463) 490 F. 3d 687)). Following the U.S. Supreme Court ruling, the Forest Service reinstated the HFI public participation regulations in July of 2009. On December 19, 2009, the case has been resubmitted in federal court once again.

The current study seeks to take advantage of fluctuations in regulatory regimes that create the conditions for a rare natural experiment in which public participation requirements were suspended for approximately three years before federal courts

invalidated the policy. Nationwide, the Forest Service used these new regulations to exempt over 72 percent of the project-level decisions between 2003 and 2005 (GAO 2007). This study explores the specific management projects (n=67), as well as the public participation in those decisions, to gain a better understanding of the decision-making and ecological consequences of the HFI.

SELECTION OF NORTH CAROLINA'S CROATAN, NANTAHALA, PISGAH AND UWHARRIE NATIONAL FORESTS

The Healthy Forest Initiative's emphasis on CE projects requires a research design that addresses the implementation of site-specific participation and environmental outcomes. According to the GAO (2007), from 2003-2005 the Forest Service proposed 633 CE projects covering 1,600 acres in the Southeastern U.S. (Region 8), which represents the largest number of projects and total acreage when compared to any other Forest Service region in the country. Of all the CE's issued nationwide from 2003 through 2005, for example, the GAO found Region 8 accounted for over 29 percent of the vegetation management CE projects conducted nationally. The GAO also showed the number of CE's proposed from 2003 through 2005 in North Carolina (n=32) was well above the national average (20).

North Carolina's 1,251,710 million acres of national forests also contain the most representative sample of geographic and demographic variation among the four forests covering the Southern Appalachian Blue Ridge Mountains, the Piedmont, and the Coastal region. No other state in the region contains forest types from each of the

available Blue-Ridge, Piedmont, and Mid-Atlantic Coastal eco-regions. The state also has highly-populated cities within a few hours driving distance of each forest, including the Pisgah National Forest, which is ranks second behind the Angeles National Forest in California as the most heavily visited national forest in the country.

Figure 1. North Carolina National Forests Adapted from the US Forest Service.



Within the Blue Ridge Eco-region, the Nantahala and Pisgah cover 1,041,451 acres. The Pisgah National Forests (510,119 acres), was sold by the Vanderbilt family in 1916 as part of the first tract of land purchased under the *Weeks Act* (see Chapter Four). Today, the forest is divided into the Appalachian, Pisgah, and Grandfather Ranger Districts. The Nantahala National Forest, created in 1920 as part of the *Weeks Act* in western North Carolina, is the largest federal forest (531,338 acres) in the state. Until 2006, the Nantahala National Forest was divided into the Highlands, Tusquitee, Cheoah, and Wayah Ranger Districts. After the consolidation, the new Nantahala District was formed when the Forest Service merged the Highlands Ranger District in Macon,

Jackson, and Transylvania counties with the Wayah Ranger District adjacent to the Cherokee Indian Reservation in Macon, Swain, and Jackson counties.

Although these national forests were substantially logged at the beginning of the 20th century (Hays 1959), a May 2000 a report on “Old-Growth Forest Communities in the Nantahala-Pisgah National Forest,” compiled by Rob Messick, documented 77,000 acres of old growth forests in the Pisgah and Nantahala National Forests (Davis 1996). Additionally, a report entitled “The Southern Appalachian Assessment” (1996) documented 32 inventoried roadless areas totaling 152,378 acres in the national forests. “Twenty-one of these roadless areas include a total of 28,506 acres of old growth. Thus, 37% of the delineated Nantahala-Pisgah old growth lies with inventoried roadless areas” (Davis 1996).

Established in 1936, the Croatan National Forest occupies 159,886 acres in North Carolina’s Mid-Atlantic Coastal Plain (Griffith et al. 2002). Given that the forest is smaller than most districts found in the national forests in the Blue Ridge Eco-region, the Croatan has only one ranger district by the same name. In an area was once dominated by longleaf pine savanna, the forest has become a patchwork of pine-plantations and second-generation longleaf stands (Frost 2000). Previous logging and fire-suppression activities have replaced the native systems with tightly managed crops of loblolly pine, although scattered longleaf pine and pond pine forests remain (Frost 2000).

The 50,373-acre Uwharrie National Forest (Uwharrie) was first purchased by the federal government in 1931, and was officially proclaimed national forest land in 1961.

The Uwharrie is in Montgomery, Randolph, and Davidson Counties in the Carolina Slate Belt of the Piedmont eco-region (Griffith et al. 2002). Although it is the smallest federal forest in state, it contains Uwharrie Mountains, which geologists consider some of the oldest mountains in North America, created from an ancient chain of volcanoes. This forest is substantially managed for commercial forestry, off-road vehicle use, biking, and hunting.

National Forests in North Carolina also have unique histories with respect to controversial Forest Service management, including an appeal over the 1987 Forest Planning process (Syden 1998), the 1997 Bluff Mountain controversy in Hot Springs North Carolina (Syden 1997), a 1999 forest-wide moratorium on logging in the Nantahala National Forest after the discovery of undocumented endangered Indiana Bats (Bagby 1999), and the 1999 *Sierra Club v Martin* case (48 ERC 1251, 29 Env'tl. L. Rep. 20,569) which shut down logging projects in national forests in North Carolina and throughout the Southeast.

This history of conflict over national forest management in North Carolina provides an explanation for the uncommonly large number of public comments (n=171) for the projects identified for this research (see Chapter Seven). This is surprising given that CE projects are relatively obscure and are only allowed under NEPA if they “do not individually or cumulatively have a significant effect on the quality of the human environment” (40 CFR1508.4). This experience with public involvement makes North Carolina a worthy case study.

RESEARCH OBJECTIVES & CONCEPTUAL FRAMEWORK

To answer these timely questions, this dissertation focuses on the public participation and forest management practices affiliated with the Healthy Forest Initiative for national forests in North Carolina from 2003 through 2008. This study intends to inform the debate over democratic decision-making theories (elite, pluralistic, collaborative, and agonistic) by addressing their application to project-level, site-specific management. This study also employs interdisciplinary methodologies to explain how the prevailing democratic process affected the management of species composition and ecological systems within the national forests.

To evaluate the prevailing decision-making processes present in national forest management in North Carolina, characteristics of different democratic theories were identified in the literature (see Chapter Two). Based on a design adapted from Steelman's study (1996), which used two categories (elite and participatory), the current study used characteristics displayed in Table 1 to provide a framework for evaluating whether elite, pluralistic, deliberative, or agonistic democratic theories most adequately explained the processes for 67 HFI projects issued in North Carolina. Finally, additional evidence from statistical modeling was used to identify patterns in the data to further explain the democratic processes and forest management present in the Healthy Forest Initiative.

Table 1 . Characteristics Of Elite, Pluralist, Deliberative, And Agonistic Democratic Theories *				
	ELITE	PLURALISTIC	DELIBERATIVE	AGONISTIC
ROLE OF THE PUBLIC	Limited/Passive	Represented by interest groups	Represented by stakeholders	Active Citizens
LOCUS OF POWER	Vested in Elite	Vested in interest groups	Stakeholder Collaboration	Vested in Individuals
VALUE OF DEMOCRACY	Instrumental; as a means	Instrumental	Intrinsic	Intrinsic
VIEW OF FOREST SERVICE	Idealistic. Trusting and competent	Moderates the Political Arena	Devolved	Skeptical
PRIMARY CONCERN	Efficiency and stability	Political Accountability	Conflict resolution	Growth of Individual
LOCUS OF PARTICIPATION	Voting, ratifying leadership	Interest group negotiations	Consensus driven Local deliberation	Local participation, Dissent-based negotiation, argumentation
VIEW OF THE PUBLIC	Disinterested Skeptical, Malleable, Apathetic, Uneducated	Disinterested Skeptical, Malleable, Apathetic	Legitimate, Knowledgeable	Legitimate, Knowledgeable, Diverse, Active
* Adapted from Steelman (1996)				

The process and participant characteristics were evaluated using categories outlined in the conceptual framework from Chapter Three and analyzed in Chapter Seven (Figure 2). These characteristics were evaluated to determine whether the presence of elite, pluralistic, deliberative, or agonistic theories were confirmed.

Figure 2. Conceptual Framework for Research Design: Decision-Making Process.		
Decision-making process = f (Process Characteristics + Participant Characteristics)		
Decision-Making Process	Process Characteristics	Participant Characteristics
Elite Aggregative Pluralistic Deliberative Democracy Agonistic	Scoping Comments HFI Appeals Rule Collaboration	Who participated What they said How they said it

Following the analysis of democratic traits, this dissertation includes a discussion of forest management authorized under the Healthy Forest Initiative in North Carolina. These environmental outcomes were evaluated using policy and project characteristics explained in Chapter Eight to identify the prevailing forest management approach. Figure Two outlines the conceptual framework outlined in Chapter Three and analyzed in Chapter Eight.

Figure 3. Conceptual Framework for Research Design: Forest Management.		
Forest Management = f (Policy Characteristics + Project Characteristics)		
Forest Management	Policy Characteristics	Project Characteristics
Commodity forestry Ecological forestry	Extraordinary Circumstances Categorical Exclusions	Where project occurred What occurred When project occurred

OVERVIEW OF DATA COLLECTION AND METHODS OF ANALYSIS

Records research and archival analysis were used to identify all individual project-level management actions in North Carolina beginning in 2003 with the promulgation of the Healthy Forest Initiative. This included discovery and analysis of public and internal Forest Service and General Accounting Office (GAO) publications and databases with the names and locations of all CE projects in North Carolina. These projects became the units of analysis for this study.

When this dissertation was initiated, no central database of these projects existed; the only way to identify CE management actions was a non-standardized schedule of proposed actions (SOPA) published quarterly on the Forest Service's website. Although many of the projects announced on the SOPA were inaccurate, incomplete, and poorly identified, this information provided enough data to produce a rough list of the projects in North Carolina. This list was then verified using data from a 2007 GAO study of all Forest Service projects nationally from 2003-2005. On March 25, 2009, the GAO released their data collection instrument and spreadsheets to the author for the purposes of this dissertation.

During the summer of 2009, the Forest Service Region 8 Headquarters in Atlanta, GA acknowledged that the agency had developed an internal database called the Planning, Appeals and Litigation (PAL) tracking system. On June 19, employees from the Forest Service Supervisors Office in Asheville, North Carolina, released a digital report of PAL of all projects of interest in the Croatan, Pisgah, Nantahala, and Uwharrie National Forests beginning in 2003.

After a July 6 2009, Freedom of Information Act (PL 89-554, 80 Stat. 383) (FOIA); request was filed by the author to obtain copies of the individual project files listed in the PAL report, the Forest Service Region 8 Headquarters in Atlanta approved the FOIA and determined that the research adequately met the criteria for a fee waiver. On October 2, 2009, the Supervisors Office began releasing copies of the individual project files listed in the FOIA, which included all public comments (n=171), environmental surveys, and internal Forest Service correspondence. On December 1, 2009, the final project file was received from the Forest Service. Each project file contained a Decision Memo explaining the District Ranger's decision, a Biological Evaluation documenting potential extraordinary circumstances, public comments about the projects, and other records.

A content analysis of the comments documented in the project files was conducted to determine the process and participant characteristics for each project. Policy and project characteristics were identified using the Decision Memos and Biological Evaluations (required for each CE project) to determine the nature of the individual projects with respect to the size, location, and composition of rare species occurring, or potentially occurring, in each project. These documents allowed for the classification of the forest management characteristics of individual projects. Archival data included Forest Service project announcements published in local papers and other records and transcripts, used to corroborate findings from the records research and content analysis.

This dissertation attempts to bridge the democratic theory, conservation, and resource management literatures using an interdisciplinary (Klein 1990) or transdisciplinary (Jantsch 1970) approach, incorporating both social and natural science methodologies to better explain how citizen participation and processes affect environmental outcomes of site-specific management. Because conflict over national forest decision-making has been present since the creation of federal public land, the problem-centered, social/natural science orientation dimensions of this study are most appropriately explored through interdisciplinary approaches to address similar questions arising from different fields of study. Moreover, this study uses a “transdisciplinary” approach to move beyond “free” or “basic” research towards a “field induced,” problem-centered study (Klein 1990), which allows for the research to inform applied, timely questions that are inaccessible through the traditional discipline silos. In short, this approach intends to broaden the scope of the research question beyond the traditional scholarship (Jantsch 1970).

STRUCTURE OF THE DISSERTATION

This dissertation’s next chapter includes a review of the resource management, conservation, and public policy literatures to explore the dimensions of the debate over democratic theory and national forest management. Chapter Three provides a discussion of the methodologies for this study, including records research, content analysis, and archival data analysis. Chapter Four provides the context for the case study by addressing history of conservation, with an emphasis on commercial forestry, ecological forestry, and conservation biology. Chapter Five provides a history of federal

land management, public participation, and environmental law in the U.S. Chapter Six provides context for, and characteristics of the Healthy Forest Initiative, as well as the legal challenges invalidating portions of this Bush Administration policy change. Chapter Seven provides an analysis of public participation in North Carolina's CE projects, with an emphasis on processes and participants. Chapter Eight addresses the forest management and environmental outcomes of decisions addressed in Chapter Seven. Chapter Nine concludes by providing an interdisciplinary lens to synthesize the analysis and provide potential policy recommendations arising from this study.

SUMMARY

Debates over democratic decision-making and ecology have emerged in several literatures. Four unique democratic theories—elite, pluralist, collaborative, and agonistic— address compelling questions for U.S. National Forest conservation conflicts that are identified and examined in this dissertation. The research questions for this study were: ***What decision-making structure dominated forest management activities in North Carolina under the Healthy Forest Initiative, and how did the prevailing decision-making process affect conservation for site-specific projects?*** Sixty-seven categorical exclusion projects in the Croatan, Nantahala, Pisgah and Uwharrie National Forests were identified and analyzed according to the process, participant, policy, and project characteristics for each site-specific proposal.

CHAPTER TWO: DEMOCRATIC THEORY, ENVIRONMENTAL MANAGEMENT, & U.S. NATIONAL FORESTS

These conflicts not only call for the highest order of skill, but involve decisions so weighty in their consequence, and so needful of permanence and correlation, that only the highest authority should make them.

Leopold, 1948

INTRODUCTION

The word 'democracy' originates from the Greek *demokratia* and first emerged in the English language during the sixteenth century after it was translated from the French word *democratie* (Held 2006). The root words *demos* (people) and *kratia* (rule) refer to a form of government emerging in the fifth century BC that was distinct from aristocracies or monarchies and run by a new economically and militarily independent group of free adult males of strictly Athenian decent (Held 2006). Specifically, these citizens participated in "giving judgment and holding office" (Aristotle in Held 2006:167). Today, the debate focusing on the utility of different democratic theories (elite, pluralistic, collaborative, and agonistic) provides for a rich exploration of the contemporary application of this longstanding experiment with the rule of the people (see Table 2).

Table 2. Overview of the Democratic Theories and Corresponding Management Approaches Identified in this chapter.	
Theory	Operational Management
Democratic Elitism	Traditional Resource Management
Aggregative Pluralism	Interest Group Representation
Deliberative Democracy	Collaborative Management
Agonistic Democracy	Dissent-Based Conservation

This chapter addresses competing democratic theories in the conservation, resource, and policy literature, each of which attempt to explain how public participation in agency decision-making affects Forest Service management of U.S. National Forests. These theories include traditional democratic elitism, interest-group pluralism, and emergent participatory theories, including deliberative democracy (Rawls 1971, 2005; Habermas 1975, 1978, 1981, 2001, 2005) and agonism (Arendt 1958; Connolly 1971, 1991; Mouffe 1985, 1999, 2000, 2005; Honig 1993, 2001). These authors have inspired substantial debate in different literatures, including resource management (Wondolleck 1988, 1996, 1999, 2000; USDA 2002; Mortimer 2003; Leach 2005a, 2005b), conservation (McCloskey 1999, 2000, 2001; Coggins 2001; Peterson MN et al. 2005, 2006, 2007; Peterson T et al. 2006; Cox 2006, 2007), and public policy (Dryzek 1990, 2004, 2006, 2007; Tuler & Webler 1999; Webler & Tuler 2000, 2006; Smith & McDonough 2001, Poncelet 2001, Kapoor 2002, Parkins & Mitchell 2005).

These theories directly relate to ongoing debates about federal land management (Kessler et al. 1992, Jones & Mohai 1995; Jones & Taylor 1995; Baldwin 1997, Moote and McClaran 1997, Coggins 1999; Beierle 2000, 2001; Steelman 2001,

Manring 2005; Peterson MN et al. 2005, 2006, 2007; Peterson T et al. 2006, Parkins & Mitchell 2005). This chapter describes the democratic theories present in the different literatures to guide an analysis of the Healthy Forest Initiative (HFI) and the subsequent effects for public participation in national forest management. Chapter Seven and Eight provide an analysis of the affects of HFI rule changes on public participation and conservation in national forests in North Carolina.

ELITE DEMOCRATIC THEORY

Except for office-holders and elected representatives, the ancient Greeks would have found few contemporaries in the United States of a 'democratic citizenry.' Instead, democratic elitism, the dominant political theory until the 1960's, vests all decision-making power, except voting, in the hands of elected and appointed decision-makers. In this structure, the role of the individual citizen is "thin" (Barber 1984). Democratic elitism theory holds a skeptical view about the ability of the public to contribute meaningfully to decisions that should, they assert, instead be left in the hands of political representatives. Democratic elitism calls for only the most restricted role of the individual in active governance.

Skepticism about an active citizenry, says Held (1987), dates back to the early Christian faith in a higher source of authority and wisdom, which eventually eclipsed the role of the philosopher king. "In sharp contrast to the Greek view that the *polis* was the embodiment of political good, the Christian worldview insisted that the good lay in submission to God's will" (Held 1987:37). During the 17th century, social contract theorists and political individualists provided support for the perceived role of the

citizen under forms of democracy consistent with the elite model of democracy.

Thomas Hobbes proposed an idea of the society ordered by a social contract that accounts for individual rights of independent citizens who agreed to allow sovereign powers to protect them from the brutality and chaos in the state of nature. Hobbes called for citizens to “give up” the right to govern themselves in exchange for “peace and defense” (1651). Later, John Locke later tried to improve Hobbes’ social contract by developing an understanding of ‘natural rights,’ where citizens entrusted governments with the authority to guarantee one’s rights to life, liberty, and property, unless the sovereign became tyrannical and triggered the legitimate power of the masses to revolt (1690).

Modern elite theory in America has an intellectual lineage dating back to James Madison, whose contribution before and during the Constitutional Convention and in the *Federalists Papers* (1788) profoundly shapes our understanding of democracy. (Steelman 1996) Like the European social contract theorists, Madison wrestled with paradoxical relationship between full equality of citizens and the unchecked power (i.e. “tyranny”) of the “popular majority.” Concerned about threats to a wealthy and powerful minority (Dahl 1956), Madison argued “the accumulation of all powers, legislative, executive, and judiciary, in the same hands, whether of one, a few, or many, may justly be pronounced the very definition of tyranny” (*Federalist No. 40*). The majority would be restricted by the protections under the Constitution that prevented it, according to Madison, from otherwise sacrificing the public good and the rights of a concentrated minority interest group (Steelman 1996).

In his “Observations” paper and the *Federalist No. 49*, Madison called for external checks to restrain the popular majority and provide safeguards in case electoral process could not prevent “all powers” from accumulating into the same hands (1788). These measures evolved into the network of constitutional checks and balances, including the presidential veto power, the filibuster, a bicameral Congress, Presidential nomination and Senatorial confirmation of appointments, judicial review, Senatorial ‘curtsey’, and “almost every organizational technique that promises to provide a check on any indefinable group of political leaders” (Dahl 1956:15). According to Madison, without these checks, the will of the majority would lead to instability, injustice, and confusion (1788).

Traditional Resource Management

The Industrial Revolution reinforced the legitimacy of elite democratic governance by providing a justification for excluding the general public in favor of technocratic “experts” unqualified to steer the country through the modernization of the late 19th century. The Progressive theory of governance, rising after a wave of populism and political turmoil at the beginning of the 20th century, adopted the philosophy closely following the elite model. According to the Progressives, professional managers and scientific experts--- not “uneducated masses”--- would steer agencies toward a level of efficiency providing “the greatest good to the greatest number for the longest time” (Pinchot 1910). Progressives created government agencies (e.g. the U.S. Forest Service) endowed with a “gospel of efficiency” (Hays 1959) and scientific

expertise they believed would allow apolitical administrators to dispassionately secure the broad public interest (Andrews 1999). (See Chapter Four).

By the 1950's, elite democratic theory dominated political and bureaucratic management in the United States. Some justified this dominance with support from empirical studies showing elite decision-makers were more supportive of democratic rights than average citizens. Stouffer (1955), for example, found the general public was relatively intolerant and unsupportive of individual rights and freedoms, which contrasted with influential elites who were found to be less repressive, more committed to democratic principles, and fairer in applying those principles (discussed below). According to democratic elite theories, decision-makers were the "carriers of the democratic creed" (Prothro and Grigg 1960) and the "guardians of democracy" (Sullivan and Barnum, 1987). These findings supported elite theorists' claims about the presumed wisdom of restricting citizen participation in governance. In addition to Stouffer's central finding in his influential 1955 study, Key (1961), McClosky (1964), Nunn, Crockett, and Williams (1978), McClosky and Brill (1983), Sullivan and Barnum (1987), and others produced studies addressing this central thesis. Democratic elitism theory argued that decision-makers were the purveyors of democratic values who provided a check against the potential tyranny of the majority.

In 1967, Bachrach published an influential critical analysis of "Democratic elitism," which he criticized as an attempt to "legitimate elite power and the minimization of citizen participation" (1988:18) and defective on normative and empirical grounds. Although his paper was originally rejected throughout his field

(only one journal reviewed his paper before rejecting it), Bachrach's main argument was eventually supported by many in his field. Leading political scientists, like Dahl and Lindblom for example, originally defended elite democratic theory but later called for radically restructuring power in the United States to promote more direct forms of democracy and individual dignity (Bachrach 1988).

Environmental Era

These criticisms of the elite model coincided with the rise of the "environmental era" (Andrews 1999:13) beginning in the late 1960's in the United States. The limits of the traditional elite model created a vacuum filled by participatory forms of democracy -- at least for organized interest groups. Several high-profile environmental controversies trigger a substantial backlash against the traditional elite model and the tendency for "agencies and their administrators ... to act on behalf of particular personal and political views of the public interest, which were neither scientific or consensual" (Andrews 1999:219). Above-ground nuclear weapons testing during the 1950's, for example, caused alarm after radioactive Strontium-90 was found in the teeth of deformed infants, despite assurances from scientists and agency administrators about the safety of nuclear testing in the atmosphere (Andrews 1999). Fallout from these tests spread the isotope strontium 90 across the globe, where it was absorbed by grass and then transferred up the food chain into the bones and teeth of nursing infants whose mothers consumed cow milk contaminated with the radioactive particle. (Dunlap 1981:102) "Suddenly, the authoritative reassurances of government scientists were proven false," (Andrews 1999:212).

Another high profile controversy erupted in November 1959, seventeen days before Thanksgiving, after a potent carcinogenic herbicide, aminotriazole, was found in shipments of cranberries from Oregon and Washington. This discovery raised doubts about the Food and Drug Administration's ability to regulate the use of toxic chemicals for farming (Dunlap 1981; Lear 1997). Aminotriazole was used by farmers who improperly applied the toxic herbicide beyond safe levels to boost yields and profits, in violation of clear regulations governing their use (Bosso 1987:96). The National Cancer Institute's warnings about the dangers of the cranberries triggered a massive public scare that lead the Secretary of the Food and Drug Administration to impound millions of pounds of berries and urge consumers to stop eating them. This public reaction was later described as "the first shot... for the nascent environmental movement... in a campaign to raise public fears about cancer from synthetic chemicals in food and water" (Wildavsky 1995 in Andrews 1999:214).

If the cranberry scare of 1959 raised the first doubts about to traditional elite model for environmental management, the findings about dangerous industrial chemicals in Rachel Carson's *Silent Spring* (1962) would strike the most damaging blow to established faith in technocratic administrators. Born in 1907, Carson began her career with early literary success as a wildlife and naturalist writer, whose first book in 1951, *Sea Around Us*, won the national book award after remaining on the *New York Times* best-seller list for a record 86 weeks. As one of the first female professionals at the United States Fish and Wildlife Service, she began following reports of problems with the "wonder-pesticide" DDT introduced in the wake of WWII. Farmers began using

“as much as two pounds of the poison per acre on crops like cotton, and its effects were showing up throughout the food chain, especially in birds” (McKibben 2008:365).

Silent Spring was published in 1962 after being serialized in *The New Yorker*, in which Carson famously wrote how “some evil spell had settled on the community: mysterious maladies swept the flocks of chickens; the cattle and sheep sickened and died. Everywhere was a shadow of death.” In her chapter, “Nature Fights Back,” Carson described how chemicals destroyed the natural ability of healthy ecosystems to keep pests in check, and killed the good and bad insects while leaving the most resistant, genetic selected super-pests. Carson warned the loss of environmental resistance would unleash large outbreaks of disease spreading and crop destroying insects.

This fear about silencing spring also produced an “ecocentric” or ecologically conscientious perspective, which was concerned with the threats from toxic chemicals to not just birds and fish but also humans. Carson’s work triggered a massive media campaign against her by the chemical industry’s Monsanto and Dow companies who criticized her as a “hysterical” “little old lady in tennis shoes” with no scientific expertise or evidence (Murphy 2005:106, 145). When these attacks failed, the elite traditional decision-making model continued to lose legitimacy, and “the idea had been firmly planted that perhaps modernity was not as problem-free as we might have imagined. From that notion sprang most of what has followed for environmentalism” (McKibben 2007:365).

These and other high profile environmental crises created a public backlash that moved the U.S. Congress to pass, and President Nixon to sign, the National

Environmental Policy Act of 1970 (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258, § 4(b), Sept. 13, 1982) (NEPA), the nation's first statutory law guaranteeing environmental analysis and public involvement for major federal actions (see Chapter Five and Six). The elite democratic model was being eclipsed by more participatory processes.

Over the next few decades, aggregative pluralism (discussed below) would slowly replace the traditional elite administrative framework to become the dominate democratic model in most Western liberal democracies. Like democratic elitism, however, aggregative pluralism also rejected active participation by individual citizens. In fact, with a resurgence of democratic elitism during the 2000's (Vaughn & Cortner 2005), more participatory forms of democratic decision-making never completely replaced the elite model of democracy. Under the Bush Administration, for example, longstanding guarantees for public participation in decision-making were eliminated (Huber 2005; McCarthy 2005; Vaughn & Cortner 2005) administrators were appointed who hostile to the mission of the regulating agencies they oversaw (Kennedy 2004), and democratically established regulations were rolled back to benefit client interests (McCarthy 2005) (see Chapter Six).

AGGREGATIVE PLURALISM

In the 1960's, aggregative pluralism emerged as the dominant political theory, and it presently serves as the conventional theoretical model of Western liberal-democracies throughout the world (Mouffe 1999, 2000). As problems emerged in the

traditional elite model of democracy theory, aggregative pluralism (Schumpeter 1947; Dahl & Lindblom 1961; Cohen 1992) or interest group pluralism (Lowi 1965, Stewart 1975) was described as a decision-making that focused on political accountability to democratically order diversified interest groups and centers of power.

Democratic participation was limited, in this view, to the struggle between diverse, competing interest groups to reduce conflict and support political stability through bargaining and compromise. The public could “influence the political system through the articulation of interests that are aggregated by political parties and legislatures and brought to bear on political decision-making” (Cohen & Arato 1992:19). This required a political structure with cross cutting interests, overlapping group membership, and social mobility to guard against the permanent domination by any one group (Cohen & Arato 1992). “In the pluralist view, therefore, the overall public interest lay not in delegating discretionary authority to administrative elites, but in making them more politically accountable” (Andrews 1999:219).

Based on Schumpeter’s democratic theory (1942) and Dahl and Lindblom’s “polyarchy” or “pluralist democracy” (1953, 1956, 1961), aggregative pluralism theorizes interest group representation as a mechanism to provide stability and efficiency. These theorists believed an ordered society was unattainable under either the traditional elite administrative models or more participatory forms of democracy. Instead, Dahl and Lindblom argued political competition among organized groups of citizens was best means of assuring responsive public policy (1953, p. 283).

Like elite theory, however, pluralists believed citizens should be restricted from directly participating (Berelson, Lazarsfeld, & McPhee 1954: 312; Dahl 1956), and should instead, as Schumpeter famously described, be relegated to “institutional arrangements for arriving at political decisions in which individuals acquire the power to decide by means of a competitive struggle for the peoples’ vote” (1950: 269). Pluralist theory emphasizes the aggregation of preferences that are negotiated by interest groups and representatives, and it limits citizen participation to either accepting or rejecting leaders through a competitive electoral process. Crystallized in his seminal 1942 work, *Capitalism, Socialism and Democracy*, Schumpeter argued that groups or leaders—not individual citizens—best represented the general public interest by negotiating policy in open debate and elections.

Democracy, according to aggregative pluralists, is a process by which political representatives form constellations of interests that influence decision-making and compete for policy outcomes. This method mirrors the elite approach that strictly limits citizen participation to competition in elections, and instead relies on competition between interest groups and leaders to arrive at political compromises. Citizen involvement under the pluralist model was limited to social clubs, church, volunteerism, and family to “deflect from political participation or activism on the part of the citizens” (Cohen & Arato 1992:19). Similar to studies perceived as validating democratic elitism theory (Stouffer 1955), pluralists pointed to empirical research in which voting patterns validated pluralist claims about individual participants as disinterested and inactive (Berelson, Lazarsfeld, & McPhee 1954; Almond and Verba 1963; Milbrath and Goeld

1965), which required interest groups to counter-balance the longstanding dominance by powerful industries in agency decision-making.

Interest Group Representation

Under this new pluralistic model, competing powerful administrative elites were joined by interest groups in a form of decision-making where political parties appealed to a large diversity of groups to gain traction for politically accountable outcomes. Pluralists believed this would lead to a convergence of political coalitions around more moderate, stable policies while accommodating divergent interests. “These included the traditional industrial and resource extraction interests, but also, interestingly, environmental protection activists who believed that only statutory mandates were strong enough to force agencies to stand up to powerful industrials” (Andrews 1999:219).

Powers traditionally held by technocratic agency experts were shared with interest groups who negotiated and bargained on behalf of the public or private interests to produce political compromises and balanced decision-making. As Stewart wrote in his seminal paper on the “reformation of American administrative law,” public interest groups “espouse the position of important, widely shared (and hence ‘public’) interests that assertedly have not heretofore received adequate representation in the process of agency decision. Such representation is wholly consonant with the pluralist vision of the collective welfare implicit in the expansion of the traditional model” (1970:1764). Ostheimer (1977:14) also identified the pluralistic emphasis as “a restoration of the political balance in our democracy,” which attempted to correct the

overrepresentation of client and regulated interests by opening several opportunities for organized public interest groups.

Stewart identified this transformation of the traditional administrative process as a correction of the longstanding overrepresentation of private or client interests in agency decision-making. "If bias is attributable to imbalance in representation within the agency decision-making process, however, a seemingly more reliable antidote would be to provide more effective representation for unorganized 'public' interests" (Stewart 1975:1715). There is also criticism in the conservation literature about the tendency for commercial groups to benefit most by the Forest Service decisions (Bultena and John 1972; Robbins 1985; Clary 1986; Twight and Lyden 1990).

In *A Lumberjacks and Legislators* (1982) and *American Forestry* (1985), for example, historian William G. Robbins documented a longstanding "highly congenial relationship between the Forest Service and the commercial interests consuming national forest outputs." And in *Timber and the Forest Service*, former Forest Service historian David Clary documented a strong timber production bias based on the agency's historical goal of maximum commercial logging, and concludes that at "the wood chopper's voice will remain important, but someday it just might cease to be the dominant one in the Forest Service" (1986:199). In short, the Forest Service has traditionally favored resource extraction at the exclusion of ecological forestry (Hirt 1994; Hays 2007).

Recently, interest group pluralism has come under criticism as a democratic model for its failure to correct the overrepresentation of client-interests in agency

decision-making (Olson 1965; Parent 1992, Abel & Stephan 2000). Critics argue the pluralist model fails to incorporate individual citizens in agency decision-making to address imbalances in political and economic power (Schattschneider 1952; McConnell 1966; Lindblom 1988). Pluralism displaces the legitimate right of independent citizens from participating in a “strong democracy” (Barber 1995; Steelman 1999; Abel & Stephen 2000) and fails to promote more democratic decision-making (Rawls 1971; Habermas 1975; Mouffe 2000). Critics believe persistent inequalities exist in favor of private interest groups, which dominated agency decision-making processes before the environmental era (Sax 1970, Stewart 1975, Hirt 1995, Abel & Stephen 2000). This is especially true for the Forest Service, which has consistently focused on commodity forestry since the 1940’s (Dana & Fairfax 1980; Twight 1983, Hays 2007).

Critics of aggregative pluralism point to its tendency to discourage popular participation, alienate citizens from mainstream political processes, and generate excessively aggressive and destructive forms of expression (Rawls 1971, Habermas 1975, Mouffe 2000; Ackerman 2002). John Rawls, for example, saw the aggregative view as the source of disaffection with democratic institutions, arguing in *A Theory of Justice* (1971) that the dominance of interest group representation was producing a crisis of legitimacy affecting liberal democracies. Jürgen Habermas believed the aggregation of individual preferences, such as adding votes or referenda, was only sufficient for representing “mere agreement” instead of “rational consensus” (1990). The next section addresses more direct democratic models (deliberative democracy and agonistic pluralism), which emerge from a long tradition of participatory democracy and are

presently involved in a debate in the literature over the most appropriate understanding of citizen in government decision-making.

PARTICIPATORY DEMOCRACY

While it is widely accepted that public participation counterbalances the overrepresentation of client and private interests in federal agency administrative decision-making, there is far less agreement about which democratic theory is most appropriate for understanding individual citizen input. Although “democracy is today a near-universal validating principle for political systems” (Dryzek 2005), the literature is deeply divided over which democratic theories describe the most adequate process for citizen participation in agency decision-making. This section addresses citizen involvement through an analysis of participatory democratic theory and two variants, deliberative democracy and agonistic pluralism, which aim to improve conventional decision-making processes by including individual citizens.

Deliberative democracy and agonistic pluralism are two relatively new models for public participation advanced in the policy and conservation literature by different democratic theorists with alternative explanations of the affect of individual citizens on agency decision-making. The central focus on individuals, however, is not new. More direct, radical, grassroots, or participatory processes have been rooted in democracy since its birth in Athens, where citizens directly deliberated over decisions for the *polis*. “What we see today is therefore the revival of an old theme, not the sudden emergence of a new one” (Mouffe 2000).

Demokratia of Ancient Greece granted independent groups of free adult Athenian males the power to participate in “giving judgment and holding office” (Aristotle in Held 2006:167). In *The Politics*, Aristotle writes the quality of reason, speech, and ethics are universal among citizens and governments should include them to allow individuals to realize their inherent capacities. Although Plato and Aristotle argued against the inclusion of unskilled debaters without the same natural talent as political philosophers, they believed the opening of the *polis* would transform and develop newly independent, active citizens (Sheldon 1988). Free and open discourse was extended beyond the walls of the general assembly to the marketplace, or *agora* (Cox 2006), which directly contributed to the actualization of the individual citizens’ unique human capacity for rational thought.

Taking these developmental qualities further, Jean-Jacques Rousseau, an eighteenth century philosopher and inspiration behind the French Revolution, believed democratic participation would lead toward higher education, better psychological wellbeing, and ultimately, greater individual and collective freedom (Dent 1990). Rousseau argued that individual personalities in a social contract would be bound to the “moral and collective body, composed of as many members as the assembly contains votes, and receiving from this act its unity, its common identity, its life and its will” (Rousseau 1762: book 1, section 6). A contemporary of Hobbes and Locke, Rousseau incorporated participatory theory into the leading social contract philosophy of his time, calling for the active involvement of individuals in governance to strengthen the community as a whole. Unlike elite democratic models, Rousseau considered individual

participation a primary building block of the social contract. In defining “general will,” Rousseau argued “each of us puts his person and all his power in common under the supreme direction of the general will, and, in our corporate capacity, we receive each member as an indivisible part of the whole” (Rousseau 1762: book 1, section 6). Under this structure, the general will, like the term “public” or “public interest,” describes the collective good or popular sovereignty in the classic understanding of *demokratia*.

Although Native American societies included several indigenous forms of democratic models (Johansen 1996), the transfer of European participatory democracy to the United States is attributed to Thomas Jefferson who, inspired by Rousseau, envisioned an agrarian society where individual farmers and others would directly participate in governance. Jefferson rejected a Lockean-style form of constitutional rule in favor of a form of popular sovereignty where individual citizens were involved in problem solving. “He did not like removing the burden of solving public disputes from the people, and assigning it to various constitutional mechanisms” (Theobald 1997:81).

During this time in the U.S., some forms of democracy advanced according to its literal translation; the rule of the people not abrogated to legislative bodies or other forms of government. Jefferson denied a request to join the Constitution Convention in Philadelphia, and he was critical of the meetings’ final document, which he only supported with the condition that the Bill of Rights included provisions for the protection of the individual citizen. “For now we must emphasize that Jefferson was a civic republican and the Constitution created in Philadelphia was a modern liberal document. There should be little wonder that Jefferson opposed it” (Theobald 1997:81).

From his office in France, where he was serving as the ambassador in 1787, Jefferson penned a letter to one of the primary Constitution authors, James Madison, and expressed his unfriendly attitude toward more “energetic” forms of government, which he considered “always oppressive.”

In contrast to elite forms, popular sovereignty was a process where individuals became better educated citizens who understood their stake in the collective. In his letter to Madison, Jefferson argued against restrictions of individual citizen participation, arguing “peace is best preserved by giving energy to the government or information to the people. This last is the most certain and the most legitimate engine of government... [Citizens] are the only sure reliance for the preservation of our liberty” (1787). Educating the public was synonymous with good governance, providing a safeguard against what Jefferson feared was an illegitimate limitation of the individual citizen’s political role. Instead of active participants in decision-making, democratic elites believed “citizens were economic beings in the first place... In fact, when Hamilton created his national bank, modeled after the Bank of England created a century earlier, he used the epithet ‘mind your business’ on national coins—a phrase later changed to ‘In God We Trust’” (Theobald 1999). Contempt for citizen involvement among elites was equally matched by more open, participatory democratic approaches.

Today, direct citizen participation is the subject of countless pages in the policy and environmental literature. Renn, Webler, and Widemann, for example, defined citizen participation as “forums for exchange that are organized for the purpose of facilitating communication between government, citizens, stakeholders and interest

groups, and businesses regarding a specific decision or problem" (1993). Abel and Stephan define direct democracy as including "the full and independent participation of individuals in setting policy" (2000:617) which, in contrast to the pluralist interest group model, includes citizen involvement in community political processes that influence decision-making (Laird 1933).

Much of the conservation literature has been dedicated to questions about individual participation as local, including collaborative management (deliberation) and dissent-based conservation (agonistic pluralism), which both elevate the role of citizen participation in issues of direct concern to their community. Furthermore, individual participation is understood as process where, as Abel and Stephan argue, "citizens are concerned with local problems and may become involved in any program (federal, state, or local) that has direct impacts on their neighborhoods and families" (2000:617).

Participation theorists have pointed to place-based (Escobar 2004), community-based (McCarthy 2005), or grassroots (Coglianese 1999) where people are directly affected by emerging issues, about which they are most likely to understand. Going further, poet and naturalist Gary Snyder identified local participation at the watershed level, "the first and last nation whose boundaries, though subtly shifting, are unarguable" (1993:82).

Given the limits of both the traditional elite and the dominant aggregative pluralistic theories, proponents of these new alternative theories have called for more adequate explanations of individual citizen involvement (Gray 1989 Mouffe 1999; Peterson et al. 2005; Cox 2007). Deliberative democracy and agonistic pluralism, described below, are useful for gaining a better understanding of the processes involved

in federal agency decision-making. Paying attention to these emergent democratic theories can inform management when collectively held environmental interests are at stake.

DELIBERATIVE DEMOCRACY

To address these competing theories and their corresponding conservation outcomes, this section addresses deliberative democratic theory and the operational “collaborative management” (Gray 1989, Wondolleck & Yaffee 2000), “cooperative conservation” (Bush 2004), and other trends in federal agency decision-making that are designed to adhere to “rational” (Habermas 1975), consensus-based models.

Deliberative democracy is best understood by illustrating two main variants proposed by John Rawls (1970) and Jürgen Habermas (1975, 1978, 1990, 1996, 2001, 2003, 2004, 2005). These authors define deliberative democracy by its adherence to free discourse and rational, consensus-driven decision-making that theoretically promotes ethical agreements in the public interest (Calhoun 1992; Benhabib 1996; Chambers 1996; Bohman and Rehg 1997; Dryzek 2000.)

As a departure from interest group negotiations, deliberative democrats wish to arrive at decisions based on democratic procedures and “fair conditions” that also include the free participation of independent citizens. “Different deliberative theorists give somewhat different accounts of what these fair conditions are, the principal versions being those of Habermas’s ‘ideal speech situation’ and Rawls’s idea of ‘public reason’” (Crowder 2006:6).

Deliberative democrats believe conditions supporting fair debate and transparent decisions provide an opportunity for individual citizens to rationally engage the process without causing instability and confusion. According to deliberative democratic theorists, individual rights are protected by the liberal democratic state when citizens are informed by a logical, “universalist-rationalist” approach (Petersen 2007) and can engage in agency decisions logically and unselfishly. This approach “shares with enlightenment science the aim of establishing universal truths independent of context.... [and] assumes that every nation will accept liberal democracy once its citizens become rational” (Petersen et al. 2007:83). This faith in independent citizens and the trajectory of liberal democracies contrasts starkly with the distrust harbored by elite and pluralist democratic theories.

The first wave of deliberative democratic theory was initiated by John Rawls in 1971, whose work emerged in reaction to the dominance of the pluralistic interest-group model. In his book, *A Theory of Justice*, Rawls accepts “the fact of pluralism” while rejecting the dominance of the conventional aggregative administrative model, believing decision-making should be instead based on a form of “moral” consensus deeper than “mere agreement on procedures.” Rawls and his followers (Cohen 1989) developed a theory of deliberative democracy emphasizing principles of justice reached through the “original position,” in which citizens set aside the particularities of positions and recognize “justice as fairness” in administrative decision-making. The combination of these basic liberal principles with “constitutional essentials,” according to Rawls, provides a framework for “free public reason” (Rawls 1993:5).

Similar to democratic elitism theory, Rawls principles of liberal justice protect the individual or minority (private) interests from the will of popular sovereignty. He called for establishing a process for distinguishing 'the good' from 'the right' agreement (1971: 446-449) to serve as a bulwark against irrationality and instability. Deliberative democracy secures these conditions, according to Rawls, because it creates fair conditions guaranteeing the "exercise of political power is proper and hence justifiable" (Rawls 1993:217).

The key difference from both the elite and pluralist models, however, is that in the deliberative process individual citizens join administrators and interest group representatives as equal stakeholders in decision-making. Under the deliberative model, democracy is also considered a fragile process that requires a political culture of informed and rational citizens to cautiously guide administrative decision-making (Ivlie 2004).

Jürgen Habermas' writings on deliberative democracy contribute to the literature by adding another thread relating to the "public sphere" as a unique discursive space where citizens participate through dialogue and debate (Habermas 1964, 1975, 1978, 2004, 2005). Habermas specifically calls for open and inclusive public decision-making processes to foster consensus about agency actions free of coercion. Although Rawls and Habermas' theories are similar in their critique of the aggregative model of democratic theory, the former is concerned more with the liberty of the individual and the exchange of rational ideas, while the latter calls for public space for free and open debate to allow for a deliberative turn in democratic decision-making.

Habermas and other deliberative scholars (Benhabib 1996) advance a form of deliberative democracy in which “citizens behave as a public body [and] confer in an unrestricted fashion—that is, with the guarantee of freedom of assembly and association and the freedom to express and publish their opinions—about matters of general interest” (Habermas 1964:136). This view of deliberation requires a strict proceduralist approach where participants directly address the merits of different alternatives and the rules of the debate. In this administrative model, citizen participation occurs through deliberation based on “the force of the better argument” to inform agency decision-making (Habermas 1990:123).

Benhabib (1996) clarified these procedures by emphasizing the norms of “equality and symmetry” among participants who debate and question the assigned topics and rules for decision-making. “It is a necessary condition for attaining legitimacy and rationality with regard to collective decision making processes in a polity, that the institutions of this polity are so arranged that what is considered in the common interest of all results from processes of collective deliberation conducted rationally and fairly among free and equal individuals” (Benhabib 1996:69). This process gains legitimacy through a democratic institution’s free and open debate, which equally benefits all involved and produces a sense of impartiality.

Unlike norms of the elite democracy and interest group pluralism, individual citizens are encouraged by deliberative democrats to participate in processes that traditionally privileged powerful interests (Twight & Lyden 1989; Steelman 1996; Abel & Stephan 2000). The deliberative emphasis on individual representation broadens the

conception of public participation beyond the interest group framework and is concerned with an administrative process in which individual citizens are involved in “debate and discussion aimed at producing reasonable, well-informed opinion” (Chambers 2003:309).

Habermas’ model of deliberative democracy develops an alternate understanding of the “public sphere,” in which individual citizens influence agency decision-making through public debate and open communication. “Communicative power is exercised in the manner of a siege. It influences the premises of judgment and decision making in the political system without intending to conquer the system itself” (Habermas 1996:486). Habermas’ deliberative theory endorses diffuse ‘subjectless communication’ in the public sphere, where “critical publicity,” the moral force of judgments, reached by rational consensus, prevails. Public opinion, by virtue of the communicative power, influences decisions through elections that ultimately legitimize administrative power and legislation (Dryzek 2006).

Collaborative Management

Deliberative democracy has emerged as a significant trend in the conservation and resource literature behind the emergence of collaborative management (Graham 1986; Renn et al. 1995; Beierle 1999; Ackerman & Fishkin 2000; Gastil 2000; Fishkin 2003, 2005; Gastil & Levine 2005; Ryfe 2005). New models based on deliberative democratic theory include collaborative management (Gray 1989), community based environmental management (Kenney), ecosystem management (Grumbine 1994; Cortner and Moote 1999), collaborative conservation (Brick et al. 2001), community

based initiatives (Brunner et al. 2002), grassroots environmental management (Weber 2003), partnering (Leach et al. 2002) and cooperative conservation (Bush 2004). According to proponents, federal lands decision-making should depart from the conventional pluralistic forms of citizen involvement and embrace more deliberative forms of participation (Wondolleck 1996, 1999).

The earliest and most frequently cited description of collaborative management in the resource literature was described by Barbara Gray (1989:5) in *Collaborating: Finding Common Ground for Multiparty Problems*. Gray called for “a process of joint decision-making among key stakeholders of a problem domain about the future of that domain.” Although Gray’s early work was primarily concerned with the alternative dispute-resolution field, her work is frequently cited in the resource management literature. Early calls for more deliberative approaches to national forest management emerged during the Bitterroot and Monongahela NF controversies (see Chapter Five) leading to NFMA’s the public participation process (Bolle 1971, 1973). Since its emergence as an alternative public participation process, proponents of collaborative management (Bolle 1971; Knopp and Caldbeck 1990) have pointed to the value of deliberative forms of public participation as a rationale for deregulation and devolved decision-making (McCarthy 2005) in favor of consensus-based models of deliberation (Stankey et al. 2003).

Collaborative decision-making is perceived by proponents as the application of deliberative democracy natural resource management. This is frequently attributed to Julia Wondolleck (1999:118), who argued for “a fundamental change in the way agency

officials conduct their business as, indeed, it was intended to be.” In *Making Collaboration Work: Lessons From Innovation In Natural Resource Management*, Wondolleck and Yaffee (2000: xi) argued that collaborative management reflects “a period that is as significant as the period one hundred years ago when President Theodore Roosevelt, Gifford Pinchot and others invented a set of principles for management of public resources.”

A key to most collaborative management projects is the emphasis on the value of local and private stakeholders. Although Rawls called for a “veil of ignorance” for participants to objectively arrive at decisions, Wondolleck instead argues for stakeholders to “recognize the ‘me’” and be “clear about their own interests, how these interests are similar and different from those of the other stakeholders, and who within the organization can effectively articulate these interests and persuasively advocate on their behalf...so that *their own interests* will be acted upon” (1999:127, emphasis added). Despite this inconsistency with deliberative theories’ call for disinterested participants, proponents of collaborative management appear unconcerned with a potential conflict of interest, which is problematic given strict prohibitions in federal statutory laws, like the Federal Advisory Committee Act (Pub. L. 92-463, Oct. 6, 1972) (FACA), that restricts parties with conflicts regarding privately-held special interests (see discussion below).

This role of individual stakeholders, especially local, in collaborative management is a key feature distinguishes it from conventional decision-making processes. Gray (1989), Wondolleck (2000), and others (Phillips 1995; Bohman 1996;

Williams 1998; Young 2000) believe collaborative management provides for better stakeholder participation and releases federal agencies from the pluralistic processes that lead to gridlock and “analysis paralysis” (Bosworth 2002).

Some resource managers also embrace deliberative negotiations in part for the role of consensus-based decision-making as a replacement for the dominant aggregative pluralism (interest group) model criticized in the resource management literature.

“Nearly every contemporary policy report urges regulators to build consensus with industry and other affected organizations,” using collaborative management to arrive at agency decision-making (Coglianese 1999:33). Kenney asserts that the requirement for administrators to seek consensus represents a new trend in governance with “consensus-based decision-making processes based on field-level experimentation and learning” (2000: v). While proponents of collaboration argue that consensus-building eliminate conflicts, saves time, and leads to better policy, critics, nonetheless, believe consensus-based negotiations runs the risk that public administrators will pursue consensus as an end in itself (Coglianese 1999). “They should decide when and how to engage in public dialogue based foremost on what will serve the overall public interest, not on what will lead to a consensus among those inside the policy loop” (Coglianese 1999:34).

The resource management literature includes several recent papers calling for a transition in Forest Service decision-making toward more collaborative forms of management. Proponents believe that consensus-based decision-making would “alter the top-down, ‘environment-over-economy’ approach to the contemporary

environmental regulatory framework by infusing decentralized decision-making, stakeholder collaboration, and citizen participation” (Hibbard & Madsen 2003:704). Kenney believes the limits of the aggregative, pluralistic model and the “widespread dissatisfaction with the existing ‘system’” have been used to justify attempts to develop new democratic decision-making process, “but does not invalidate the importance or practical necessity of evaluating these new approaches on their own merits” (2000:v). The rationale for a transition to more deliberative forms of decision-making is based on the alleged problems pluralistic interest group model, especially with citizen appeals and litigation (see Chapter Five).

Critics of traditional administrative processes believe collaborative management can expedite project level, site-specific resource management decisions in U.S. federal lands (White House 2002; Bosworth 2002). “These characteristics of participatory democracy are said to improve plan implementation by resolving conflicts during the planning process, rather than delaying implementation of completed plans while decisions are reviewed through appeals and adjudication” (Moote & McClaran 475). Cheng & Fiero, for example, believe collaborative management “was specifically formulated to address both the complexity and the rancorous conflict that characterizes the management of the U.S. public lands and resources, such as the national forest managed by the U.S. Department of Agriculture’s Forest Service” (in Gastil & Levine 2005:164). Wondolleck also believed (118) “acceptable decisions will result rather than decisions that are contested in lengthy judicial or administrative appeals processes.”

Although collaborative management for federal agency decision-making began as early as 1990's (Leach 2006), the Bush Administration was one of the most enthusiastic proponents of negotiations that were theoretically more deliberative. As the next section describes, the Forest Service under the Bush Administration replaced conventional decision-making processes with variations of deliberative democracy and collaboration (Manring 2005; McCarthy 2005).

Healthy Forest Initiative

With the forest still smoldering, President George W. Bush arrived in Oregon August 22, 2002 at the site of the 500,000 acre Biscuit Fires to shake hands with firefighters and announce the Healthy Forest Initiative (HFI) (White House 2002). According to the HFI, the public participation "process is complex, time consuming and burdensome" and "procedural delays are stalling critical forest and rangeland management projects" (White House 2002:1). The HFI called for improving "regulatory processes to ensure more timely decisions, greater efficiency, and better results in reducing the risk of catastrophic wildfires by restoring forest health." (NEPA Documentation Needed for Fire Management Activities; Categorical Exclusions, 68 Fed. Reg. 33,814 (June 5, 2003). To this end, the Bush Administration unrolled one of the most sweeping regulatory changes to national forest management in decades (see Chapter Six).

The day after President George W. Bush's speech in Oregon's Biscuit Fire, his administration began introducing specific policy proposals for Forest Service management (White House 2002). That same week, U.S. Agriculture Secretary Ann

Veneman and U.S. Interior Secretary Gale Norton unveiled a four-part HFI regulatory package. This proposal called for changes to "streamline unnecessary red tape that prevents timely and effective implementation of wildfire prevention and forest health projects on Forest Service lands. Delays of these projects can have devastating environmental and social consequences when catastrophic fires strike" (White House 2002).

The Healthy Forest Initiative's regulatory rule changes were, according to Forest Service officials, created to address "analysis paralysis" by eliminating Forest Service participation and environmental analysis from the majority of forest service management proposals (Bosworth 2002). Under the literal smoke, the HFI was proposed to fundamentally change conventional interest group and agonistic processes, either by eliminating existing Forest Service participation requirements or replacing them altogether with new deliberative planning and collaborative management models.

The HFI included new regulations for the expedited permitting of management that exempted conventional public appeals processes (Categorical Exclusions) while instituting new forms of collaborative decision-making (Huber 2005). One of the new HFI regulations for "Hazardous Fuels"(CE #10) exempted up to 1,000 acres of logging and 4,500 acres of prescribed burning from standard National Environmental Policy Act (NEPA) environmental assessment and Environmental Impact Statement process (36 CFR 220(ii)). This exemption for "hazardous fuels reduction" activities also requires that proposals "shall be identified through a collaborative framework " consistent with the agency's guidelines outlined in the *Collaborative Approach for Reducing Wildland Fire*

*Risks to Communities and the Environment – Ten-Year Comprehensive Strategy:
Implementation Plan (USDA & USDI 2002).*

This “collaborative framework” is described by the *Implementation Plan* as the process of bringing together agency professionals, local participants, and state, federal and tribal governments to prioritize management and implementation (USDA & USDI 2002). This approach emphasizes “local level collaboration” with stakeholders who have expressed some expertise or interests in the forest (2002:9). The HFI’s collaborative process was theorized as a way to bring (local) stakeholders to the table and avoid conflicts resulting in public challenges to a District Ranger’s decision through appeals to supervisors in regional offices.

Following the HFI, the Bush Administration worked with Congress on the “*Healthy Forests Restoration Act of 2003*” (HFRA), which passed the U.S. House May 20, 2003 (HR 1904), the U.S. Senate on October 30, 2003, and was signed by the president on December 3, 2003. The HFRA produced new classes for “healthy forest” management that are similar, although separate, from the HFI regulation changes, including a pre-decisional objection process for hazardous fuel reduction projects.

In addition to creating new expedited classes for management, the HFRA legislation also implemented additional collaborative processes for national forest management. To accomplish this, the HFRA replaced conventional public participation processes with new “healthy forest” management to “reduce wildfire risk to communities, municipal water supplies, and other at-risk federal land through a

collaborative process of planning, prioritizing, and implementing hazardous fuel reduction projects” (HFRA § 2(1), 16 U.S.C.A. § 6501(1), emphasis added).

Shortly after the HFRA passed, the Bush administration issued Executive Order 13352, entitled “*Facilitating Cooperative Conservation*,” which defines collaborative management as involving “collaborative activity among Federal, State, local, and tribal governments, private for-profit and nonprofit institutions, other nongovernmental entities and individuals.” The order calls on agencies to “properly accommodate local participation in federal decision making” (2004:1) and promote “cooperative conservation” by partnering with “local stakeholders” and “private for-profit” groups. The order calls for “implement[ing] laws relating to the environment and natural resources in a manner that promotes cooperative conservation, with an emphasis on appropriate inclusion of local participation in federal decision-making, in accordance with their respective agency missions, policies, and regulations” (Bush 2004:1).

In 2007, the White House convened a “Conference on Cooperative Conservation” with the Departments of the Interior, Agriculture, Commerce, Defense and the Environmental Protection Agency, for a three-day meeting to identify “innovative and effective approaches to promoting cooperative conservation.” As the brochure states, “This conference reflects the President’s continuing commitment to ensure that the federal government listens to the concerns, ideas and insights of *local citizens* and works closely with them in restoring and conserving our natural heritage” (Bush 2007:1, emphasis added).

Also in 2007, the Bush Administration directed the U.S. Council on Environmental Quality (NEPA oversight body) to publish the “Collaboration in NEPA, A Handbook for NEPA Practitioners” (2007), which instructs all administrative agencies to include collaborative management models for planning and public participation. According to the CEQ, the handbook presents the “results of research and consultations... concerning the consideration of collaboration in analyses prepared under the National Environmental Policy Act (NEPA). It introduces the NEPA practitioner and other interested parties to the issue of collaboration, outlines general principles, presents useful steps, and provides information on methods of collaboration”(CEQ 2007). It is unclear, however, if the Obama Administration will continue to push these specific collaborative management directives.

The emergence of collaborative management, cooperative conservation, and other deliberative forms of decision-making represents calls in the literature for the Forest Service to reject the elite and interest group processes in favor of more stakeholder driven approaches. It is too early to determine, however, if collaborative decision-making represents a lasting change in agency policy making, especially given recent court rulings have invalidated several HFI rule changes designed to insert deliberative processes in agency decision-making (*Wilderness Society v. Reay II* 2006; *Sierra v. Bosworth* 2007). The literature is divided over the value and necessity of these new collaborative processes introduced in federal lands planning. The final section of the paper explores the theory of agonistic pluralism as a competing democratic theory

that attempts to explain the proper role of citizen participation in agency decision-making.

AGONISTIC PLURALISM

Another democratic model advanced in both the conservation and policy literature, agonistic pluralism (Mouffe 1999), brings a radical participatory emphasis to decision-making. This decision-making structure emphasizes two unique aspects of participatory democracy: 1) the role of conflict and dissent-based negotiations, and 2) the radical nature of individual participation. This approach offers a distinct alternative to elite and conventional aggregative pluralism models that dominate public participation practices that limits the role of the individual (Laclau & Mouffe 1985; Connolly 1991, Honig 1993, Mouffe 2000; Petersen MN et al. 2005, 2006, 2007, Petersen T et al. 2007). Agonism's other central contribution (the attention to the inevitability of conflict, or ineradicable antagonisms, in Western liberal-democratic societies) also distinguishes it from censuses-based, conflict-resolution democratic processes (Arendt 1971; Connolly 1991; Honig 1993; Mouffe 1999, 2000).

First, agonistic pluralism emphasizes direct, radical participation, and the ascendancy of individual citizens in agency decision-making. The operational management of this democratic model can be seen in direct "dissent-based conservation" (Peterson et al. 2006) and forms of direct public involvement that privilege falsification and argumentation over consensus-based collaboration or interest group negotiations.

The literature describes agonism as a rival model to deliberation for its attention to direct confrontation and contest between citizens, groups, and the government. Agonistic pluralism emphasizes the role of citizen participation in agency decision-making while rejecting consensus-based decision-making as a model prone to coercion that builds unrealistic expectations for success. Agonism, however, acknowledges the irreducibility of conflict, or the democratic paradox, in liberal democratic societies (Arendt 1971; Connolly 1991; Honig 1993; Mouffe 1999, 2000).

While general agonism is attributed to several authors in the literature, Chantal Mouffe's central theory of agonistic pluralism, as well as her criticism of deliberative democracy, positions her ideas as a unique to both policy and conservation literature. Specifically, Mouffe's alternative to the dominant interest representation, as well as deliberative democracy, instead presents democratic public participation as a "vibrant clash of positions" in which power and antagonisms in decision-making are redirected to positively affect the public interest (2000).

Instead of seeking stakeholder consensus or illusive interest group compromise, which they see as impossible, dissent-based agonistic theorists instead accept the inevitability of conflict in environmental decisions. This perspective finds direct confrontation over scientific claims or political arguments between adversaries to be a desirable part of the process. "Participants need not like each other, but they must respect each other as adversaries worth arguing against" (Peterson 2004). Agonistic pluralism is perceived as process through which individual antagonisms are transformed into understandings of others as legitimate contenders in a struggle for

preferred policy outcomes. “Introducing the category of the ‘adversary’ requires complexifying the notion of antagonism and distinguishing two different forms which can emerge, antagonism properly speaking and agonism. Antagonism is the struggle between enemies, while agonism is the struggle between adversaries” (Mouffe 2000: 103). Like the common definition of agonism as a contest between groups or individuals (Merriam-Webster 2010), this democratic model informs public participation in highly conflictual federal agency decisions. Mouffe identifies this approach as a key difference from deliberative democracy, and instead argues that “the prime task is not to eliminate political passions from the public sphere but to mobilize those passions toward democratic designs” (2000: 103).

Democratic Paradox

Agonistic pluralism’s theoretical framework relies an understanding of the “democratic paradox” (Rousseau 1751, Connolly 1991, Honig 1993, Mouffe 2000, Peterson MN et al. 2005, 2006, 2007, Peterson T et al. 2006, Cox 2007, Peterson N et al. 2007), in which conflict is understood as an inherent tension in Western liberal democracy. Although theorists as far back as Rousseau (1751) have discussed several paradoxes in constitutional democracies, agonists identify a “paradox of politics” (Connolly 1991) in modern liberal democracies requiring political theory that brings “politics forward” (Honig 1993) in public debates over controversial issues. Honig, for example, believes politics “consists of settlement and unsettlement, of disruption and administration,” and rejects “the dream of displacement, the fantasy that the right laws or constitution might some day free us from the responsibility for (and, indeed, the

burden of) politics” (Honig 1993). Honig’s political theory warns against displacing conflict, and instead calls for citizen participation that disrupts the consolidation of power.

In her book, *The Democratic Paradox* (2000), Mouffe identified this paradox as a tension where, “on one side, we have the liberal tradition constituted by the rule of law, the defense of human rights and the respect of individual liberty; on the other the democratic tradition whose main ideas are those of equality, identity between governing and governed and popular sovereignty” (Mouffe 2000:22). Political theorists identify this tension between competing values and political passions as the innate conflict within Western liberal-democratic governments between popular sovereignty of the majority and the liberty of private minority interests. “While democracy always carries the threat that the majority will choose to abrogate individual rights, liberalism always carries the threat that the polity will dissolve into anarchy. In tandem, however, they may maintain a check on each other’s excesses” (Peterson et al., 2006). This analysis of the democratic paradox acknowledges the original tension between elite theory and more participatory models that describes popular citizen involvement as either the tyranny of the majority (Madison 1788) or “the people being the only safe depository of power” (Jefferson 1787).

This democratic theory informs the question of public participation in environmental management by advancing our understanding of “the agonistic relationship between equality and liberty... [where] attempts to maximize individual liberty do so at the expense of political equality, while attempts to maximize political

equality similarly curtail individual liberty” (Peterson, T et al. 2006). This tension is evident in environmental debates (climate change, endangered species, forests, etc.) between the rights of private resource interests and the public demand for conservation and ecological integrity.

Agonistic pluralists’ analysis of the democratic paradox is a distinct contribution to the democracy debate, providing a level of sophistication about the complexities and contradictions of power in conflict-based land management decisions. Given the nature of conflict in environmental management, agonistic democratic theorists and dissent-based conservationists call for acknowledging this paradox in order to navigate ‘wicked’ environmental debates with inherent tension between private minority interests and popular sovereignty (Mouffe 1999; Cox 2007; Peterson MN et al. 2007).

This condition is central to the debate regarding U.S. agency decision-making and collaborative management models that are increasingly proposed to eliminate conflict between different stakeholders, including local interests and nationally dispersed interests. Cox identified this “inherent tension between the discourses of ‘liberty’ (individual rights of speech, press, property, etc.) and ‘equality’ or the will of popular majorities... [that requires] instead, a process of conservation management that takes the idea of ‘bounded conflict’ as its guiding assumption” (2007:17). As discussed below, new calls for “dissent-based conservation” are directly informed by political theory that encourages conflict, or at least the acknowledgement of difference, for resource management controversies (Peterson 2006).

Radical Democracy

To understand the elements of agonistic pluralism, it is important to explain the radical nature of direct democracy by individual, unaffiliated citizens. In *Hegemony and Socialist Strategy* (1985), Ernesto Laclau and Mouffe presented a political theory of “radical democracy” to explain the failure of Marx’s prediction of the inevitable collapse of capitalism (otherwise known as the crisis in Marxism). Following Gramsci’s (1926) notion of hegemony, Laclau and Mouffe acknowledge the fundamental role of government as a collective ordering of power, requiring a “radical democracy” to displace “the traditional relation between democracy and power” (2000:14).

Laclau and Mouffe address hegemony through an analysis of “articulation theory,” based on Gramsci’s *Notes from Prison “Italian Peasants”* (1926), which replaced the idea of an inevitable collapse of capitalism with a conception of ongoing struggle over power and social norms. Laclau and Mouffe’s theoretical position was based on the central thesis “that social objectivity is constituted through acts of power. This implies that any social objectivity is ultimately political and that it has to show the traces of exclusion, which governs its constitution” (Mouffe 2000). In short, radical democracy explains how agonistic democracy practice provides a space for individuals to challenge the socially constructed reigns of power with more direct, participatory forms of democracy. Instead of an implosion of modern capitalism, Laclau and Mouffe focus on the “polyphony of voices, each of which constitutes its own irreducible discursive identity” (1985:191) in democratic societies as having authentic radical potential.

The 'radical' democratic model, therefore, is the acknowledgement of difference and pluralism, or "the political," at the intersection of power, conflict, and antagonism (2005: 9). "Radical democracy," writes Mouffe, "demands that we acknowledge difference" (26), which presents "a new way to think about democracy which is different from the traditional liberal conception of democracy as a negotiation among interests and is also different to the [deliberative democratic] model which is currently being developed by people like Jürgen Habermas and John Rawls" (2000:4). This radical form of democracy, according to Mouffe, is positioned in the realm of politics and administrative decision-making, in which "the 'other' is no longer seen as an enemy to be destroyed, but as an 'adversary,' i.e., somebody with whose ideas we are going to struggle but whose right to defend those ideas we will not put into question (2000)." Conceived through the lens of radical democracy, public participation in agency decision-making influences management by acknowledging conflict as inevitable, decisions as temporary, and the 'other' as worthy opponents to be directly challenged in the agonistic 'contest' over policy.

Instead of resolving conflict through consensus-based deliberative processes, Mouffe calls for an appreciation of legitimate difference as an inherent condition for liberal democracies made up of multiple identities. While difference is conceived under deliberative democracy as an impediment to be dismissed or eliminated through consensus-based processes, the nature of pluralism featured by most western democracies, according to Mouffe, requires "an appreciation for a diversity of values and identities, the symbolic ordering of social relations" (2000:25). This contrasts

starkly with collaborative trends in management seeking to find and defend the lowest common denominator through consensus-based negotiations (McClosky 1999, 2005; Coggins 1999, 2001).

The lack of closure in political debates, or the "ongoing confrontation" between different segments of society (e.g. conservation and resource interests) is evidence of a healthy democracy (Mouffe 2000); not a justification for restricting public participation in agency decision-making (McCloskey 1999, 2005; Coggins 1999, 2001; Manring 2004, 2005). This alternative to the dominant aggregative pluralism model (conventional interest representation) and deliberative democracy instead presents democratic participation as a "vibrant clash" where power and antagonisms are identified and transformed to positively affect the public interest (Mouffe 2000).

Under agonistic pluralism, radical democracy allows for the transformation of antagonistic relationships between enemies into 'agonistic' struggles between adversaries deserving respect (Mouffe 2000). "To come to accept the position of the adversary is to undergo a radical change in political identity, it has more of a quality of a conversion than of rational persuasion" (755). Given that conflict between diverse groups is considered an inevitable, even desirable, condition in modern democratic societies, this theory helps explain how administrative processes for public participation can correct overrepresentation by resource interests by more fully engaging individual citizens in negotiation, argumentation, and open debate. "Developing and working through bounded conflict enables participants to explore ways their fundamental

differences actually bind them together as part of a larger, not necessarily unified, whole” (Peterson 2004:758).

Dissent-Based Conservation

Agonism and radical democracy informs the corresponding management practice called “dissent-based conservation,” in which individuals “challenge assumptions, debate scientific claims, identify areas of disagreement, and critically examine participants’ reasoning” (Peterson MN et al. 2006:576) through direct contest or argumentation to arrive at the most democratically healthy outcome. Dissent-based negotiations and other direct participation models (Sirianni and Friedland 1995, 1997; Abel and Stephen 2000) are especially relevant to “multiple-use” management controversies where intractable conflicts exist between competing segments of the public (Coggins 1999; Moote and McClaran 1997; Peterson MN et al. 2005, 2006, 2007; Peterson T et al. 2006). These issues require “mechanisms for direct participation and not representative forms ... innovative efforts that stand in contrast to environmental policy driven by national experts, interest groups, or social movements” (Abel & Stephan 2000:615).

Following agnostic pluralism, dissent-based conservation management strategies are informed by analysis of the democratic paradox, and downplay expectations for permanent solutions to the 100-yr old conflict over federal land management. “Conservation policy within contemporary democracies must, however, negotiate the complex relationship between equality and liberty, rather than attempt to avoid this relationship” (Peterson 2004). An understanding of this paradox in agency decision-

making addresses the difficulty in balancing frequently incompatible demands from different stakeholders, including private interests favoring extractive use and the general public's interest in ecologically appropriate conservation management (Hays 1959, 2007; McConnell 1966). Dissent-based dissertation acknowledges that "bounded conflict is particularly and uniquely appropriate for managing environmental conflicts in liberal democracies because its practice requires that society be sufficiently open to allow political competition, yet sufficiently stable to render such competitive engagement safe" (Peterson 2004:758)

These conflicts may occur between citizens and administrators, as well as among citizens themselves, which agonists believe requires non-coercive, open debate without commitments to illusiveness of permanent solutions. "This debate can only develop within a social environment that encourages participants to engage in argumentation. Meaningful engagement in argumentation requires participants to fully explain their own perspectives to those with opposing views, as well as to actively listen to opposing viewpoints with the goal of understanding those perspectives" (Peterson 2004:578).

This is especially relevant to the current debate over participatory democracy theory and the longstanding conflict in over national forest decisions, beginning with the "classic confrontation" between Pinchot and Muir (Callicott 1999) and continuing today with the debate over "analysis paralysis" (Bosworth 2002) and citizen participation through official comment and administrative appeals processes (Manring 2004, 2005; Teich et al. 2005)) (see Chapter Four).

Limits of Deliberative Democracy

Agonistic pluralism theory speaks directly to the debate in the conservation and policy literature relating to deliberative democracy and consensus-driven, collaborative decision-making (McCloskey 1997, Coggins 1999, Teich 2000; Vaughn and Cortner 2005; Manring 2005; Peterson MN et al. 2005, 2006, 2007; Peterson T et al. 2006). In Mouffe's paper, "Deliberative Democracy or Agonistic Pluralism," (1999) she argues that direct, radical democracy is a suitable alternative to deliberative democratic theory and the dominant interest group pluralism, because, according to Mouffe, they fail to acknowledge the democratic paradox or the irreducible nature of conflict in modern liberal democracies. It is this failure, according to Mouffe, that prevents the development of a more adequate model of democratic politics. "One of the shortcomings of the deliberative approach is that, by postulating the availability of a public sphere where power would have been eliminated and where a rational consensus could be realized, this model of democratic politics is unable to acknowledge the dimension of antagonism that the pluralism of values entails and its ineradicable character" (Mouffe 2000).

Given the limits of deliberative democracy and consensus-based decision-making, agonistic pluralism develops an understanding of the problems involved when commercial interest are invited to collaborate over publicly held resources (Coggins 1999, Moote and MaClaran 1997; Peterson MN et al. 2005, 2006, 2007; Peterson T et al. 2006). Acknowledging conflict among participants, interest groups, and government administrators, argumentation and dissent-based negotiations promotes improved

communications and an appreciation of difference as a healthy tension, not an obstruction to some potential future scenario.

Mouffe specifically addresses this inability to address this irreducible character of the democratic paradox as a fundamental shortcoming to deliberative democratic theory. “It is the incapacity of democratic theorists and politicians to acknowledge the paradox of which liberal-democratic politics is the expression which is at the origin of their mistaken emphasis on consensus and sustains their belief that antagonism can be eradicated” (2000:8). According to Mouffe, deliberative political theorists mistakenly attempt to reach agreement and reconcile fundamentally different interests (e.g. ecological and commercial forestry), and they approach conflict with mistaken assumption that a universalist-rationality, or ultimate, objective truth will emerge (Peterson 2004).

Mouffe is also critical of the deliberative democratic emphasis on consensus-based decision-making, which is also a central component of collaborative management. Concerned with the potential for coercion and the pressure to reach agreement when fundamental values are in conflict, Mouffe points to Wittgenstein’s criticism about consensus, who wrote, “Where two principles really do meet which cannot be reconciled with one another, then each man declares the other a fool and an heretic. I said I would ‘combat’ the other man, but wouldn’t I give him reasons? Certainly: but how far do they go? At the end of reason comes persuasion” (1969:81). Consensus-based decisions in such circumstances are usually products of power or clever rhetoric instead of genuine consensus. According to Mouffe, consensus is only made possible by

shutting out interests from the deliberative process, and these exclusions create “antagonisms” that produce artificial closure or assign permanent solutions to incomplete consensus. By acknowledging limits in conflict, “antagonism is constitutive and irreducible” in democratic society and instead requires an understanding of the dynamic tension between diverse groups in a pluralistic democracy.

Furthermore, deliberation and consensus-based decision-making can rarely move people to abandon fundamental value differences, especially when publicly held resources are at stake (Gastil and Levin 2005). Mouffe addressed this inherent dilemma for deliberative democrats, rejecting Rawls’ and Habermas’ position “that consensus is possible if people are only able to leave aside their particular interests and think as rational beings. However, while we desire an end to conflict, if we want people to be free we must always allow for the possibility that conflict may appear and to provide an arena where differences can be confronted” (Mouffe 2007). Rejecting the perspective that government decision-making can be improved with the right (universal-rational) consensus-based design, agonistic and dissent-based approaches to conservation may be preferable given the potential for false consensus in deliberative decision-making to backfire once issues boiling below the surface inevitably emerge (Peterson 2004).

Limits of Collaboration Management

Many authors agree the operational implementation of deliberative democracy (collaborative management) faces significant hurdles in its application to national forest management, including internal agency inertia against new processes (Lawrence et al. 1997), problems attracting the attention of the general public (Stankey 2003), and the

requirement to rely on local stakeholders (Coggins 1999, McCloskey 1999, Petersen MN et al. 2006, 2006, 2007). The “who, what, where and how of governing are, by their very nature, highly political. They reach to the very core of the nation’s democratic and federal system of government and to the balances struck among levels and branches of government and between citizens and their government” (Vaughn & Cortner 2005:3). The following section of this paper will provide a critique of collaborative democracy as a model of consensus-based, deliberative processes for U.S. federal agency decision-making in national forests. According to Cortner (1999:48), “The current popularity of the community/collaborative model of decision-making, after all, is a product of centuries of experimentation and learning, and is undoubtedly a step to a yet unknown preferred future form of governance and problem-solving.”

While this “deliberative turn” (Dryzek 1990) in agency decision-making has translated into more collaborative planning projects for U.S. National Forests, it is unclear whether the process actually conforms to Habermas’s deliberative democracy theory. Collaborative management principles relating to participants with a personal interest at ‘stake’ runs counter to the deliberative democrats’ emphasis on “subjectless communication” (Habermas 1989) or the rational decisions informed by a universalist truth (Rawls 1971). Modern collaborative management is inconsistent with the deliberative emphasis on an “ideal speech situation,” in which citizens deliberate without the influence of personal interests or the erosion from “systematically distorted communication” (Habermas 1981). The stakeholder approach proposed for modern collaborative management fails to consider Rawls’ process by which individual citizens

deliberate “behind a veil of ignorance,” or Habermas’ “subjectless communication” — each requiring each stakeholder to overlook their own selfish interests for the larger project. In short, collaborative decision-making’s reliance on individuals with direct interests at stake runs counter to the tenets of deliberative democracy.

Additionally, “wicked” public participation processes described in the resource management literature (Allen and Gould 1988) are magnified, not eliminated, by collaborative national forest planning. In Coggins’ article about forest planning in California, he rejects the claim that collaboration helps build rational decision-making, calling the “assumption demonstrably false [considering the] disproportionate number of every kind of obdurate extremist, demagogue, and outright crook” involved in agency decision-making (1999:607). Coggins and others reject the assumption that participants will act reasonably and rationally (Rawls 1971; Habermas 1975), see all sides (Gastil 2000), or find the best mutually agreeable compromise or “best solution” (Rawls 1971).

There is also extensive debate in the anthropological, cultural studies, communications, conservation, and policy literatures about the definition and meaning local. Similar to the way the “gaseous” public interest remains a slippery subject criticized by pluralists (Stewart 1975), few authors agree on how to precisely describe the “local” interest identified by collaborative management. Definitions include all stakeholders engaging in the deliberative process or only individual local participants, and the term is often interchangeable with “community based,” “place-based,” and “grassroots” throughout the conservation and resource management literature. In

some studies, local is defined as in-state (Steelman 1996) while others focus on the watershed level (Snyder 1993).

The shift of power to local stakeholders, according to McCloskey's early critique of collaborative management, is a "prescription for frustrating the national will of the majority [and] subvert basic tenets of democracy and nationhood" (1999:427). Calls for local stakeholder control often accompany proposals to abandon established decision-making processes for consensus-based models that "displace this national constituency and transfer control to the local level" (McCloskey 1999:624). Collaborative proponents often call for limiting participation by 'outsiders' who are not granted stakeholder status. Although Coggins argues that "when the nation's lands and resources are at stake, there are no outside interests" (Coggins 1999:807), a November 2007 editorial in the *Arizona Daily Sun*, for example called environmental groups "outsiders" three times while lamenting the failure of collaborative management decision-making.

Criticisms of the "local" legitimacy assumption are found in the different literatures and illustrate the challenge in applying collaborative decision-making processes to federal lands. As McCloskey warned, "Without purporting to represent all claims, any legitimacy the collaborative process might claim is lost. Some are seeking to resolve this dilemma by engineering a conscious transfer of power. They want to shift the focus from national policy making to one focused on rural regions and to citizens close to the sites affected. With regard to federal land management, they want to reverse the trend toward national control and revest control in local hands" (2000:426). McCloskey argues devolving control to local interests means that negotiations will limit

participation by 'outsiders,' "displace this national constituency, and transfers control to the local level...Local control is really about promoting the agenda of the business community" (1999:624). Many scholars believe this shift of power to local stakeholders is a ruse to subvert established environmental laws and reverse progress made through citizen participation.

The literature also describes other objections to collaborative management based on the capacity of individuals or public interest groups to participate in collaborative processes (McCloskey 1999, Kerr 1999, Manring 2004). The processes often disadvantage groups and citizens who are untrained in professional negotiating (Kerr 1999; Abel and Stephan 2000), have limited budgets prohibiting participation in "interminable meetings" (Manring 2004); and often live in urban areas while resource interests are generally able to shift resources to geographic areas where they intend to invest (Kaufman 1960; McCloskey 1999). Critics of the collaborative management model identify the emphasis on local stakeholders as disenfranchising national public interests represented by organizations or individuals that are prevented from participating if local status is required (McCloskey 1999). The "very name of these forests... [means] all of us decide how these forests should be managed when we vote in national elections... [which] serves as a mechanism of democratic accountability to a national constituency (McCloskey 1999:624).

As James McCarthy argued in "Devolution in the woods: Community forestry as hybrid neoliberalism" (2005), collaboration fails to provide solutions for local management and instead helps resource interests and the "ascendancy of particular

forms of neoliberalism” (1995). The Bush Administration's HFI proposals, according to McCarthy, “make clear the links to a broader logic of neoliberalism” (1000) draped in a “soft-edged rhetoric” of collaborative management. McCarthy sees this as a “benign front” concealing trends in federal lands management toward privatization of public resources, shifts from binding standards to “neo-corporatist” frameworks of voluntary compliance and self-regulation, and an antagonism towards scientific or governmental interference in the free-market (McCarthy 2005:276).

These criticisms are also consistent with findings in Hibbard and Madsen’s (2003) study of two collaborative management projects (e.g. California’s Quincy Library Group (QLG) and the Applegate Partnership in Oregon). While the authors found some qualified support for collaborative management, Hibbard and Madsen’s study documented how the majority of conservation groups involved in these high-profile case studies expressed “worry that place-based collaboration is a tool of industry that threatens the current regulatory framework. These skeptics also fear that collaboration will draw environmental activists away from tested tactics [comment and appeal] into uncharted waters” (2003:708). Unlike those who believe in handing control to local stakeholders to overcome “analysis paralysis” in national forest management (Bosworth 2002; Wondolleck 1996, 1999, Cheng & Fiero 2003) opponents fear, as McCloskey warned, “in reality, however, ‘breaking deadlocks’ means getting timber production back into high gear. Local control is really about promoting the agenda of the business community” (1999:624).

In Moote and McClaran's study on the application of collaborative management to public lands projects (1997), the authors identify several challenges facing the implementation of deliberative decision-making for national forest management. According to the authors, collaboration is problematic because, 1) greater public involvement in land use planning does not automatically create consensus; 2) participants cannot overcome complicated logistical and financial hurdles; 3) many disputes entail fundamental, individual values and disagreements about conservation and resource management, not misunderstandings; 4) continuity of public participation is undermined by participant burnout or procedures that bring closure to the project despite continued conflict; and 6) statutory and legal history prevent completely sharing the control of decision-making power over national forests (1997).

Another criticism in the literature relates to the 'devolution' or shift of decision-making power to collaborative management as a shirking of agency responsibility (Coggins 1999). This criticism of collaboration relates to federal laws that prevent agencies from lawfully delegating public land management decisions entirely to 'local' stakeholders (Coggins 1999, McCarthy 2000, 2004, 2005). Although federal statutes prevent the delegation (or 'devolution') of power over national forests "unelected, unappointed local citizen councils... devolved collaboration has become the latest ideological fad in federal land management" (Coggins 1999:602).

The literature includes several studies describing collaborative management as an incomplete model in need of further development "to address logistical and legal barriers to participatory public land planning and decision-making" (Moote and

McClaran 1997:473). The Federal Advisory Committee Act (FACA) (Pub. L. 92-463, Oct. 6, 1972), for example, governs the behavior of advisory committees with jurisdiction over partnerships and environmental decisions. According to Moote and McClaran (1990: 478), “FACA has been interpreted to require that all planning and decision-making groups in which federal agencies take part follow the open meeting and public disclosure requirements of advisory committees under the act.”

The law requires federally related planning and decision-making to follow open meeting and public disclosure requirements and mandates that federal agencies to withdraw membership from processes if the group does not meet FACA’s procedural requirements. FACA has forced federal agencies into withdrawing membership in collaborative management processes out of fear from being sued for becoming involved in, or taking advice from a group that does not meet the strict procedures of the Administrative Procedures Act (5 U.S.C. §§ 706, 551:13). FACA also has strict conflict-of-interest prohibitions that limit the degree to which private interests can participate in projects in which resource extraction benefits negotiating corporations or individuals. FACA requires, for example, that committees need “appropriate provisions to assure that the advice and recommendations of the advisory committee will not be inappropriately influenced by the appointing authority or by any special interest, but will instead be the result of the advisory committee's independent judgment.” (FACA, § 5, part 3)

While collaborative planning processes are described by some as a new paradigm for national forest management (Wondolleck 2000) that produces better

decisions (Leach 2005) and reduces conflict (Wondolleck 1996, 1999; Cheng and Daniels 2003), these outcomes appear to be rare (Hendriks 2002). Most importantly, there is little evidence that decisions produced through so-called collaboration actually results in better conservation practices, and instead are the products of coercion and power that displaces rational consensus (Knopp and Thomas 1990; Abel and Stephan 2000).

“Consensus-building shifts the ultimate goal away from reaching quality decision and moves it toward reaching a merely agreeable one,” writes Coglianese. “They can lead to policies that are based on cumbersome compromises of principles, the lowest common denominator, and on the most tractable but least important issues” (1999:32).

Despite these shortcomings and legal barriers to implementation, many proponents of collaboration believe deliberative theory satisfactorily addresses the limits of conventional pluralistic forms of administrative decision-making (Wondolleck 1996, 1999; Wondolleck and Yaffee 2000; Cheng and Daniels 2003, Leach 2005). Calls for deliberative democracy continue throughout the resource and conservation literature, in which proponents favor more decentralized, devolved collaborative processes informed by local stakeholder and consensus-based decision-making. While deliberative democracy and collaboration informs decision-making by foregrounding the role of local stakeholders in conservation debates, many believe these models are inadequate post-pluralistic models. Given this disagreement, it is difficult to determine how well deliberative democratic theory informs collaborative management as a model for public participation in agency decision-making in U.S. National Forests.

Thomas and Koontz's 2006 paper addressed similar questions, arguing that little to no empirical study has addressed whether collaborative management actually produces better environmental outcomes. "Many tout the benefits of collaborative environmental management as an alternative to centralized planning and command and control regulation, but the excitement over collaborative processes has not been matched by evidence that these processes actually improve the environment" (Thomas and Koontz 2006:111). These critics have called for more research to address the environmental effects of these processes. Chapter Seven provides an analysis of collaborative management in North Carolina from 2003 through 2008.

CONCLUSION

This review of the policy and conservation literature allows for an exploration of the prevailing decision-making processes present in national forest management in North Carolina under the Healthy Forest Initiative. The current study used characteristics in Table 1 to provide a framework for evaluating whether elite, pluralistic, deliberative, or agonistic democratic theories most adequately explained the processes for 67 HFI projects issued in North Carolina.

Table 1. Characteristics Of Elite, Pluralist, Deliberative, And Agonistic Democratic Theories *				
	ELITE	PLURALISTIC	DELIBERATIVE	AGONISTIC
ROLE OF THE PUBLIC	Limited/Passive	Represented by interest groups	Represented by stakeholders	Active Citizens
LOCUS OF POWER	Vested in Elite	Vested in interest groups	Stakeholder Collaboration	Vested in Individuals
VALUE OF DEMOCRACY	Instrumental; as a means	Instrumental	Intrinsic	Intrinsic
VIEW OF FOREST SERVICE	Idealistic. Trusting and competent	Moderates the Political Arena	Devolved	Skeptical
PRIMARY CONCERN	Efficiency and stability	Political Accountability	Conflict resolution	Growth of Individual
LOCUS OF PARTICIPATION	Voting, ratifying leadership	Interest group negotiations	Consensus driven Local deliberation	Local participation, Dissent-based negotiation, argumentation
VIEW OF THE PUBLIC	Disinterested Skeptical, Malleable, Apathetic, Uneducated	Disinterested Skeptical, Malleable, Apathetic	Legitimate, Knowledgeable	Legitimate, Knowledgeable, Diverse, Active
* Adapted from Steelman (1996)				

Characteristics from these democratic theories, described in Table 1 provide a design, adapted from Steelman's study (1996) using two categories (elite and participatory), to determine which model best describes the democratic processes present in national forest planning under the Healthy Forest Initiative from 2003 through 2008. Chapter Nine concludes this dissertation with a determination of the prevailing decision-making process (and forest management, see Chapter Four), based on analysis found in Chapter Seven and Eight.

CHAPTER THREE: RESEARCH DESIGN AND METHODOLOGY

INTRODUCTION

This dissertation explored variations of democratic theory from the policy and conservation literature to develop an understanding of the processes present in Forest Service management of North Carolina's national forests under the Bush Administration's Healthy Forest Initiative from 2003-2008. This management is then evaluated based on the conservation outcomes occurring under the prevailing democratic theories. Project-level decision-making for national forests was selected as the unit of analysis for this study. This topic is timely given the substantial use, public participation, and controversy surrounding national forest management in the United States. North Carolina's federal land was selected as the case study for ecological, pragmatic, and theoretical reasons based on the unique status of the states' Croatan, Nantahala, Pisgah, and Uwharrie National Forests.

To determine which democratic decision-making processes were present under the Healthy Forest Initiative in North Carolina, public files for each site-specific project obtained through a "Freedom of Information Act" (Public Law 89-554, 80 Stat. 38) (FOIA) request to conduct an analysis of the process, participant, policy, and project

characteristics. Methods for this dissertation included records research, content analysis, and archival analysis that were used to collect, analyze, and explain the relevant characteristics present during “pre-decisional” and implementation processes for 67 projects authorized in North Carolina from 2003 through 2008.

THE CASE STUDY METHOD, SELECTION OF SITE-SPECIFIC MANAGEMENT, AND NORTH CAROLINA’S NATIONAL FORESTS

Although there is a long history of public participation in decision-making in the United States, citizen involvement in environmental decisions is rare given the level of ecological change occurring without formal or direct involvement by independent citizens or interest groups (National Research Council 2008). Law governing Forest Service decision-making, however, is unique for the substantial access and oversight offered to the public for forest-wide and project-level management relative to other environmental decisions that proceed with no public participation. In fact, the Forest Service is the only federal agency in the country with statutory language specifically requiring an administrative appeals process for project-level decisions (Coulombe 2004). Public participation is a useful indicator for analyzing democratic theory, and the Healthy Forest Initiative provided a worthy case study to explore the strengths and weakness of elite, pluralistic, deliberative, or agonistic democratic theories.

According to a GAO study of vegetation management CE projects in the United States from 2003-2005 (GAO 2007), of the nine regions governed by Forest Service, the agency approved the largest number of project-level CE decisions in the Southeast

(Region Eight), with 633 CE projects covering 1,608,973 acres. This accounts for more than twice the average of CE projects per region. Of all CE's issued nationwide from 2003-2005, the GAO found Region 8 accounted for over 29 percent of the projects nationally. The GAO also showed that for the number of CE's proposed from 2003-2005 in North Carolina (n=32) was well above the national average by individual forest (20) and was the median compared to other forests in Region Eight.

In Region Eight, North Carolina's 1,251,710 million acres of national forests also contain the most representative sample of the geographic and demographic variation among the southeastern federal land, with four national forests covering the Southern Appalachian Blue Ridge, Piedmont, and Mid-Atlantic Coastal ecoregions (Griffith et al. 2000). No other state in the region contains all three forest types. The state also has highly-populated cities within a one-hour drive distance of each forest. Finally, the Pisgah National Forest is ranked second behind the Angeles National Forest in California as the most heavily visited national forest in the country.

North Carolina also has a unique history with respect to active citizen involvement in Forest Service management. This includes controversy over an appeal over the 1987 Forest Planning process (Syden 1998), the 1997 Bluff Mountain controversy in Hot Springs North Carolina (Syden 1997), and a 1999 forest-wide moratorium on logging in the Nantahala National Forest after the discovery of undocumented endangered Indiana Bats (Bagby 1999). This rich history of public participation in national forest management in North Carolina provided for an uncommonly large number of public comments (n=171) for the CE project-level

decisions relevant to this research. This level of participation is substantial given the obscure and expedited CE approach that theoretically do not “individually or cumulatively have a significant effect on the quality of the human environment” (40 CFR 1508.4).

Case-study methodologies were appropriate for this dissertation due to the attention to decision-making processes used by bureaucratic federal agencies (Patton 1980; Yin 1980). “Federal agencies have made surveys and questionnaires a bureaucratically hazardous affair due to the clearance procedures required. Case studies have therefore become the preferred method” (Yin 1980). Furthermore, case studies provide an empirical approach for investigating “a contemporary phenomenon within its real-life context” using “multiple sources of evidence” (Yin 1980:13, 97). Unlike descriptive or exploratory case study methods, this dissertation relied on an explanatory case study design aimed at documenting competing structures or processes of decision-making under elite, pluralistic, deliberative, or agonistic democratic theories to determine which model most adequately described the process of public participation under the Healthy Forest Initiative in North Carolina.

This dissertation investigated the presence of decision-making and forest management characteristics in 67 site-specific project-level actions in North Carolina from 2003-2008, using records research, content analysis, and archival documents. The Forest Service is required to maintain a project file for each proposed project, which includes documentation of the scoping process (public participation), the potential

extraordinary circumstances present in the project area (documented in an “Biological Evaluation”), and a notice of the final decision (Decision Memo).

First, records research was used to identify and obtain primary source records. This allowed for a process of discovery of 67 project files from the Forest Service’s regional, state, and district offices. Next, a content analysis was used to catalogue process and participant characteristics present in 171 individual comments sent to the Forest Service during what is known as the pre-decisional public scoping period. Finally, archival analysis used published newspaper announcements, notarized correspondence, and letters mailed to interested parties. Archival documents were used to verify data obtained during the records research and content analysis methods. These strategies allowed for a “triangulation” of data types to strengthen the research design (Patton 1980; Yin 1980).

The majority of public comments analyzed for this study were received by the Forest Service during the NEPA required “scoping” of the public attitudes. This process is limited to providing information in short announcements in local papers and brief letters sent directly to members of the public who have previously expressed an interest in Forest Service management and are presently on the agency’s mailing list. This official scoping process, required by the NEPA, was the only process available for the public to address HFI projects until federal district and appeals courts (*Earth Island v Ruthenbeck* 2005) invalidated portions of the HFI. After three years when the HFI was in use, this ruling effectively returned the right of administrative appeal guaranteed by the National Forest Service Decision-making and Appeals Reform Act (ARA).

Records Research

Records research and archival document analysis were used to identify and verify each individual project-level CE management action in North Carolina beginning in 2003 with the promulgation of the Healthy Forest Initiative. This included discovery and analysis of public and internal Forest Service and General Accounting Office (GAO) publications and databases to document the names and locations of North Carolina's 67 vegetation management CE projects.

Until 2009, the Forest Service maintained no central database of vegetation management projects occurring across the different national forest districts. Instead, the Forest Service published quarterly listings, or a "schedule of proposed actions" (SOPA), on a non-standardized and inconsistent posting on the Forest Service's website. The SOPA postings were difficult to use because, during the course of this study, many postings about projects were found to be inaccurate, incomplete, and poorly identified. The information was useful, however, in providing a rough list of the vegetation management CE projects in NC.

Next, this study used a 2007 GAO compendium of all Forest Service projects nationally from 2003-2005 to improve and verify the original list based on SOPA postings in the four national forests in North Carolina. On March 25, 2009, the GAO officially released their new data collection instrument and spreadsheets for the purposes of this dissertation, and a quick comparison between the GAO's data and the SOPA-based list uncovered several projects missing from each source. The GAO study, based on surveys of the Forest Service, only identified 32 out of 48 vegetation

management projects in North Carolina for calendar years 2003-2005, including several controversial “Southern Pine Beetle Prevention” projects that were clearly identified in the Forest Service SOPA.

During the summer of 2009, the Regional 8 Headquarters in Atlanta, GA disclosed that the Forest Service had a new internal database (separate from the GAO) of all management projects, called the Planning, Appeals, and Litigation (PAL) tracking system. On June 19, 2009, employees from the Forest Service Supervisors Office in Asheville, NC ran a report of PAL of all CE projects from in the Croatan, Pisgah, Nantahala, and Uwharrie National Forests beginning in 2003, and released a digital copy of the report for this dissertation. This report was then culled to document and verify all vegetation management CE projects in North Carolina, which produced a total population of 67 projects.

After a July 6, 2009 Freedom of Information Act (FOIA) request was filed to obtain copies of the individual project files listed in the PAL report, the Forest Service Region 8 Headquarters in Atlanta approved the FOIA and determined that the research adequately met the criteria for a fee waiver. Based on the FOIA agreement, the Forest Service was required to release all vegetation management CE’s identified in the PAL database, although the agency was not required to provide non-HFI prescribed burns or maps of the specific projects. On October 2, 2009, the Supervisors Office began releasing copies of the individual project files listed in the FOIA.

Based on the project files obtained for this study through FOIA, this dissertation collected public comments (n = 171), environmental surveys, and internal Forest Service

correspondence documented in the public record. On December 1, 2009, the final project files were received from the Forest Service. Policy and project characteristics (analyzed in Chapter Eight) were identified through an analysis of the Decision Memos (DM) and Biological Evaluations (BE) to determine the nature of the individual projects with respect to the size, location, and composition of rare-species identified in each project. The Forest Service tracks rare species called “Proposed, Endangered, Threatened, and Sensitive” (PETS) for each project. Then, NEPA requires the Forest Service to document the BE in the public record, and the final decisions (DM) discusses the public comment, the BE, and other surveys (e.g. archeological). Unlike an environmental assessment (EA) or environmental impact statement (EIS), a categorical exclusion is exempted from more rigorous analyses if the Forest Service determines no extraordinary circumstances or potential significant issues were identified in the surveys and scoping process. Chapters Five and Six discuss the rules governing CE management projects for U.S. National Forests.

These data collected during records research were analyzed in Chapter Eight to determine the ecological outcomes of the individual Forest Service CE projects. The prevailing management type was understood as a function of the policy and project characteristics (Figure 3). The type of management for each project (either commodity forestry or ecological forestry) depended on where it was proposed, what type of CE classification and stated purpose was used, and when the projects occurred (see discussion below).

Content Analysis

Content analysis is a common research methodology for natural resource policy, and it has been used to measure attitudes about a number of different environmental cases, including measuring attitudes toward animals (More 1977), wilderness areas (Fazio 1979), and management proposals (Stankey 1972). Berelson presents a commonly cited definition for content analysis as “a technique for the objective, systematic, and quantitative description of the manifest content of communication” (1952:18). Stempel described the objective as defining categories so different coders can get the same results consistently, and the “results depend upon the procedure and not the analyst” (1989, p. 125). Manheim and Rich (1981) defined this process as the “systematic counting, assessing, and interpreting of the form and substance of communication,” which can be used to provide a set of methods for summarizing direct physical evidence (behaviors and relationships) of political actors. As long as a researcher has access to the primary documents, content analysis can be used whenever there is a physical record of communication among participants.

A content analysis of the management proposals and comments documented in the project files was conducted to determine the process and participant characteristics for each project. This followed Stankey ‘s (1972) four steps for selecting the appropriate categories for considering process and participant characteristics, including 1) Who commented on the management proposal; 2) What they said; 3) Why they said it; and 4) Where the response came from (1972: 149). More broadly, Burrus-Bammel et al.’s methodology (1988) was used following five steps for content analysis research: 1)

defining the population; 2) determining the sample; 3) isolating the unit of analysis, 4) undertaking the substantive or structural content analysis (encoding the data), and 5) coding the statistical analysis (1988:33). This process mirrors other studies in the policy and conservation literature that relied on content analysis (Fazio 1979; Ferguson 1981; Nachmias & Nachmias 1987; Denq 1990; Oh 1992; Steelman 1996).

A coding sheet was adapted from Steelman's 1996 study of public comments made during the Monongahela National Forest planning process, and was modified to address specific characteristics of the North Carolina process. A pretest was conducted on the modified coding sheet for inter-rater reliability using the Kappa statistic, and the test found substantial agreement among coders (.72 Cohen's Kappa). Coding began during the first week of October 2009 and continued for eight weeks until 171 comments were coded. A copy of the coding sheet is included as Appendix D.

To describe the data set, the results of the content analysis and records research were imported into Microsoft Excel to produce percentages and totals for analysis. These data were then imported into Microsoft Access to provide for additional analysis based on relationships between different tables and variables. Finally, the statistical software R 2.10 (RDevCor 2009) was used to test hypotheses relating to participation predictions and project frequency identified in Chapter Seven and Chapter Eight. Contingency tables were created using outputs from Excel and Access, and were then used in R 2.10 to test for independence and goodness of fit using chi-square to determine the variables which contributed to significance.

CONCEPTUAL FRAMEWORK

The conceptual design for this research held that the type of decision-making structure used by the Forest Service is understood as a function of the process and participation characteristics (Figure 2). Under this framework, process characteristics were envisioned as a function of general scoping (National Environmental Policy Act), administrative appeal (Forest Service Decision-making & Appeals Reform Act), and Collaboration (Healthy Forest Initiative). Additionally, content analysis was used to identify the participant characteristics of the public reaction to individual CE projects in North Carolina, which was understood as a function of who the commenter was (Affiliation, Representation, and Locus), what the comment said (Attitude, Source of Concern, and Potential Effects), and how the comment was delivered (Vehicle, Style, Detail, and Length).

Decision-Making Process

To document the decision-making structures (elite, pluralist, deliberative, agonistic) present in North Carolina's national forest management during the period in question, this dissertation focused on process, participant, policy, and project characteristics of individual vegetation management CE projects. In Chapter Seven, the dissertation provides an analysis of the pre-decisional process and the participants involved to determine which democratic decision-making structure was present. Figure 2 provides a description of the process and participant characteristics.

Figure 2. Conceptual Framework For Research Design: Decision-Making Process.		
Decision-making process = f (Process Characteristics + Participant Characteristics)		
Decision-Making Process	Process Characteristics	Participant Characteristics
Elite Aggregative Pluralistic Deliberative Democracy Agonistic	Scoping Comments HFI Appeals Rule Collaboration	Who participated What they said How they said it

Process Characteristics: Scoping, Appeals, & Collaboration

The Forest Service is required by the National Environmental Policy Act to “scope” the public to determine whether significant issues may be present that would require the agency to conduct an Environmental Assessment (EA) Environmental Impact Statement (EIS). The public is allowed to participate in scoping for all Forest Service actions, including those that are “categorically excluded” from NEPA’s EA process. Even for projects that the agency considers routine (CE’s), it is possible that a citizen may raise issues relating to extraordinary circumstances that would normally require the agency to conduct an EA or EIA. This automatic trigger by an extraordinary circumstance was eliminated by the Bush Administration as part of the first rule change under the HFI (see policy characteristics below).

In addition to “pre-decisional” scoping-level comment periods, the public has historically had the opportunity to appeal Forest Service decisions for forest-wide planning and site-specific project-level activity. Under the HFI, however, the administrative appeals process was eliminated for CE projects by the Appeals Rule. This

HFI rule was in effect for less than three years before it was invalidated by federal district and appeals courts (*Earth Island v Ruthenbeck*). After this ruling, the public was allowed to appeal decisions again, although appellants could only gain standing to appeal if they submitted “substantive” comments during the scoping process (§ 215.13(a)). The HFI defines “substantive comments” as those that “are specific to the proposed action, have a direct relationship to the proposed action and include supporting reasons for the Responsible Official to consider” (§ 215.13(a)). Four years after it was established, the substantive comments rule HFI rule was invalidated in *Wilderness Society v Rey* (2006) (See Chapter Six).

Another process characteristics analyzed in this study was the collaborative management process, which relies on deliberative negotiation, involvement of key stakeholders, and consensus-based decision-making to resolve conflict (see Chapter Two). The HFI included new regulations for Categorical Exclusions (CE) and “Goods for Services” (GFS) contracting that required collaborative decision-making for federal forest management (see Chapter Five). Chapter Six analyzes eight projects implemented in North Carolina governed by the new HFI process for collaborative decision-making.

Participant Characteristics

Who, What, and How categories serve as participant variables for this level of analysis. *Who* was defined by *Affiliation, Representation, and Interest Identification*. *Affiliation* was determined using the commenter’s signature or letterhead to identify if they were individuals or if belonged to an interest group, professional association, or

agency (twenty-three groups were present in all comments). If an individual commented on more than one project, they were identified with a unique code. *Representation* was coded based on the commenter's status as representatives of *non-governmental organizations* (NGO), *governmental agencies*, or as *individuals* representing themselves.

Interest Identification classified each comment based on the specific interest expressed in national forest management writ large. Nine unique types of interests were identified for coding, including *Hunters/Anglers* who expressed an interest in game management or management aimed at conserving foraging, migration, breeding or other habitat for game species. A commenter who addressed ecological issues was coded as *Environmental*. *Recreationalists* were coded according to whether they expressed an interest in non-consumptive recreation, such as day-hiking, mountain-biking, and backcountry hiking along the Appalachian Trail. If a commenter expressed an interest in commodity forestry or commercial use, they were coded as *Commercial*. *Professional/Scientific/Historical* commenters were identified based on the direct interests based on their involvement with local research projects or land uses issues regarding archeological or Native American tribal concerns. If an administrator or scientist from a specific North Carolina resource agency commented, it was coded as *State Agency/ Commission*, which included comments from the Division of Water Quality, Department of the Environment and Natural Resources, and, more commonly, the Division of Wildlife Resources. If the commenter was an administrator or scientists from a federal agency, they were coded as *Federal Agency*, including the U.S. Fish and

Wildlife Service and the Division of Coastal Resources. Finally, those who did not specify an interest in any form of national forest management were coded as *None Identified*. A primary interest was determined based on the focus of the comment if more than one interest was identified in national forest management.

Another component under the *Who* category was whether the commenter was local or out-of-state. In this case, *Locus of Commenter* was based on the address on the commenter's envelop or letterhead to determine whether they were *Local*, *Out-of-state*, or *Unknown*. Based on Steelman (1996), the commenter was coded as *Local* if they had a North Carolina zip code, or *Out-of-State* if they used zip code from another state. Of all the comments, only one had no zip code and they were therefore coded as *Unknown*. If the comment was phoned in, the Forest Service usually noted the origin of the commenter, or included a phone-number, from which an area code was used to establish the state from which the commenter was calling.

Under the *What* variable, content analysis of the comments explored the *Attitude, Criticisms, Sources of Concern, and Potential Effects* the commenter communicated to the Forest Service. Participant characteristics (reaction to a project) was coded as support, opposed, mixed, or neutral based on the attitude expressed in comments toward the individual project-level decision. If the commenter showed *support* for the project, they favored the proposal and expressed no criticisms. If the commenter was *opposed* to the project, they identified specific problems with the project or disagreed with the project generally. If the commenter was *mixed* about the project, it meant they supported and opposed different parts of the same proposal.

Finally, if the commenter was *neutral*, it meant they were only acknowledging the project and their right to participate but did not express support or opposition.

Additionally, comments were grouped according to *critical* and *uncritical* categories based on whether or not the commenter provided objections to the project. Comments were also analyzed through another process to identify the specific *subcategories* of problems expressed by the commenter. These subcategories allowed for an exploration of issues presented by the commenter that were not necessarily their primary concern (commenters could address more than one issue or concern). This allowed for additional analysis of the process concerns that were never identified as primary concerns but cumulatively were significant given the large percentage of commenters who expressed concerns about the way the Forest Service involved the public in the process.

Beyond the general discussion of the commenters attitude toward the national forest management, specific *Sources of Concern* were identified to capture the project-specific concerns held by the commenter. These were categorized by *Road Construction, Pre-commercial Thinning, Logging, Prescribed Burns, Other, or None Mentioned*. If the commenter expressed a source of concern, the *Potential Effects* or consequences of the specific concern were coded based on *Ecological Forestry, Aesthetics, Recreation/Hunting, Scientific, Other, or None-mentioned*.

The method in which the commenter communicated to the Forest Service was catalogued under the *How* variable, which included the comment's *Length, Style, Vehicle, and Detail*. The *Length* of the comment was coded based on whether it was a

half, one, two, or was three or more pages. The *Vehicle* of a comment referred to whether the comment was verbal or written. If it was written, the comment *Style* then identified whether it was either handwritten, typed, a form-letter, or other. Finally, the *Detail* of the comment was determined based on whether the comment expressed specific points of support or opposition to the projects. If the commenter failed to identify anything specific about the project and only provided their position in support, opposed, mixed, or neutral, the comment was identified as *No Detail*. If the comment offered no specific comments about the project but discussed the project generally, it was identified as *Generalized*. The commenter was categorized as having *1-2 Topics*, *3-4 Topics*, or *5+ Topics* based on the number of concrete, project-specific issues addressed in comments that went beyond discussing the forest management or the project generally. If the commenter offered a specific criticism or support for project-specific attributes, these topics were captured under the *What* variable (discussed below).

Forest Management

In Chapter Eight, this dissertation follows the analysis of pre-decisional public participation process in Chapter Seven to provide an analysis of the resulting forest management decisions. The chapter includes a discussion of the policy and project characteristics to facilitate an analysis of the Healthy Forest Initiative regulation changes that effect forest management, and the project-level characteristics describing the site-specific effects relating to *where*, *what*, and *when* the vegetation management CE's occurred. Figure 3 provides a summary of the conceptual framework relating to the

forest management taking place under the HFI in North Carolina from 2003 through 2008.

Figure 3. Conceptual Framework for Research Design: Forest Management.		
Forest Management = f (Policy Characteristics + Project Characteristics)		
Forest Management	Policy Characteristics	Project Characteristics
Commodity forestry Ecological forestry	Extraordinary Circumstances Categorical Exclusions	Where project occurred What occurred When project occurred

Policy Characteristics

Chapter Eight explores policy characteristics present in the data set to develop an understanding of forest management under the Healthy Forest Initiative. First, this chapter explores the Bush Administration’s changes to rules governing Forest Service authorities when “extraordinary circumstances” are present. Under the original implementing language, the Forest Service could not implement CE projects if extraordinary circumstances were present in the activity area (40 C.F.R. § 1508.4). Extraordinary circumstances include a list of environmental and cultural issues that, if present in the proposed activity area, requires the Forest Service to conduct a full EA for any national forest management.

The first rule change under the Healthy Forest Initiative was the “Clarification of Extraordinary Circumstances for Categories of Actions Excluded from Documentation in an Environmental Assessment or an Environmental Impact Statement” (67 Fed. Reg. 54,622, 54,622 (Aug. 23, 2002). The new HFI directive revised the Forest Service Handbook (1909.15 Chapter 30) by changing the extraordinary circumstances’

automatic mechanism triggering an EA and replaced it with discretionary language in which the agency was only required to “consider” “resource conditions” to determine whether extraordinary circumstances were present (Huber 2005).

Another important policy characteristic identified in this study relates to the use of new CE’s authorized by the HFI. If the Forest Service determines that specific classes of management have no significant effect, individually or cumulatively, on the quality of the environment, regulations implementing NEPA allow the Forest Service to establish categories of management that are excluded from both the EIS and EA requirements (40 C.F.R. §§ 1507.3(b)(2)(ii); 1508.4.) NEPA requires the Forest Service to conduct an EA for all management except “routine actions that have no extraordinary circumstances” (57 *Fed. Reg.* 43180 (September 18, 1992)).

Under new provisions established by the Healthy Forest Initiative, the Forest Service authorized five new CE’s for hazardous fuels reduction, post-fire rehabilitation, “limited” commercial logging, and weather and insect-related salvage logging (see Table 5). Before the new HFI CE’s were promulgated in the summer of 2003, the Forest Service had existing CE’s for vegetation management exempted from NEPA analysis, including *road rehabilitation, special uses, regeneration, and timber-stand improvements*. The existing CE’s for vegetation management were also modified by additional HFI provisions that released the Forest Service from the administrative appeal process (see Chapter Six). Additionally, all CE’s (new and old) could be authorized by the Forest Service in areas previously restricted if extraordinary circumstances were present.

Project Characteristics

Last but not least, the specific project characteristics were identified by *where* the projects were proposed, *what* the projects were, and *when* they were proposed. This analysis provides part the evidence analyzed to answer questions relating to the affects of the HFI on democratic decision-making and the site-specific ecological consequences of those decisions.

Projects were first catalogued based on *ecoregions*, including the Blue Ridge, Piedmont, and Mid-Atlantic Coastal Plain. The *national forests* in these ecoregions were Croatan National Forest near the coast, the Uwharrie National Forest in the central-piedmont, and the *Pisgah* and *Nantahala National Forests* in the western and far-western part of the state, respectively.

Next, the projects identified in this study were based on the GAO's definition of vegetation management (2007), and descriptions of the *CE type* used the Forest Service name and number of each project. Based on this definition, the CE name and number identified ranged from *Special Uses (#3)*, *Roads (#4)*, *Regeneration (#5)*, and *Timber-Stand Improvement (#6)*, *Hazardous Fuels Reduction (#10)*, *Post-Fire Rehabilitation (#11)*, *Limited Commercial Logging (#12)*, *Weather-Related Salvage Logging (#13)*, and *Insect-Related Salvage Logging (#14)*. The latter CE types (10-14) were authorized under the new HFI regulations (White House 2002).

While several projects had several purposes, this study identified the primary purpose based on the agency descriptions in scoping notices, correspondence, and decision-memos. The *Stated Purposes* identified in this study were *Pre-commercial*

thinning, Commercial Logging, Burns, Southern Pine Beetles, Wildlife Openings, Watershed Restoration, and Other. After determining the stated purpose for each project, the *Acreage* is identified based on the agency's description of the proposed projects in public notices and agency correspondence.

Chi-Square Tests, Independence, Participation Predictors, and Frequency Modeling

Following the descriptive statistics in Chapters Seven and Eight regarding the processes, participants, policies, and projects present under the HFI in North Carolina from 2003 through 2008, an additional level of analysis provides findings based the patterns and relationships between the selected variables of interest. The response and explanatory variables investigated in this section offer a glimpse into the significant influences and processes behind implementation of the Bush Administration's Healthy Forest Initiative.

Contingency tables were developed using Microsoft Excel and Microsoft Access, and analyzed using chi-square tests in the R statistical software (R Development Core Team 2009) to explore the *attitude* response variable (*What*) to *representation, interest identification, and affiliation* explanatory variables (*Who*) from Chapter Seven. Chapter Eight addresses the patterns and relationships between the *where* response variable and the *what* explanatory variables (*CE type* and *Stated Purpose*). Chi-square tests were used to examine the relationships for levels of significance, or evidence for rejecting independence, between the response and explanatory variables.

Additional analysis of the chi-square statistic is conducted using the standardized residuals to explore precisely which observations in the contingency tables deviated

from expected frequencies and are responsible for rejecting the independence model. Standardized residuals are used to determine which values are major contributors to rejecting the null hypothesis.

After creating a contingency table in Excel, they run through the “R” software’s chi-square tests. In addition to the chi-square statistic outputs, R can produce the residual outputs. If the chi-square statistic is significant, the residuals greater than 2.00 shows the researcher which parts of the contingency table led to the significance. Finally, once the observations are identified, comparisons are made with Concern and Potential Effect, participant characteristics, and other evidence to explain the significance found in the table.

Chapter Seven also included an analysis of the *predictors of public participation*, including acreage and species occurrences in each project. Logistic regression models were used to determine which combination of variables best predicted citizen participation. These included the physical size of the project, both raw and log-transformed, number of species in the project, both raw and log-transformed, and these two variables in combination. Using an R function (`plot.logi.hist`) published in the *Bulletin of the ESA* (de la Cruz Rot, 2005), one-predictor models were used to visualize the predictors graphically. To understand how variables act in concert in the same model, predicted probabilities, $\hat{\pi}$, for various predictor combinations can be used to classify an observation’s participation type. A so-called confusion matrix was then used to describe the accuracy of the classification rule. Another strategy compared models

using a range of possible values for c , which is traditionally done using a receiver operating characteristic (ROC) curve.

Additionally, Chapter Eight explores the potential patterns in data relating to the number of projects proposed over the six years identified in this study. Statistical tests were used to model project occurrence, including the Laplace test (Cox and Lewis, 1978, p. 47) and Poisson regression for polynomial regressions and piecewise linear models (Davies 1978). The segmented package of R (Muggeo 2008) used Poisson models that were fit to the data, including a linear model, quadratic model, segmented regression model, and a breakpoint regression model. To analyze the waiting times between events, modeled using asymmetric probability distributions with positive support were used, including the exponential, Weibull, lognormal, and log-logistic distributions. This area of statistics that fits models to duration data is known as survival analysis, also called event history analysis, and it can be tested using the survival package of R (Therneau and Lumley, 2008). These tests identified trends that were compared to findings in the GAO study (2007) that found a substantial drop in project frequency after public participation rights were broadened.

Conclusions

For the conclusion, the projects were analyzed according to different democratic theories outlined in the policy and conservation literature (see Table 1). To evaluate the prevailing decision-making processes present in national forest management in North Carolina, characteristics of different democratic theories were identified in the literature (see Chapter Two). This chapter begins with a design adapted from Steelman's study

(1996) using two categories (elite and participatory) to evaluate the democratic structures present in the Monongahela National Forest planning process. Building on this approach, the current study used characteristics in Table 1 to provide a framework for evaluating whether elite, pluralistic, deliberative, or agonistic democratic theories most adequately explained the processes for 67 HFI projects issued in North Carolina.

Interdisciplinary Study

This dissertation attempted to bridge the democratic theory, conservation, and resource management literatures using an interdisciplinary (Klein 1990) or transdisciplinary (Jantsch 1970) approach, constructing a research design based on both social and natural science methodologies. This allowed the study to adequately address citizen participation and processes affecting environmental outcomes that are limited by the traditional silos constructed by the disparate disciplines. Because conflict over national forest decision-making has been present since the creation of federal public land, this study's problem-centered, social/natural science orientation required interdisciplinarity to address parallel questions orbiting distinct literatures. Moreover, this study used a transdisciplinary approach to move beyond "free" or "basic" research towards a "field induced," problem-centered study (Klein 1990) to comprehensively broaden the scope of the research question beyond the traditional disciplines (Jantsch 1970).

Validity Threats & Limitations

Due to the fact this dissertation was based on a non-random selection of a case study focusing on North Carolina's vegetation management projects, it is important to

address external validity threats. Although this study focused on only four of the 155 available national forests governed by the Forest Service, selecting one was necessary, given the arduous task of data collection. Furthermore, to test for the presence of different democratic models, it was necessary to select a small group of forests (the Croatan, Nantahala, Pisgah, and Uwharrie). In Steelman's (1996) study of national forest planning, she justified using only one forests (the Monongahela National Forest) "on the grounds that it was appropriate to test two competing theories of decision-making" (60). North Carolina's national forests provided a wealth of public participation data to analyze, serving as an important case to address the democratic theories present during decision-making. These finer-scale analyses would have been lost if this dissertation instead addressed national forest decision-making through a substantially broader study.

It is important to emphasize the limits of this study. By focusing on Healthy Forest Initiative projects, projects proposed before the 2003 policy changes were not included. Future study could learn much from these projects, including the level of extraordinary circumstances (see Chapter Eight). Additionally, the surveys used to document extraordinary circumstances were conducted by the Forest Service, which were not verified by independent biologists. There were also no project identified in this study that were authorized by the Healthy Forest Restoration Act because there were no such projects proposed in North Carolina during the scope of this study. Finally, this study did only included prescribed burns that were authorized under the HFI category for burns (CE 10). Approximately 20 additional prescribed burns authorized in

North Carolina were not included in this study due to settlement reached with the Forest Service during negotiations over the FOIA request (discussed above).

This dissertation focused on only four classes of Healthy Forest Initiative policies (appeals rule, categorical exclusions, extraordinary circumstances, and goods for services) in the Croatan, Nantahala, Pisgah, and Uwharrie National Forests in North Carolina. These findings are therefore not immediately generalizable to other decision-making processes or national forests in other regions. Although the North Carolina case was chosen for its important forest and management history, this selection also limits the general applicability to other forests given the state's unique status.

Despite these tradeoffs, several findings address in Chapter Nine have direct relevance to federal policies and other national forest regions, including policy implications for the appropriate use of categorical exclusions, the difficulty in implementing collaborative management, watershed restoration, the "forest health vortex," "bullet-proofing" environmental analysis, Critical Habitat loopholes, and the case for a "conservation democracy" theory of environmental decision-making.

CONCLUSION

This chapter has outlined the methods used in this dissertation address questions relating to the models of democratic theory that best explain the decision-making processes and conservation outcomes embodied in the Healthy Forest Initiative in North Carolina from 2003 through 2008. The next chapters (Four, Five, and Six) provide the historical and legal context for an analysis of the HFI conducted in Chapter

Seven and Eight. Chapter Four provides the context for the case study by addressing history of conservation, with an emphasis on commercial forestry, ecological forestry, and conservation biology. Chapter Five provides a history of federal land management, public participation, and environmental law in the U.S.. Chapter Six provides context for, and characteristics of the Healthy Forest Initiative, as well as the legal challenges invalidating portions of this Bush Administration policy change. Chapter Seven provides an analysis of public participation in North Carolina's CE projects, with an emphasis on processes and participants. Chapter Eight addresses the forest management and environmental outcomes of decisions addressed in Chapter Seven. Chapter Nine concludes by providing an interdisciplinary lens to synthesize the analysis and provide potential policy recommendations arising from this study.

CHAPTER FOUR: COMMERCIAL FORESTRY, ECOLOGICAL FORESTRY, AND U.S. NATIONAL FOREST MANAGEMENT

"The botanist looks at the world from a point of view precisely the reverse of that of other people. Rich fields of corn are to him waste lands; cities are his abhorrence, and great open areas under high cultivation he calls 'poor country'; while on the other hand the impenetrable forest delights his gaze, the rocky cliff charms him, thin-soiled barrens, boggy fens, and unreclaimable swamps and morasses are for him the finest land in a State. He takes no delight in the 'march of civilization,' the ax and the plow are to him symbols of barbarism, and the reclaiming of waste lands and opening up of his favorite haunts to civilization he instinctively denounces as acts of vandalism."

Lester F. Ward 1881

INTRODUCTION

For much of the last century, two central groups (i.e., commercial and ecological) have engaged in an evolving debate about the meaning and significance of conservation (Hays 2007). The disputation actually began prior to the creation of federal public land in the United States. The writings of early naturalists and some who were called conservationists (e.g., William Bartam (1773), George Perkins Marsh (1864), John Audubon (1839), Ralph Waldo Emerson (1836), and Henry David Thoreau (1854) revealed essential differences about the meaning of conservation. The creation of federal forest reserves in 1891, however, triggered a unique conflict that is the central focus of a substantial body of research (See Chapter Five).

Before using elite, pluralistic, collaborative, and agonistic democratic theories to explain the processes involved with citizen engagement and oversight of federal land, it is important to define conservation, as the concept is used in the present study, and describe the nature of this continuing conflict between commercial and ecological interests in the management of U.S. National Forests. Knowledge of the history of the conservation issue is essential in developing an understanding of the contemporary United States Forest Service (Forest Service) and the democratic processes that influenced the decision-making processes and subsequent ecological outcomes for the U.S. National Forest system.

This chapter explores the history of the conflict between commercial and ecological forestry in the United States, which provides background for an analysis of Forest Service management proposals addressed in Chapters Seven and Eight. The first section explores the history of the Forest Service and its founding figures, including Gifford Pinchot and John Muir. The tension between the Conservationist and Preservationist philosophies of the late 19th century closely mirrors the current tension between commercial and ecological forestry. This chapter also addresses the history of Conservationist “Resource Use” management administered under the traditional elite democratic model; this provides insight into the collision involving disparate views in the “environmental era” addressed in Chapter Five. Finally, this chapter outlines the history of ecological forest management philosophies in the United States, beginning with the Preservationists and including modern conservation biology.

COMMERCIAL AND ECOLOGICAL MANAGEMENT

Early debates over U.S. federal land ownership and management originated in the late 19th century, beginning with campaigns by the American Forestry Association, the Progressive movement, and the passage of the Forest Reserve Act of 1891 (Hays 1959). In his seminal book on conservation movements in the U.S., Samuel Hays describes the infamous split between key leaders during debate over commercial use in the Forest Management Act of 1897, which was inserted in the bill by Gifford Pinchot without the knowledge of John Muir and others (Hays 1959; Nash 1968). “These differences emerged in the fall of 1896... [Muir] hoped the government could be persuaded to reserve more forests without provision for commercial use, in the manner of the 1891 Forest Reserve Act. [Pinchot], favored opening all the reserved to carefully managed economic development” (Nash 1968:135-136).

This was the beginning of the “classic conservation conflict” (Callicott 1999) between resource focused interests (Conservationists) and ecological interests (Preservationists) (Leopold 1949, Hays 1959, McConnell 1966; Nash 1968; Stegner 1990; Hirt 1994; Noss 1998; Callicott 1999; White 2005). The 100-year-old debate over forest management originates with this divide between Conservationists interested in efficiencies and commercial use, and Preservationists focused on maintaining intact native forests for their beauty and perceived value to the human spirit (Nash 1968).

This divide has long been recognized by scholars as an “A-B cleavage” (Leopold 1949), a conflict over “imperialist” and “arcadian” views of science (Worster 1985), between “traditionalists” and “stewards” (Alexander 1989), “Old forestry” and “New

Forestry” (Foss 1990), “modernist” and “post-modernist” (McQuillan 1992), “agronomic” and “ecological” (Hirt 1994), and, most recently, “commodity forestry” and “ecological forestry (Minckler 1974; Hays 2007). In his seminal book on ecology (1948), Leopold’s chapter on the “A-B Cleavage” described resource use interests (Group A) as diametrically opposed to the ecologically-minded interests (Group B).

The conflict between Conservation and Preservation, however, represents an oversimplified dualism of the resource debate that ignores industrial extraction taking place during the late-19th century in privately-owned native forests. One might label the wholesale liquidation of native forests on privately-held national forests of that time (and today) as a third form of forest use. Additionally, thinking in such dualistic terms also ignores the fact that the Progressives’ Forest Service, designed by Pinchot (1947) as a professional corps of efficient scientific experts, departed from the original “gospel of efficiency” (Hays 1956) during the post-WWII housing boom to become an industrially-driven commodity forestry agency consumed by a “conspiracy of optimism” (Hirt 1994). Indeed, as C.P. Snow warned (1959), “Attempts to divide anything into two ought to be regarded with much suspicion.” Despite these complexities and caveats, the different philosophies and missions of Gifford Pinchot (Conservation) and John Muir (Preservation) are useful in developing an understanding of the actual ongoing bounded conflict and ideological cleavage that exists today over national forest management.

Although modern resource management is described in the literature as inconsistent with many principles of ecological forestry or conservation biology, commodity forestry of today has roots extending directly down into the rich history of

Gifford Pinchot's Conservationism (Hays 2007). "Resourcism," originally described by Pinchot (1947), represented the Progressive attempt to manage public resources, for the public interest, that has today evolved into what is most commonly defined as "resource extraction" or "commodity forestry" (Hirt 1995; Hays 2007: XIII).

"Commodity forestry" views forests as "composed of plants that could be a source of wood, measured in terms of board feet and cubit feet, categorized in terms of sapling, pole, and mature timber, all steps along the way to wood harvest" (Hays 2007: XIV). This approach is not unlike Pinchot's obsession with efficiency and scientific resource use, and it represents a distinct perspective contrasting greatly with modern conservation management described by ecologists and conservation biologists (Leopold 1949; Meffe & Carroll 1994; Holling and Meffe 1994; Noss 1994, 1999). In short, the classic binary is still best explained as a divide between commodity forestry and ecological forest management.

Distinct from commodity forestry, ecological management today is based primarily on principles of conservation biology. From this perspective, modern conservation is best understood as distinct from Pinchot's Conservationist approach, and is also far more scientific than the original philosophies of the "naturo-bot" Muir. Hays credits Leon Minckler for first calling for ecological forestry in an article in 1974 that was rejected by the Society of American Foresters (the organization originally founded by Gifford Pinchot), in which Minckler argues for a new approach to forestry distinct from management relying on clearcutting and other industrial approaches (Hays 2007:63).

This ecological forest management grew “to encompass a wide range of subjects, such as the habitats needed to support biodiversity, old forests; watershed protection; the specific value of large, intact, forested areas; human forest disturbances, and forest restoration” (Hays 2007:63). Modern ecological forestry includes “such objectives as biodiversity management, the protection and enhancement of diverse flora and fauna; using habitats rather than ‘stands’ as units of management; maintaining the structural diversity of tree species and age; promotion of native forests and old growth; organizing forest management around watersheds; protecting forests from disturbances such as roads, harvest methods, motorized recreation, and mineral extraction; and soil erosion and depilation of soil nutritional capacity” (Hays 2007: xiii). These scientific objectives of ecological forestry do not, many would argue, share common principles with Conservationism or modern resource extraction, even though the latter asserts it is also guided by science and sustainable “wise-use” of natural resources.

The “Group B” ecological approach (Leopold 1949) is wary of claims that technical fixes can solve environmental problems, or that professional and political elites can maintain current levels of commodity management of national forests without significant ecological costs (Hirt 1994). “The ecologist does not generally share this rosy assessment of the potential of industrial technology to solve social or environmental problems through expanded production (Hirt 1994:2). Instead, ecological forestry is focused on perceived threats to biodiversity and ecosystem integrity, and it employs the science of conservation biology to address those threats

(Minckler 1974; Meffe 1994, Holling and Meffe 1994, Noss 1999). The “gospel of efficiency” (Hays 1959) and resource-use model is viewed, by advocates of conservation biology, as incompatible with modern conservation management and ecological forestry (Holling & Meine 1996; Berry 2003).

This next section explores the history of this conflict over national forest management to better understand the tensions between modern commodity and ecological forestry, establishing a framework for addressing site-specific Forest Service actions in North Carolina through an analysis of elite, pluralistic, deliberative, and agonistic democratic theories. Beginning with the Progressives, this next section traces the separate evolution of commodity and ecological forestry to the current raucous debates over endangered species, “Healthy Forest” proposals, and collaborative management.

Conservationism, Pinchot, & Resource Management

This section attempts to describe the complex and evolving definition of conservation management by placing Gifford Pinchot and Conservationism in the appropriate historical context. As the application of Progressivism to natural resource decisions (McConnell 1954), Conservation represented the first wide-scale use of scientific forestry and efficiency in the management of forest reserves, to satisfy what Pinchot believed was in the public interest of present and future generations (McConnell 1966, Hays 1959). Although this resource-use agenda conflicted with the Preservationist approach, Pinchot’s position can also be viewed as contrasting with modern “resource” management, in which “the George W. Bush administration, the

wood products industry, the forestry profession, and the Republican Party have used executive power and authority with considerable imagination in an attempt to hamstring ecological forestry advances” (Hays 2007: XV). In its historical context, however, Pinchot’s Conservationism is understood as a form of resource-use management based on efforts to achieve efficient and scientific use, in the public interest.

Identified as the founder of Conservationism, Pinchot graduated from Yale in 1889, attended the French National Forestry School, later returned as the first ‘professionally trained forester’ in the U.S., and founded the School of Forestry at Yale (Pinchot 1947). Pinchot first worked as a forester at the Biltmore Estate property in Asheville, NC, with German born forester Carl Alwen Schenck, who established the Biltmore Forest School, the first school of forestry in the U.S. known today as the “cradle of forestry” located in the Pisgah National Forest near Brevard, North Carolina.

Pinchot would become the second Chief of the Division of Forestry after his predecessor, Bernhard E. Fernow, left the Division 1898 to become the first dean of the New York State College of Forestry at Cornell. Unlike Fernow, a German-trained forester who was “convinced that neither the public nor the forest industry would yet support scientific management” (Hays 1959:29), Pinchot transformed the Division into the U.S. Forest Service. Following passage of the Weeks Act of 1911, the federal public land system came to the East coast, thus concretizing the first truly national forest enterprise.

Under Pinchot's guidance, the Forest Service became an agency built upon utilitarian principles of the Progressive movement; the mission was to efficiently use national forest resources for the public good "for the longest amount of time" (Pinchot 1910; McConnell 1955; Hays 1959; Callicott 1999). His success in establishing a professional corps of scientific foresters was based on his ability to convince the private-logging industry to accept scientific public land management as a mechanism to guarantee unsaturated timber markets based on sustainable harvests (Hays 1959).

In his position as Forest Service Chief, Pinchot led the movement in the U.S. to emphasize "sustained-yield" forest management, which, according to Pinchot would provide for the "greatest good for the greatest number for the longest amount of time" (1910). Following a utilitarian ethic and the Progressivist faith in technical expertise, efficiency, and value-neutral science, Pinchot believed unbiased so-called professional managers could guide federal lands through 'scientific' management. Pinchot restructured federal agencies and incorporated a resource-use ethic driven, in theory, by scientific management based on a mechanized worldview to achieve the most efficient, utilitarian use (Callicott 1999). Pinchot believed Conservation would push the federal government "to abandon some of the worst of its shortsighted wrong-headedness in dealing with the immense resources of the public lands, and to go at least through the motions of establishing the public interest, instead of the private interests, in the first place" (Pinchot 1947:117).

Sustained-yield management, for example, was "derived from Pinchot's experience with European forestry. There, forests were no longer wild, but rather were

fully ‘regulated’” (Hirt 39). Much like a crop, old “decadent” forests were targeted for liquidation and replaced with intensely managed stands of younger trees without consideration for the ecological conditions that originally established the forest as a whole. These conditions included providing “a continuous supply of timber for the future, annual cutting should never exceed annual growth, and lumber men should utilize waste materials and reduce fire and disease damage” (Hays 1959:28).

The U.S. Forest Service & Elite Administrative Management

It is well accepted in current policy literature that the traditional structure of U.S. administrative law during the first half of the 20th century, and especially after the post-WWII housing-boom, conforms to elite democratic theory. Proponents of the traditional elite administrative model argued the public interest could be realized through Group A, resource management and guaranteed through technical fixes by professional, neutral managers. This emphasis on scientific expertise under the traditional administrative model, originally proposed by Pinchot and other Progressives, followed three core management principles: 1) “develop” the resources, 2) prevent waste, and 3) guarantee resource use benefits for the general public, not just private interests (McConnell 1954). The Forest Service slowly earned the reputation as an “excellent” administrative body (Kaufman 1960), which, until the WWII housing-boom, focused on local and regional economies instead of national or international markets (Hirt 1995; Andrews 1999). The Sustained Yield Unit Act of 1944 (58 Stat. 132; 16 U. S. C. 583-5831), for example, was established to support forest industries, local economies, employment, and taxable forest products (Hirt 1995).

Although Pinchot originally believed efficient, scientific management could guide multiple uses of resources (Hays 1959), the agency culture established through traditional administrative processes, perhaps inadvertently, prevented the Forest Service from adapting to new scientific information (Kaufman 1960, Schiff 1962). Two important conservation programs—prescribed burning in Southern Longleaf Pine ecosystems and flood-prevention and forest hydrology for Eastern National Forests—were highlighted in Schiff’s important study on “scientific heresy in the Forest Service” (1962). Schiff identified an unwillingness and inability of agency officials to implement new, unorthodox management principles, and the elite administrative model sheltered the Forest Service and administrative officers from the influence of its own research offices. Schiff called for separating the agency’s research and administrative functions, given “the absence of professional maturity and competing professional power centers located outside the organization” (Schiff 1962).

McConnell’s (1966) critique of private power identified shortcomings in the Progressive ideal embodied by the Forest Service, which allowed for the overrepresentation of private resource extraction interests. As McConnell explained, (1966:50):

Where virtual autonomy was achieved in departmental structure and the demand for extreme administrative discretion was clothed in an appeal to science and a policy without standards—the so-called ‘multiple use policy... the Forest Service developed its own informal lines of responsibility, its own political ties to a particular constituency. In short, simple insistence upon the virtue of administrators as wardens of the public interest led deviously but certainly to ties with special interests, opposition to which had been the point of Progressive beginnings.

The influence of private interest groups “captured” the Forest Service administrative decision-making process and redirected national forest management, after the post-WWII housing-boom, away from the original Conservationist multiple-use policy based on selective logging and “wise” use. Although not the rule, private interests were able to control administrative processes in the Forest Service, “responsive to the power that can be wielded over the official agency. The process amounts in some situations to the capture of government” (McConnell 1966:7).

The Forest Service followed traditional administrative trends occurring throughout the federal government that led toward the concentration or overrepresentation of private interest groups agency decision-making, (Landis 1960, McConnell 1966, Lowi 1969, Stewart 1975, Twight 1983, Hirt 1994). As Richard Stewart warned in his seminal treatise on administrative reform, “the comparative overrepresentation of regulated or client interests in the process of agency decision results in a persistent policy bias in favor of these interests” (1975:1713). These inherent biases still persist in administrative decision-making and are addressed in the political science literature as “agency capture” (McConnell), the “iron triangle,” agency transaction costs, the free rider effect, agency non-acquiescence, the revolving door, and the “seat at the board” phenomenon.

The literature describes several limitations of the traditional elite model, including an inability to “balance all elements essential to a just determination for the public interest (Frankfurter, 1944) *FPC v. Hope Natural Gas Co.* 320 U.S. 591. 627. (1944). Other challenges to the traditional administrative process emphasize the

problems relating to the Forest Service's Group A, technocratic culture, which produced public dissatisfaction with the Forest Service and so-called professional, rational technocratic assumptions about sustainable use and environmental effects (Bolle 1970, Fortenbery & Harris 1983; Jones & Taylor 1995, Vaughn & Cortner 2004).

There is a longstanding criticism in the conservation literature relating to the tendency of the Forest Service decisions to traditionally benefit commercial groups (Bultena and John 1972; Robbins 1985; Clary 1986; Twight and Lyden 1990). In *A Lumberjacks and Legislators* (1982) and *American Forestry* (1985), for example, historian William G. Robbins documented a "highly congenial relationship between the Forest Service and the commercial interests consuming national forest outputs." Additionally, in *Timber and the Forest Service*, former Forest Service historian David Clary documented a strong commercial forestry bias grounded in the agency's historical goal of maximum commercial logging, concluding "the wood chopper's voice will remain important, but someday it just might cease to be the dominant one in the Forest Service" (1986:199).

As the agency with the "tradition of being one of the most insular and independent of the federal bureaucracies" (Fortenbery and Harris 1983:75), criticism of the Forest Service structure and decision-making processes can be viewed as a direct result of its commitment to elite democratic administrative theory. The Forest Service culture led to a "breakdown" in the democratic decision-making process "through which the public need is translated into law by the legislature and in turn carried out by administrative agencies" (Bolle 1970:497). These criticisms of the agency's technocratic

bureaucracy relate to problems of “procedures and regulations laid down by the Supervisor, Regional Forestry, and Washington officials which were all locked into the system” (Bolle 1970:498) favoring resource management and private interests over conservation of public forests.

There is near universal agreement in the literature about the manner in which the traditional administrative model reinforced undue Forest Service discretion and contributed to an imbalance in representation favoring resource extraction (Hays 1959, Kaufman 1960, Schiff 1962, McConnell 1966, Bolle 1970, Twight 1983; Wilkinson 1987; Twight & Lyden 1988, 1989; Anderson 1993; Hirt 1994, Norton 1995). The public administration literature includes several calls for reforming the traditional administrative model to correct substantive policy biases favoring resource extraction interests in Forest Service planning decisions (Sax 1970, Stewart 1975; Jones and Taylor 1995; Hirt 1994, Andrews 1999; Steelman 1999, Hays 2007). Early criticisms were aimed at the false assumptions of the Progressives relating to administrators ability to operate as objective professionals without engaging political, value-driven decision-making. Schwartz’s early analysis of administrative theory demonstrated that agencies are tasked with more than “collecting data, describing, and, to a limited extend, predicting,” and instead include the “relative ordering of values in a society” in identifying alternatives (Schwartz 1954).

The Conservation Limits of Conservationism

These critiques of the so-called objective scientific manager fueled debate which would reach a fever pitch in the early 1970’s, when several egregious forest

mismanagement controversies provoked public outrage and culminated in congressional moves to rebalance the Forest Service's statutory mission between resource extraction and conservation management (see Chapter Five). Critics of the Forest Service's adherence to the traditional administrative model believed resource extraction was primarily benefiting organized minority interests with economic stakes in national forest planning (Olson 1965). Agency professionals traditionally "had a greater interest in a dominance of resource policy (timber and mining) for the National Forest than any other orientation," which translated into an overrepresentation of resource management, leading to the "inability of traditional democratic structures to deal adequately with the specifics of complex land management process" (Fortenbery and Harris 1983:52).

While Pinchot's utilitarian model claimed "wise," scientific, efficient, and sustainable uses, modern conservation literature describes many shortcomings with "Conservationism" as a model that is today better understood as a resource extraction model incompatible with conservation management objectives as defined by conservation biology. Conservation philosophers (Callicott 1990) and biologists (Noss 1998) assert that Pinchot improperly reduced "Nature" to resources and subordinated all other uses to this resource management approach. Many conservation biologists and ecological scientists claim this simplification of ecological processes has led to the eclipsing of Pinchot Conservationist's model after post-WWII the housing-boom to mutate into the more industrially-driven resource-use model embraced by commercial forestry interests of today (Hirt 1995).

Most scholars agree that Pinchot's approach allowed for the emergence of more intense, commodity driven forestry adhering to "tenets of professional overspecialization, purely reductionist science, and economic dogma" (Leopold 1949), which was "conceived in arrogance, born in the Neanderthal age of biology and philosophy, when it was supposed that nature exists for the convenience of man" (Carson 1962: 297). Although modern resource management claims Pinchot's Conservationism as its intellectual lineage, commodity forestry today is more accurately viewed as a departure from Pinchot's early work with the Forest Service, the Society of American Foresters, and the Yale School of Forestry.

Current conservation biology and ecological forestry literature, for example, flatly rejects elements of commercial forestry, such as the sustained-yield management model and attempts to grow merchantable trees on rotations indefinitely (Perry, Vaux, & Dennis 1983; Clary 1986; Hirt 1994). "The ideology of endless growth and maximized production threatened the foundation of forest management as practiced by the Forest Service" (Hirt 1994:219). Although Pinchot did not have an adequate scientific basis to assess the effects of sustained-yield logging, modern conservation scientists have identified many flaws in this approach to national forest management, including the effects of logging on an ecosystem's capacity to sustain the productive capability of the land to grow merchantable trees (Hirt 1994; Holling & Meffe 1996)).

Modern resource extraction and sustained-yield models are built on assumptions about strict empiricism and positivist-driven science, which opposing scholars have labeled "pathological" (Berry 2000) and "a pathology that permeates much of the

natural resource management and precludes long-term sustainability” (Holling & Meffe 1996:329). Modern ecological forestry and conservation management, described by conservation biologists and ecological foresters, rejects this mechanistic paradigm for resource management (Minckler 1974). The flaws of modern resource management models, according to Holling & Meffe (1996:329), are driven by the assumptions that solutions are “direct, appropriate, feasible, and effective over most relevant spatial and temporal scales” and are “well-bounded, clearly defined, relatively simple, and generally linear with respect to cause and effect.” Norton (1988:237) also pointed to the tendency for resource managers to attempt to “adjust the mechanism of nature” to extract goods for commercial use. “On this positivist view of science, facts and values can be separated, and science can operate in a world of pure description... The result is a bureaucratic brand of science” Norton (1988:237). The ecological conservation literature has largely rejected the modern resource management approach based on positivist, reductionist interpretations of science aimed at controlling nature to establish predictable resource outcomes (Holling & Meffe 1996).

Contemporary conservation biology and ecological scientists argue against the mechanistic approach of resource extraction practices, including industrial tree monocultures, agricultural development in fragile ecosystems, and predator eradication (Norton 1988:93). Holling & Meffe assert that problems with manipulating ecosystems for resource extraction arise from the inability of resource management to conserve complex, nonlinear, and poorly understood ecosystems while extracting resources indefinitely. “A common theme of many resource-management efforts is to reduce

natural bounds of variation in ecological systems to make them more predictable, and thus more reliable, for human needs.... [they] dampen extremes of ecosystem behavior or change species composition to attain a predictable flow of good and services or to reduce destructive or undesirable behavior of these systems” (Hollings & Meffe: 1996 329). These writers offer the 100-year-old practice of fire suppression and fighting pest outbreaks in federal lands to protect tree plantations as examples of this mechanistic, resource-driven approach. The view of conservation biology and ecology forestry theorists identify the drive to control complex natural systems as fueled by a “pathology of natural resource management” that leads to a “growing institutional myopia and rigidity” (Hollings & Meffe 1996: 331) among agency managers, which often ‘backfires’ when agencies rely exclusively on simplistic resource management models for complex ecosystems. Unnaturally large wild-fires, drought, and climate change are just some of the results (Hollings & Meffe 1996)

Although the Conservationist management model was originally established to prevent the kind of resource exploitation taking place in private lands during Pinchot’s time (Hays 1959), the modern resource extraction model has been sharply criticized by conservation biologists and ecological scientists as an invalid management approach for ‘conserving’ biological diversity and ecosystem function in U.S. national forests (Hirt 1994, Grumbine 1993; Orr & Ehrenfeld 1995, Arno & Allison-Bunnell 2002). Many authors in this area of the conservation literature have called for reforming this dominant paradigm influencing the Forest Service. They recommend ending the commercial logging program entirely (*McKinney Leach House Bill*), moving the agency

under the Department of Interior with the U.S. Parks Service (Fairfax 2005), and rejecting libertarian arguments about market-based environmentalism which recommend selling large portions of the public forest system to private interests.

Preservationists, Muir, & Ecological Forestry

Following passage of the 1891 Forest Reserves legislation, angry Preservationists splintered off from Conservationists to form a movement based on wilderness, national parks, and an appreciation for native land consistent with modern ecological forestry (Hays 1959; Nash 1968; Minckler 1974). While Pinchot worked “quietly, though effectively” to introduce commercial use into the new reserves (Hays 1959:40), the Preservationists, made up of national park supporters, arborists, natural historians, sportsmen organizations and others worked to prevent Pinchot’s “basic view that the reserves should be developed for commercial use rather than preserved from it ...Pinchot felt that his major problem was to restrain the influence of [preservationists] who wished to leave them in their natural state, untouched by lumberman and stockman” (Hays 1959:40).

This new preservation movement was initially spearheaded by John Muir, a self-described “Poetico-trampo-geologistsbot + ornith-naturalist, etc etc etc”, and wilderness advisor to President Roosevelt. Muir was an early friend of Pinchot’s who would later come to oppose the “deconservationist” resource-use model for national forests (Nash 1968). Muir’s ideas were published in Century Magazine in 1889 after hiking the Sierras with Robert Underwood Johnson, a colleague with whom he worked

to win popular support that led to the designation of the Yosemite National Park on October 1, 1890. (Nash 1968).

The “bitter conflict” between Conservationists and Preservationists represented the classic schism “between those who favored resource development and others who argued that wild areas and wildlife should be preserve from commercial use” (Hays 1959:189). Pinchot successfully influenced the final language in the Forest Management Act of 1897, which opened—for the first time—the forest reserves to commercial logging and grazing (Hays 1959; Nash 1968).

Later, a conflict of the damming of the Hetch-Hetchy Valley embroiled these two rival sides in a protracted struggle over the use of a Yosemite National Park valley as a reservoir site for San Francisco (Hays 1959). This split culminated with the so-called Ballinger-Pinchot controversy, which erupted when Interior Secretary Ballinger refused to follow Pinchot’s policy reforms. Instead, Ballinger openly supported the preservationists in the Hetch-Hetchy debate, supported the creation of a separate Bureau of National Parks, and called for protecting parks from the Right-of-way Act of 1901 “in order that they may be preserved for the purposes for which they were created” (Ballinger report on HR 3907 in RG #49, Bill Bolok #29:174-175).

Muir believed that despite the “present flourishing triumphant growth of the wealthy wicked, Pinchot’s and their heirlings, will not thrive forever... We may lose this particular fight, but truth and right must prevail at last” (Muir in Hays 1959:193). In fact, efforts by Pinchot to block Preservationist gains backfired when President Roosevelt signed the Antiquities Act of 1906, supported the creation of the New York

Adirondack State Park, and supported the establishment of a separate National Park Bureau in the Department of the Interior. Congress blocked bills by Pinchot in 1906 and 1907, for example, when he attempted to place new National Parks (where resource-extraction is prohibited) under the Forest Service to open them to commercial use. These efforts, and the damming of the Hetch-Hetchy canyons, ultimately backfired when Congress permanently established a separate bureau to administer the National Parks in 1916—one year after Muir died (Hays 1959).

In addition to representing the preservationist and national parks campaigns, Muir also worked to utilize the Romantic and Transcendental philosophies of Emerson and Thoreau in a model for managing federal lands. These perspectives enhanced the emerging science of ecology, which was giving shape to a radically different worldview from the mechanistic paradigm that inspired Pinchot's resource use model (Nash 1968; Callicott 1990). Muir was one of the first naturalists to acknowledge an inherent value for all species (Muir 1916)—an understanding that influenced the science of biodiversity in conservation biology, as well as eco-philosophies like biocentrism and deep ecology (Naess 1989). As the emergent ecology science began to explain 'nature' as more than a collection of useful, useless, or noxious parts of the landscape, Muir spoke for managing public lands by maintaining them as vast, intricately organized, and tightly integrated systems (Callicott 1990).

Muir's prescient understanding of the biosphere and ecological systems can be found through much of his writing (Muir). He embraced an appreciation of species that has evolved into what some call "compositionalists" or an emphasis on biodiversity,

arguing in support of “the smallest transmicroscopic creature that dwells beyond our eyes and knowledge” (Muir 1916:139). Muir was also known for his geological descriptions of Yosemite Valley, as well as his poetic predictions of early systems ecology (Odum 1968).

Although more ecologically oriented than Pinchot’s Conservationist approach, Muir’s preservationist ethic is a problematic foundation for modern ecological forestry. Modern conservation biologists, for example, point to “paradoxes of preservation” that arise when managers attempt “to preserve systems that must change ... and interject the human hand into systems we seek to preserve as human-free” (White and Bratton 1980). These internal dilemmas require approaches that paradoxically seek to preserve systems that continue to change due to biogeography and new climate change dynamics (White & Bratton 1980).

Also problematic is the preservationists’ “cultish” obsession for wilderness (Nash 1968). This has provoked controversy, according to some scholars, because the word ‘wilderness’ reflects a human idea (Cronon 1995), and relies on terms like “pristine” and “untouched,” which do not fully consider the influence of indigenous cultures (Mann 2005) or the ubiquitous effects of modern industrial pollution (McKibben 1989). “The rejoinder should begin with the thought that it is technological power and human greed, and not the idea of wilderness and wilderness preservation, that separate people and nature. Sure, humans are ‘natural,’ but somewhere along the evolutionary way from spears to spaceships they dropped off the biotic team and, as Henry Beston recognized, became cosmic outlaws” (Nash 2001:368).

Conservation biologists have addressed these criticisms by focusing on biological diversity (compositionalist/evolutionary ecology) and ecological systems (functionalist/ecosystem management) to avoid controversy relating to inadequate descriptions of pristine, virgin wilderness. “These paradoxes of preservation are further arguments for the focus on biological diversity rather than human-free nature and the shift from the preservation ethic to a conservation ethic in a broader sense” (White 2005: Ch. 1). Because these debates require an honest appraisal of complicated terms like ‘wild’ or ‘native’, scholars today instead call for valid, measurable levels of biological diversity and ecosystem complexity (White 2005).

While Muir’s position was more ecological than Pinchot’s, “we have to realize [Muir] wrote often of the value of nature to humans, albeit a value (spiritual value) that was non-material and non-consumptive” (White 2005: Ch. 3). These limits to a purely preservationist approach are described in the conservation literature and are important for developing an understanding of how modern conservation management has evolved. “In Muir’s opinion, people going to forest groves, mountain scenery, and meandering streams for religious transcendence, aesthetic contemplation, and healing rest and relaxation put these resources to a ‘better’—i.e., morally superior—use than did the timber barons, mineral kings, and captains of the industry” (Callicott 1990: 16).

Although the preservationist ethic does not map directly to modern conservation management (White 2005), Muir’s writings and contribution to conservation management are a key to understanding the modern conflict over federal lands management. Although the different “conservation” and “preservation” models

emerged as competing approaches to public lands management, a third philosophy of modern resource management, anchored by the traditional model of administrative theory (discussed below), has dominated U.S. Forest Service decision-making since the post-WWII housing boom in the U.S. (Hirt 1994).

Leopold and the A/B Cleavage

This dissonance in the concept of conservation was most eloquently described by Aldo Leopold (1949), perhaps the most influential environmental writer of the 20th century history. In his seminal ecology book *A Sand Country Almanac*, Leopold defines an “A & B Cleavage” where “one group (A) regards land as soil, and its function as commodity-production; another group (B) regards land as biota and its function as something larger.” Leopold gained these insight into this tension within conservation after beginning his career in the Group A (commodity forestry) camp and abandoning the perspective during his famous encounter as a wildlife manager with a California Gray Wolf (*Canis lupis*). In “Thinking like a Mountain,” (1949:130), Leopold reflected on shooting a mother wolf and coming upon the dying animal “in time to watch a fierce green fire dying in her eyes. I realized then, and have known ever since, that there was something new to me in those eyes—something known only to her and to the mountain.” This altercation with the gray wolf inspired Leopold’s famous “Land Ethic,” which is now described by modern conservation scientists as the ‘ecological-evolutionary’ land ethic (Callicott 1999).

The Group A resource extraction model, according to Leopold, represented “man the conqueror,” which “grew trees like cabbages, with cellulose as the basic forest

commodity” (1949:221). Noss expanded on this description by adding, “with rare exceptions, [Group A managers] remain narrowly oriented toward particular resources of direct use to humans, display a short-term perspective, seem arrogantly confident in the ability of humans to manage nature wisely, emphasize control and domination over living in harmony with nature, are enamored with high-tech approaches to management, are comfortable with high risk to ecosystems, suffer from disciplinary fragmentation and competition and are still highly responsive to industry and bureaucracies” (1998:717).

This description of the Group A camp, with the emphasis on commodity forestry over ecological forestry (Minckler 1974; Hays 2007), helps explain why many modern conservation scientists reject resource management as a model for ecological management. In addition to “the stirrings of an ecological conscience” (1949:221), Leopold’s ecological-evolutionary land ethic presented an alternative perspective that challenged the longstanding dominance by commodity forestry and other resource extraction interests (Hays 1959, 2007; Stewart 1975).

Group B’s approach, on the other hand, “describes ecosystems at a landscape scale—plants, animals and other organisms with the physical template of soils and topography in the setting of climate” (White 2005: Ch. 3). Leopold embraced the emerging science of ecology, writing “it is a century now since Darwin gave us the first glimpse of the origin of the species. This new knowledge should have given us, by this time, a sense of kinship with fellow-creatures; a wish to live and let live” (1949:109). According to Noss, Leopold’s “distress was based not only on ecological or economic

concerns, but on moral ground: the immorality of ending another life form's existence, especially given our evolutionary knowledge that all species are related" (Noss 1998:714,715).

What Leopold identified as the Group B management approach is more aligned, although not perfectly, with the Preservationist intellectual lineage and is positioned as an ecological alternative to resource extraction 'management.' As Leopold wrote in *The Sand County Almanac*, "Group B, on the other hand, sees forestry as fundamentally different from agronomy because it employs natural species, and manages a natural environment rather than an artificial one" (1949: 22). Management under the Group B model follows the ecological principles of "man the biotic citizen" who considers "science the searchlight on his universe" (Leopold 1949:223).

Leopold began formulating the so-called Land Ethic in his 1933 article, "The Conservation Ethic," and later crystallized this theory in *A Sand County Almanac*, in which he offered what has become an important conservation credo: "A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community. It is wrong when it tends to do otherwise" (1949:225). Integrity, stability, and beauty are interpreted differently by contemporary conservation biologists, to include ecosystem complexity, dynamic equilibrium, and biodiversity. Clearly, Leopold's contribution to conservation biology remains important in the conservation literature (Noss 1999).

Leopold's Group B management principles identified in "Land Ethic" map closely to ecological forestry principles (Minckler 1974), originally rejected by members of the Society of American Foresters, "to encompass a wide range of subjects, such as the

habitats needed to support biodiversity, old forests; watershed protection; the specific value of large, intact, forested areas; human forest disturbances, and forest restoration” (Hays 2007:63). These principles of ecological forestry are consistent with Leopold’s Group B management, as well as with one of the general principles in ecology, the Species-Area Curve (Arrhenius 1921), which holds that, other things being equal, larger patches of land usually support more species than smaller patches (McGuinness 1984).

Today, there is almost universal agreement within the conservation and ecological literature that Group B management is required to maintain biological diversity and ecological integrity in federal public lands. Many scholars agree the Group B model is more adequate for the purposes of ecological management’s main task: conserving biological diversity and ecosystem complexity (relative to the system at hand) (White 2005). Although the term is still contested in the resource management literature, modern ecological forestry is consistent with a Group B (ecological evolutionary) approach.

This early conflict is particularly relevant to this study of modern forest management issues because it exposes the tensions in current federal land disputes. These disputes are, then, more fully understood by knowledge of democratic theories, which are inextricably interwoven into the process of contemporary resource management. Because statutory requirements compel federal agencies to include public participation and environmental review in federal land management (see Chapter Five), this study requires an analysis informed by democratic theories that relate to the

century-long Pinchot-Muir, A/B conflict and concomitant decision-making for American national forests.

CONSERVATION BIOLOGY

To explain the environmental outcomes of different democratic practices, conservation biology informs modern ecological forest management by addressing biological diversity and ecological complexity on genetic, species, and landscape scales (Leopold 1949, Soulé 1985, Grumbine 1994, 1997, Meffe 1994, Noss 1994, Meine 1999, Wilson 2002, White 2005). Ecological forestry and conservation management are environmental planning models informed by conservation biology principles for project design and implementation (Meffe 1994; Wilson 2002, Noss 1998, White 2005).

While there is much debate between conservation and resource management scholars relating to the goals and definition of the term “conservation,” this dissertation is concerned with management consistent with conservation biology (Soulé 1985; Meine, Soulé & Noss 2006), ecosystem management (Grumbine 1994) and ecological forestry (Minckler 1974, Hays 2007). Meffe addressed this ecological basis for conservation management in *Principles in Conservation Biology*, writing: “Good management approaches have a strong dependency on the wealth of theoretical and empirical studies in biology. There is no particular field of training that prepares one to be a good conservation manager; management approaches have changed over several decades, and continue to evolve” (1994). The resource management literature, however, describes the evolution of conservation in significantly different terms (Hays 1959; 2007; Hirt 1994; Wondolleck 1999, 2000; Stanley 1995; Grumbine 1997). Given

this distinction, this section uses conservation biology to further define ecological forestry and conservation management to allow for an analysis in Chapters Seven and Eight of the results of democratic processes that open federal decision-making for forest management.

This study accepts the definition of ecological forestry and conservation management as fundamentally guided by the science of conservation biology (Minckler 1974; Meffe 1994; Noss 1998, Hays 2007). Conservation biology is now recognized as a legitimate scientific, interdisciplinary field of study, which also incorporates normative dimensions relating to the mission-driven goal of preserving biological diversity and ecosystem complexity (Meffe 1994; Wilson 2002, Noss 1998, White 2005). These characteristics of conservation biology describe a rigorous scientific enterprise that guides ecological research and management.

This description in the conservation biology and ecology literature, inspired by Muir, Leopold and others, as described by Leopold (1949), Hirt (1994) and Hays (2007) distinguishes this understanding of conservation from descriptions in the commodity forestry (*Journal of Forestry*) and wildlife literature (*Journal of Wildlife Management*). Conservation biology, properly understood, appears to offer an appropriate understanding of ecological forestry or “conservation”, including an approach scientific principles and practices for protecting biological diversity and ecological complexity. The following section addresses conservation biology to examine the manner in which this “mission-oriented” crisis-discipline helps explain the competing paradigms within

conservation and ecology, including the compositionalist, as well as functionalist, interpretations of scientific management.

These descriptions of conservation are helpful in explaining the role of science in democratic societies and develop an understanding of forest management. Unlike the orientation in resource management, committed to extracting goods for primarily private interests, conservation biology emphasizes scientific management that maintains and enhances the biotic composition of forest systems.

What is Conservation Biology

In the seminal conservation biology essay, “What is conservation biology,” Michael Soulé (1985) called upon scientists to establish this new discipline with the “goal to provide principles and tools for preserving biological diversity,” setting a “new stage in the application of science to conservation problems” (727). The challenge for this “discipline with a deadline” (Wilson 2000) began after many respected scientists (e.g., Pete Brussard, William Conway, Jared Diamond, David Ehrenfeld, Thomas Lovejoy, Bob May, Curt Meine, Bryan Norton, Reed Noss, Peter White, and EO Wilson) joined Soulé in the creation of the Society for Conservation Biology.

These scientists described the core goal of conservation biology as conserving biological diversity— “the marvel of life” (White 2005). “The logic is that the higher the number of species and the greater the genetic diversity within species, the larger the range of future possibilities and the faster the rate of response to change” (White 2005). According to its founders, conservation biology was focused on a “core function: providing reliable and useful scientific information on biological diversity *and* its

conservation” (Meine, Soulé & Noss 2006:646, emphasis added). Central to the science, the composition of biotic diversity on genetic, species, and landscape scales is also fundamental for the application and practice of conservation at the site-specific level (Meffe 1994, White 2005).

The mission of conservation biology requires scientists to develop new principles and technologies for guiding management of biological diversity and ecosystem complexity. The approach signaled a new focus for individual scientists who felt “compelled to devote themselves to the rescue effort. [Conservation biology] is a way of pledging our support for life” (Soulé 1991:225). Another founder, David Ehrenfeld, asserted that conservation biology “is not defined by a discipline but by its goal—to halt or repair the undeniable, massive damage that is being done to ecosystems, species, and the relationships of humans to the environment” (1992:1625). Individual conservation biologists distinguish themselves by following this mission orientation and committing themselves to the production of scientific knowledge while guiding research with a fundamental normative question: how to best conserve biotic diversity?

Conservation biology also informs management and further develops Leopold’s theory of the A/B Cleavage by advancing two ecological paradigms that develop understanding of biotic diversity and ecosystem processes: the “functionalist,” ecosystem ecology (Odum 1968) and the “compositionalist,” evolutionary ecology (Soulé 1980; 1985; Norton 1988; Meffe 1994; Noss 1994; White 2005). Functionalism, or ecosystem ecology theory, is a “process-oriented, thermodynamic approach to ecology that begins with solar energy coursing through a physical system that includes

but is not limited to the biota” (Callicott 1999). In Odum’s classic formulation of ecosystem ecology (1968), the functionalist perspective regards the presence of species as parts of an interlocking process of energy transfer and nutrient cycles. The functionalist approach values ecosystem health, ecological services, ecosystem management, sustainable development, and other more anthropocentric approaches (Callicott 1999).

Recently, Callicott made the argument that the early Conservationist resource management approach was better understood as a functionalist paradigm (1999). This was based on the rationale that “human management can improve, or at least not degrade, environmental quality” (Robertson & Hull, 2001:973). This anthropocentric focus is “dedicated largely to the task of gaining knowledge and formulating policies that would rather save either economically useful (including agricultural and pharmacological uses) or aesthetically pleasing species” (Barry & Oelschlaeger (1996:907). While ecosystem function is important to ecology and conservation management, the emphasis of conservation biology remains instead on processes that maintain biotic diversity, not merchantable forest products.

Unlike resource management, ecological forestry and conservation management are guided by principles of conservation biology that are instead anchored by a “compositionalist” paradigm, consistent with Leopold’s description of Group B management, which involves emphasizes biological diversity on a variety of levels (genetic, species, ecosystem, and landscape). “Conservation decisions based on the compositionalist school of thought emphasize the conservation of species and

historically natural conditions (e.g. ecological restoration, biological integrity, native species), [where] humans are considered to be distinct from nature, and thus environmental quality is best when human modification is least” (Robertson & Hull 2001:973).

The compositionalist paradigm views conservation through the lens of evolutionary ecology, which is an approach to ecology focused on entity-oriented, biological approaches to “organisms aggregated into populations” (Callicott et al. 1999). Ecological forestry and conservation management are guided by a compositionalist-oriented paradigm that emphasizes biological diversity, ecosystem complexity, and ecological restoration. This description in the literature is consistent with the original interpretations of conservation management based on Leopold’s Group-B Land Ethic.

Conservation biology is primarily driven by this compositionalist approach based on ecological-evolutionary principles (Group B), which address biotic diversity as the standard for management. Following the Group B, evolutionary-ecology framework, conservation management is informed by compositionalist concerns for native species and the processes that maintain them, as well as the problem of irreversibility and species extinction (Leopold 1949, White 2005, Cox 2007).

The conservation literature, for example, describes species extinction as part of the larger pattern of biotic homogenization occurring globally. This specific phenomenon is identified as the “Homogeocene” (Olden 2006) — the growing global extinction spasm that has led to the catastrophic loss in species diversity (genetic, taxonomic, and functional) and the increase in cosmopolitan, invasive species. Unlike

the five previous 'extinction spasms' on earth, the latest is the largest and only human-caused mass loss of biodiversity.

Social scientists also identify a homogenization of culture, which provides a positive feedback loop that may intensify the loss of biodiversity and ecological systems (Kunstler 1993; McKinney & Lockwood 1999; Olden 2005). While the ecological and evolutionary consequences of homogenization are often discussed for biota, new attention is being paid to the "manner in which social aspects of human life may also be affected" and the "social repercussions resonating in the wake of biotic homogenization" (Olden 2005:2036). Some authors draw parallels between the homogenization of culture and biotas in order to discuss how the public and policymakers can address the "social implications of biotic homogenization" (Olden 2005:2036).

Given the diversity requirement of the pluralist and agnostic democratic model, as well as the role of heterogeneity in nature, the parallels between homogenization of ecological and social systems informs debates over public participation in national forest management. As explored in Chapter Seven, there may be evidence to suggest democratizing decision-making and conservation management decisions, for example, privileges discourses and cultural models that strengthen biotic and cultural systems. Although citizen participation is restricted only to public lands, a broadened discursive space might have beneficial effects for private land management by privileging evolutionary (compositionalist) and ecosystem (functionalist) ecology (Callicott 1999).

Indeed, as biotic and cultural homogenization cross property-ownership boundaries, so conservation managers must also embrace new approaches.

Mission Oriented Crisis-Discipline

From its origin, the founders of conservation biology have focused on a mission-orientation for the new discipline (Soulé 1985, Norton 1988, Lovejoy 1989). In his seminal paper, Soulé added the terms “crisis-oriented” and “crisis-driven” to the list of modifiers (1985), and called conservation biologists to the mission of preventing the worst effects of the current species extinction spasm—the Homogeocene (Oldon 2005)—the Earth’s largest and first anthropogenic biodiversity collapse (Soulé 1985; Ehrenfeld 1992; Wilson 1999; Ehrlich 2002). In the opening chapter of *Conservation Biology: an Evolutionary-Ecological Perspective* (1980), Soulé and Wilcox described conservation biology as “a mission-oriented discipline comprising both pure and applied science” that defined an orientation similar to the framework explained by Leopold’s Land Ethic and the Group B management approach.

As a crisis-discipline, conservation biology was defined in a manner analogous to the mission-driven nature of medical science. Conservation biology’s practitioners consider themselves “physicians to nature” based on the “many parallels between conservation biology and the fields of medicine and public health—disciplines infused with morality” (Ehrenfeld 2000:106). Comparing conservation biology to “a crisis science like AIDS and cancer research” (Naess 1990:169), this analogy has a long legacy extending back through the conservation literature to Wallace (1876), Marsh (1864), Muir (1916), Leopold (1949), and Carson (1962). Leopold, for example, believed the

environmental crisis represented a “world of wounds” where the ecologist “must be the doctor who sees the marks of death in a community that believes itself well and does not want to be told otherwise” (Leopold 1953:197,165).

The mission orientation of conservation biology is based on normative dimensions that, as Soulé argued (1985:42), “are a genuine part of conservation biology.” Noss (1999) noted that conservation biology’s distinguishing characteristic is an “overarching normative assumption... that biodiversity is good and ought to be preserved.” Recently, in the *Journal of Conservation Biology*, Meine, Soulé, and Noss wrote, “This explicit recognition of conservation biology’s ethical dimension stood in contrast to the careful avoidance of such considerations, even within ecology, in prior decades” (2006:641). In short, unlike other approaches described in the resource management literature, management based on conservation biology accepts the normative dimensions relating to the value of biotic diversity and ecological complexity.

The conservation biology literature includes an investigation into the specific value-laden, normative underpinnings of conservation biology, beginning with its rhetorically significant name (Soulé 1985; Rolston 1988:240; Oelschlaeger 1996:909). Most importantly, the term ‘conservation’ is itself normative, and signals a “commitment to the goal of protecting habitat and preserving biodiversity” (Barry & Oelschlaeger 1996:909). Soulé also wrote in “What is Conservation Biology?” that the discipline is based on “value statements that make up the basis of an ethic of appropriate attitudes toward other forms of life” (1985:42).

Defining the discipline in this way, the normative dimensions and empirical goals are merged in a tenuous, dynamic approach to conservation. Barry and Oelschlaeger (1996: 909) maintain that conservation biology is not “applied biology but rather hinges on an explicit evaluative judgment: Biodiversity is good and should be preserved. For good or ill, contextual values have an effect on the practice of conservation biology.” As its name reflects, conservation biology suggests a particular “tension inherent in the field of conservation biology and in the term itself” (Meine & Meffe 1996:917).

Conservation is a collective term used to define the maintenance of biotic diversity and ecosystem complexity, while ‘biology’ is recognized as the dispassionate, objective, and systematic study of life (Meine & Meffe 1996). While the practice of conservation biology is based on objective scientific principles, conservation is fundamentally influenced by a normative emphasis and “framework for a specific ‘right’ outcome” (Van Houtan (2006:1368).

These assumptions also include, for example, the collective norms that “diversity of organisms is good, ecological complexity is good, evolution is good, and biotic diversity has intrinsic value” (Soulé 1985:42). These norms have been expanded to include, 1) extinctions caused by humans are bad; 2) ecological complexity is inherently good; 3) evolution is good; and, 4) biological diversity has intrinsic value (Matsuda 1997). These normative statements demonstrate how “the whole foundation of conservation biology is based on values. None of these assumptions can be scientifically proven” (Matsuda 1997: 1449). Instead, empirical and objective research is aimed at

important conservation questions that are ordered according to normative understandings of the value of species and ecosystems.

These normative dimensions of conservation distinguish the science from other disciplines in relation to the accepted value-laden quality of the term. Unlike physics, for example, which describes conservation in non-normative terms, conservation biology incorporates value-based assumptions and “a more comprehensive, moral role in their conservation of biological values,” which are not testable through the scientific model and empirical science (Rolston 1989:240). Identifying conservation biology’s normative dimensions aids practitioners in navigating environmental conflicts, directs research questions, sets policy standards and guidelines, and informs public participation and management outcomes (Robertson & Hull 2001:973).

Positivism

Conservation biology’s is also informed by the tradition of positivism, a scientific discourse originating in the 1930’s that strives for objectivist scientific explanations based on value-freedom, verifiability, confirmation, and falsification. The empirical scientific framework of positivism has created a tension within conservation biology, which has normative (or value) claims that can be neither proved nor disproved (Hempel 1970; Putnam 1987, 2002). Many pages in the *Journal for Conservation Biology* have been dedicated to the debate over science, advocacy, and activism (Noss 1996; Barry & Oelschlaeger 1996; Matsuda 1997).

While the goals of conservation biology may be driven by normative questions, its science and application are influence a tradition within scientific philosophy called

positivism. These include: 1) a verifiable theory of truth where meaning is provided by empirically proven statements (Ayer 1956; Hempel 1970); 2) the idea that verification, confirmation, and falsification are grounded by theory-neutral "basic sentences" (Popper 1959; Kuhn 1962; Feyerabend 1975; Popper 1963; Lakatos & Musgrave 1970; Toulmin 1972); 3) deductive-nomological conceptions of explanation (Hempel & Oppenheim 1948; Hempel 1965); and, 4) analytical approaches to identify the "laws of nature" (Goodman 1954; Chisholm 1966).

According to positivists, science is a neutral dimension that provides "the observer an objective account of the world as an object, one that stands apart from human intention and purpose.... a picture of the way things actually are, good for all people in all places at all times" (Barry & Oelschlaeger 1996:970). The literature describes this approach as the 'normal' state of science, in which "uncertainties are managed automatically, values are unspoken, and foundational problems unheard of" (Funtowicz & Ravetz 1994:146). The positivist approach to ecology as 'pure' science is based on "a theory of knowledge that assumes a fundamental division between the knower and the known, the subject and the surrounding objects" (Evernden (1992:73).

Some scholars who accept positivist approaches to conservation disregard evaluative and prescriptive statements as nonscientific and irrelevant (Walker 1992), and call for a 'measurable distance' between scientific investigation of biodiversity and activism (Brussard et al. 1994). According to some authors, scientific knowledge is only meant to resolve the technical questions of policy formulation (Murphy 1990). The positivist approach to science includes 'normal' science's assumptions in which

uncertainties are problematic, values are separate, and foundational problems do not exist (Robertson & Hull 2001).

The literature has a long tradition of debate relating to assumptions of positivism, including Kuhn's early rejection of the positivist claim that "one full, objective, true account of nature and the proper measure of scientific achievement ...brings us closer to that ultimate goal" (1970:171). In fact, positivism itself has been significantly reworked by positivist scholars over the last several decades. According to Roebuck & Phifer, "every key tenet of this perspective has been either abandoned, liberalized to the point of triviality, or thoroughly undermined by positivism's own original practitioners...yet, because it is easy to pick and choose among its elements, it continues to be taken for granted as the basis of most popular and mainstream scientific discourse" (1999:445). As a new post-positivist science, conservation biology aims to provide the 'pure' scientific mechanisms to achieve the normatively defined ecological forestry and sustainable conservation management.

The conservation literature describes efforts to distance conservation biology from a positivist approach that conflicts with the inherent value-laden 'mission' of the discipline. Norton's (1988:238) rejection of the "false façade of value-free science" provided scientists an early warning in the conservation literature. "Any science that hitches its wagon to positivism rests on the claim that scientific knowledge is value-free and thus disguises (at the risk of forgetting) its normative commitments" (Barry & Oelschlaeger 1996:970).

Many conservation biology scholars believe the discipline faces the problem of building a credible scientific discourse while remaining committed to the normative mission to maintain and conserve biotic diversity and ecological complexity.

Conservation biology is not alone in this endeavor; most scholars believe every scientific discipline is value-laden (Putnam 1981, 1987, 1995; Longino 1990; Shrader-Frechette & McCoy 1993). Shrader-Frechette & McCoy (1993:82, 83, 86) argue that “no science can avoid completely the difficulty of methodological value judgments associated with interpretations of confirmation.”

In his influential article, “What is a Conservation Biologist?,” Norton (1988:238) called for questioning the positivistic assumptions of science, in which “the first point of attack in this discussion should be on the positivist view of science itself—on its model of nature as a mechanism composed of interchangeable parts.” The rigidity of positivism often prevents individual scientists, once they have produced empirical findings on an important conservation issue, to take the next step to present a public argument, which can inform advocacy and strategic activism. Under the influence of positivism, scientists may be “notoriously unwilling to take a stand against issues such as environmental degradation and biodiversity loss” (Robertson & Hull 2001:972), which clashes with the role of conservation biology as an inherently normative discipline. “Under the hegemony of positivism, it is difficult to formulate and defend conservation goals on ‘scientific’ grounds” (Robertson & Hull 2001:972).

More recently, through the process of articulating the normative dimensions of conservation biology and developing a critique of positivist science, proponents of

conservation management and ecological forestry have a foundation to develop sound policy based on the most urgent environmental issues relating to biological diversity and ecosystem function. Many scholars call this alternative, post-positivist approach as “a new, enriched awareness of the functions and methods of science ... In this sense, the appropriate science for this epoch is ‘post-normal’” (Funtowicz & Ravetz 1995:146).

Many believe conservation biology should become a “post-normal science” informed by normative goals of biodiversity and ecosystem integrity, while it “reflexively evaluates the knowledge it constructs for the qualities that make it effective at influencing conservation decisions” (Robertson & Hull 2001:971). Barry and Oelschlaeger (1996: 907, 909) assert that “a post-positivistic, self-reflective awareness of societal influence on science is a step forward...The view of conservation biology as value-driven does not discredit its scientific legitimacy.” Masi succinctly articulated the post-positivist possibility for conservation biology arguing, “Our science is not neutral, because we care about the outcome (1994).”

Occupying both realms of values and ‘facts’ (contingent, consensus-based truths) allows conservation biology to embrace a ‘post-normal’ approach to environmental dilemmas. Van Houtan (2006:1371) calls for grounding conservation biology in both scientific and normative dimensions, because “if conservation is a virtue then scientific arguments alone are insufficient and the battle visibly involves ethics and social traditions, as well as science.”

Democratic theory and public participation are informed by this appraisal of value questions and the influence of normative dimensions in environmental policy

decision-making process (McCann 1986; Paehlke 1988; Clark et al. 1994). Although “in principle it might be possible to avoid contextual values, it would be almost impossible not to do so.... [Positivism] is not sufficient to ground environmental policy” (Shrader-Frechette & McCoy 1993:83). This dissertation is informed by the movement in conservation biology toward a post-positivist science grounded by normative goals favoring biological diversity and ecosystem complexity, while reflexively accepting the value of constructed knowledge for its potential to influence national forest decision-making.

Constructivism

On the other side of the spectrum from positivism, the ‘constructivist’ critique of science also informs ecological forestry and conservation management. Scholars from this school believe science is a “historically situated cultural practice” (Robertson & Hull 2001:972), and scientists “construct” knowledge that inevitably reflects the social context in which it was created and used (Marx, L 1970; Harvey 1974; Tobey 1981; Kingland 1985; McIntosh 1985; Sagoff 1988; Golley 1993; Barbour 1995; Bocking 1997).

As Sterling (1990:80) maintains, in constructivist theory, “the classical disjunction between subject and object, fact and value is invalid; the knower is implicated in the known and there can only be ‘relative objectivity.’ How facts are investigated, selected, and interpreted depends upon one’s values, which are colored by how one sees the world.” Constructivist scholars make the argument that scientific knowledge is not the product of an objective observation, but is informed by a socially constructed and accepted worldview (Latour 1987; Haraway 1991; Golinski 1998). Science is therefore

an “intersubjective social activity that (re)produces and extends particular visions of reality through and with networks of power” (Robertson & Hull 2001:972).

This appraisal is helpful for developing an understanding of ecological forestry and conservation management by acknowledging the culturally constructed nature of science and policy present in environmental management. This ontological position provides a difficult challenge to science in general, and is especially problematic for conservation scientists working to develop the most appropriate, scientifically verifiable, and tested approaches for their mission-driven science.

One of conservation biology’s founders, Michael Soulé, recently engaged leading constructivists in a debate, rejecting the claim “that the scientific enterprise is biased and value-ridden and that, as a project that seeks knowledge, it is no better than astrology... that scientific texts are just stories, no better or worse than novels, no more authoritative than religious canons or science fiction” (1995:151,154). Soulé believes the constructivist argument sets up a “solipsistic trap” where scientists “suffer from sensory deprivation—a kind of developmental deficit of nature exposure that causes the solipsistic hallucination that the world is illusionary” (Soulé & Lease 1995:151).

Additionally, as Shrader-Frechette warns, “If there is no reality independent of the mind, there would be no way to test our scientific hypothesis and no reason that better theories should yield more-accurate predictions” (1996:914).

Contemporary conservation literature includes much discussion of this paradox and calls for balancing the constructivist critique with the best description of ‘real,’ material environmental conditions necessary to produce conservation management

outcomes. The construction of science can be understood as a cross-cultural, congruent explanation of the natural world, in which scientific consensus gains a tentative reality.

This approach is consistent with the post-positivist position that scientific societies, including the Society for Conservation Biology and the Ecological Society of America, are influenced by normative dimensions while individual conservation practitioners use the “best available science,” as required by statutory environmental law like the National Environmental Policy Act (42 U.S.C. 4321-4327). Conservation biology, ‘constructed’ as a mission-driven, value-based scientific practice, requires attention to this constructivist critique. However, accepting the influence of individual and cultural values, however, does not indicate a flaw in conservation biology. The constructivist critique helps develop an understanding of science as a complex natural and social enterprise. Conservation management and ecological forestry are therefore tasked with acknowledging the social construction of science developed by constructivist theory while also designing and implementing post-positivist conservation practices based on the best available science.

CONCLUSION

In conclusion, this chapter has explored the history and evolution of conservation philosophies in the United States as an ongoing struggle over the nature of science and its application to management of federal public land. This chapter has addressed the contested definitions and intellectual lineage of different conservation

philosophies that subscribe to either resource management or ecological management of national forests. This history of environmental policy and law in the United States is informed by democratic theories that explain why different decision-making structures produce unique conservation outcomes, or a lack thereof.

The next chapter will address the legal and political channels through which conservation has been integrated into federal lands management in the United States, with special attention to mechanisms that democratize decision-making to produce disparate ecological outcomes. Chapter Six will outline the changes to forest management under the Healthy Forest Initiative, which are analyzed in Chapter Eight and discussed in Chapter Nine.

CHAPTER FIVE: THE U.S. FOREST SERVICE, ENVIRONMENTAL LAW, & PUBLIC PARTICIPATION

"National parks are the best idea we ever had. Absolutely American, absolutely democratic, they reflect us at our best rather than our worst."

Wallace Stegner, 1983.
"The best idea we ever had."
Wilderness (spring), 4-5.

INTRODUCTION

Debate over public participation in natural resource decisions reached a fever pitch during the late 1960's after several high-profile environmental emergencies broke through to the collective American consciousness. As a result of new environmental legislation established during this era, policy and conservation scholars had opportunities to study the role of public participation in federal agency decision-making and federal land management (Burch 1974; Friesema & Culhane 1976, 1979; Sewell & O'Riordan 1976; Wengert 1976; Ingram & Ullery 1977).

Today, there is considerable agreement in the policy and conservation literature that democratizing federal agency decision-making processes improves national forest management (Moote & McClaran 1997; Overdevest 2000, Vaughn 2003, Teich et al.

2004, Manring 2004, 2005, Germain 2005, Petersen MN et al. 2004, National Research Council 2008). Many conservation scholars argue that statutory requirements for public participation, through traditional interest group representation (Stewart 1975) and direct citizen participation (Tiech et al. 2004; Peterson 2004) have opened Forest Service decision-making to more ecological, non-consumptive considerations (Kessler, Salwasser, Cartwright, & Caplan 1992, Jones & Mohai 1995; Jones & Taylor 1995; Baldwin 1997). New statutes have facilitated more direct exchange with decision-makers (Moote and McClaran 1997), and promoted legal accountability by federal agencies (Coggins 1999; Manring 2005). Other studies have demonstrated that citizen oversight and participation compelled “the Forest Service to comply with environmental laws and regulations” (Manring 2005:62) and “follow laws more closely” (Baldwin 1997:2).

This chapter will address the creation of federal environmental and public participation law governing the Forest Service and identify recent trends in national forest policy. This will allow for a comprehensive review in Chapter Six of the “Healthy Forest Initiative” under George W. Bush’s administration, which created a complex suite of controversial changes to public participation and ecological management rights established in the 1970’s environmental era. This assessment of the constantly shifting legal landscape will provide a starting point for analyzing national forest management decisions in North Carolina from 2003 to 2008 in Chapters Seven and Eight, with the ultimate aim of assessing which models of democratic decision-making actually guided those processes and helped shape the eventual ecological outcomes (Chapter Nine).

This chapter also addresses several important controversies regarding the Forest Service that help explain the move away from traditional elite administrative modes in these circumstances. These events helped transform the Forest Service into an agency driven by the modern aggregative pluralism (interest group representation) that is the dominant model in most Western liberal-democratic countries. After tracing the eclipsing of the traditional administrative model by interest-group representation, this chapter addresses more recent, alternative processes that include more direct, dissent based participation through the statutorily guaranteed administrative appeals process.

ENVIRONMENTAL LEGISLATION

Even before the “participation explosion” (Almond & Verba 1963) during the “environmental era” beginning in the late 1960’s (Andrews 1999:13), New Deal reforms of the 1940’s had established the first ‘sunshine’ provisions providing more transparency and public documentation for many federal agency actions. Most importantly, the *Administrative Procedures Act* (APA) was a process-oriented statute requiring specific public participation procedures for all federal agencies. In 1946, Congress passed the APA to establish practices and procedures for all government agency rulemakings to guarantee greater information exchange through new citizen rights to receive notice, submit evidence, and address hearings officers. The APA mandated that courts “shall” “set aside” an “agency rule” found to be “arbitrary, capricious [or] otherwise not in accordance with law” (5 U.S.C. §§ 706, 551:13). The specific reforms placed responsibility on the public to engage the process, although the public was limited to taking part in only certain phases of the decision-making process

(Rosenbaum 1978:82). “In this era, participation was consistent with elite democratic themes” (Steelman 1996:34).

Early controversy relating to the concentration of powerful interests in National Forest decision-making in the 1950’s led to the passage of the “*Multiple-Use, Sustained-Yield Act of 1960*” (MUSYA), which was aimed at expanding “uses” beyond the dominance of resource extraction interests to include outdoor recreation, watershed, and wildlife (16 U.S.C. § 528). MUSYA mandated that the Secretary of Agriculture manage forests for “multiple use and sustained yield of the several products and services obtained therefrom” (MUSYA 1969:529)... “with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output” (MUSYA 1969:531).

Despite its name, MUSYA did little to change the dominant Group A resource extraction paradigm shaping decisions in the Forest Service (described in Chapter Four). “While the purposes were expanded from those of the *Organic Act*, the legislation remained broad and discretionary. MUSYA only required that the Forest Service give ‘due consideration’ to the multiple resources that the forests have to offer” (Parent 1992:703). Although MUSYA called for the Forest Service to consider non-commodity interests, “it is equally important to note that MUSYA preserved agency autonomy [and] gave the agency the legal cover it needed to continue its campaign of timber production while publicly embracing multiple use rhetoric” (Burnett & Davis 2002:207). In short, while MUSYA provided statutory authority for the consideration of other uses in agency decision-making, Group A resource extraction continued to thrive under the traditional

elite democratic model until passage of the National Environmental Policy Act and the National Forest Management Act.

National Environmental Policy Act

On April 22, 1970, an estimated twenty million people gathered nationwide as part of the first celebration of Earth Day. Only three months earlier, the reformation of the traditional administrative model for environmental decision-making became evident in the passage of the 1969 National Environmental Policy Act (NEPA, 42 U.S.C. § 4332). As a form of ‘process’ legislation, Congress mandated specific legal and regulatory requirements for agencies to involve the public in any federal action—prior to final decisions—and file in the public record environmental impact statements (EIS) for any “major Federal action significantly affecting the quality of the human environment” (42 U.S.C. § 4332(2)(C)).

During the “environmental era” of the 1970’s (Andrews 1999), NEPA was used to transform the traditional elite model of federal decision-making (based on the Progressive’s ideal of resource management) into an aggregative, pluralistic process that allowed for increased public participation (Sax 1970; Steward 1975; Andrews 1999; Bocking 2004). “Statutory mandates were strong enough to force agencies to stand up to powerful industries” and transform the apolitical administrative traditional model “to openly political administrative decision processes” (Andrews 1999: 219). Congress mandated public participation requirements for U.S. federal lands to allow for citizen groups to represent publicly-held environmental interests in federal agency decision-making (Parent 1992; Andrews 1999; Manring 2004, 2005; Germain 2005).

Congress specifically intended to grant citizen oversight for federal agency decision-making to correct the decades of overrepresentation by resource interests (Sax 1970, Stewart 1975). The pluralistic administrative model transformed the Forest Service decision-making process, requiring “effective public participation within the decision process of natural resource agencies” (Bolle 1970:504). Fortenbery and Harris (1983:52) argued “the challenge of public participation, in the land management planning process, is to balance democratic notions of citizen involvement in government” to address the “inability of traditional democratic structures to deal adequately with the specifics of complex land management process” (1983:52).

The major environmental statutes passed during the 1970’s represent important milestones in the evolution of democratic theory in the United States, in which Congress attempted to include public interest groups to help balance decision-making, navigate the “democratic paradox” (discussed in Chapter Two), and address the fundamental conflict between private resource extraction interests and public demands for increased ecological forestry and conservation management (discussed in Chapter Four).

While NFMA (discussed below) addresses long-term forest-wide planning procedures, regulations established under NEPA created three processes of review for site-specific, project-level management. The Council of Environmental Quality (CEQ), which was created to oversee NEPA, established levels of review for 1) an EIS for all projects that may significantly affect the quality of the environment; 2) an Environmental Assessment (EA) that documents a “Finding of No Significant Impact” (FONSI) or a notice to prepare an EIS; and, 3) in limited circumstances, the agency is

allowed to move forward without documented review if the action fits into a previously defined categorical exclusion (CE).

The National Environmental Policy Act (NEPA) directs the Forest Service to prepare a detailed “environmental impact statement” (EIS) for major federal actions that may significantly affect the quality of the environment. The EIS must address all unavoidable adverse environmental effects, alternatives to the proposed action, and any irreversible and irretrievable commitment of resources (42 U.S.C. § 4332(2)(C)). If the Forest Service is unable to determine whether a project may significantly affect the quality of the environment, the agency must perform an environmental assessment (EA) (40 C.F.R. §§ 1501.4(b), 1508.9). If, through the EA, the agency concludes the proposed project will not significantly affect the environment, the agency must issue a finding of no significant impact (FONSI). 40 C.F.R. §§ 1501.4(e), 1508.13. Otherwise, the agency must prepare an EIS. 40 C.F.R. § 1501.4(c).

If the Forest Service determines that specific classes of management have no significant effect, individually or cumulatively, on the quality of the environment, regulations implementing NEPA allow the agency to establish categories of management (CE’s) that are excluded from the EIS and EA requirements (40 C.F.R. §§ 1507.3(b)(2)(ii); 1508.4.) Under the original implementing language for the regulations, the Forest Service could only implement a CE projects if no extraordinary circumstances were present (40 C.F.R. § 1508.4.) As Chapter Six and Eight demonstrate, this extraordinary circumstances rule was changed by the Bush Administration’s Healthy Forest Initiative.

In explaining the original intent of the regulations, the Forest Service stated, “It is the intent of the agency that only routine actions that *have no extraordinary circumstances* should be within the categories for exclusion” (57 Fed. Reg. 43184, emphasis added). Federal courts have upheld this language, including in *Rhodes v. Johnson*, 153 F.3d 785, 790 (C.A.7(Ill.)1998.), in which the judge explained, “It is not enough that the Forest Service has conducted an internal review to determine whether the extraordinary circumstance will cause the proposed action to have a significant impact on the environment. An environmental assessment is the process required to make that determination.”

NEPA also requires agencies to “make available to States, counties, municipalities, institutions, and individuals, advice and information useful in restoring, maintaining, and enhancing the quality of the environment” (42 USC § 4332(2)(G)). Federal courts have upheld NEPA’s provisions mandating substantive weight be given to public input, which set up a “minimum requirement that the decision-making process demonstrates the consideration and effect of valid public input, and challenges the perception that public input is simply an information exchange” (*Earth Island* 2006:45). Moreover, the requirement to explore a range of alternatives has been described as the “Heart of NEPA” (40 C.F.R. § 1502.14) for its power to compel administrators to justify their course of action in relation to other alternatives, including a “no-action” option.

Public participation for site-specific projects under NEPA is limited to a “scoping” process, through which the Forest Service identified issues it would later address through an environmental assessment (EA) process to determine whether there were

significant environmental issues worthy of an EIS. Specifically, public comments are generated during public hearings or accepted directly by Forest Service “NEPA coordinators” during the scoping period, as well as following the completion of a draft EA or EIS (Westman 1985). In initiating a “scoping process”, the CEQ requires agencies to “make diligent efforts to involve the public in preparing and implementing their NEPA procedures.” (42 U.S.C. § 4332(C)). Under NEPA, “the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, shall be made available to the President, the Council on Environmental Quality and to the public” (42 U.S.C. § 4332(C) (2000)). These procedures provided data for this dissertation described in Chapter Seven and Eight.

When a National Forest project is authorized through the CE process, the Forest Service is required to conduct a scoping process that includes a 30-day public notice and comment period. After scoping is complete, the Forest Service publishes a Decision Memo (DM) summarizing the effects analysis and gives a rationale for the decision. As described below, the Forest Service Decision-making and Appeals Reform Act provides an additional 45-day appeal period to challenge the DM. If any appeals are filed, another 45 days are required to address them; otherwise the project goes forward immediately. NEPA, however, only requires the scoping process for projects that are categorically excluded from the documentation process.

Most importantly, NEPA modified the traditional administrative process by providing opportunities for citizen law suits challenging federal agency decisions and environmental impact statements for Forest Service resource extraction projects

(Parent 1992). In an important test case in 1973, for example, the Tenth Circuit ruled in *Wyoming Outdoor Coordinating Council v. Butz* that the Forest Service was required to create an EIS for two clearcut logging projects covering over 10,700 acres (Parent 1992). “The court held that the mandatory language of NEPA’s specific requirements does not leave the decision not to prepare an EIS to administrative discretion” (Parent 1992:705). The court rejected the Forest Service claim that the logging did not constitute a “major Federal action significantly affecting the quality of the human environment” (42 U.S.C. § 4332: (2)(C), and compelled the agency to reevaluate its approach to industrial management.

Despite legal precedence established through NEPA, the Forest Service maintained much control over decision-making authority (Burnett and Davis 2002), and “this so called participatory legislation did little to allow the public to influence policy making” (Steelman 1996:39). Other authors have argued that complex scientific and technical dimensions of environmental decisions were inaccessible to the average citizen (Wengert 1976). The EIS process has also been criticized as a highly-politicized process that deemphasizes quality science (Friesema & Culhane 1976). DeSario and Langton argued that interest groups had co-opted administrators responsible for implementing scientific and technical programs (1987).

In short, NEPA was successful in opening major federal actions to public scrutiny, yet the degree of influence available to citizens had failed to meet expectations to fully transform the Forest Service into a more responsive agency. As recently as 2005, for example, the Bush Administration initiated sweeping overhauls of the regulations

implementing NEPA (CEQ) that would “increase flexibility” (Bosworth 2002) by giving administrators more discretion to consider alternatives or categorically exclude additional classes of management from environmental review.

After the passage of NEPA, powerful private interests reacted by calling upon members in Congress to elevate resource extraction as the “dominant” Forest Service policy concern. “The continuing influence of the commodity industries was reflected in the 1971 report to of the Public Land Law review Commission, chaired by rep. Wayne Aspinall of Colorado... [which] sought to reaffirm a national policy priority for commodity extraction on the public lands, and to declare logging the ‘dominant use’ (rather than just one among other ‘multiple uses’ of the national forests” (Andrews 1999:310). Allies in the industry were trying to rescue commodity forestry and other forms of resource extraction (Grazing, Mining, Oil & Gas), which were coming under increased legal challenges from the newly established NEPA requirements.

Bolle, Church, and Monongahela

Three pivotal events contributed to the more complete transformation of the traditional elite administrative model and mandated more participatory structures that led to the current aggregative, interest-group pluralism. Shortly after Ashley Schiff (1962) and Grant McConnell’s (1966) publications, other important political and legal events—the “Bolle Report”, the “Church Report”, and ruling on the *Isaac Walton League v Butz (Monongahela)*—added to criticism of the Forest Service specifically, as well as other agencies governed under the traditional administrative model, including the U.S. Army Corps of Engineers (Maass 1950), the Bureau of Land Management (Foss 1960),

the Soil Conservation Service (Morgan 1965), and the Tennessee Valley Authority (Selznick 1949). These critiques triggered the passage of federal statutes specifically aimed at correcting the imbalances created by the traditional administrative model (Parent 1992; Wilkinson 1992; Burnett and Davis 2002).

The first event to influence the transformation from the elite administrative model was the publishing of “The Bolle Report” (1970B:141-142), which included a stinging assessment of controversial clearcut logging practices in Montana’s Bitterroot National Forest. During the late 1960’s, steep slope terracing and plantation logging had provoked substantial outrage among the public, which compelled Senator Lee Metcalf (D-MT) to appoint a commission to investigate Forest Service administrative procedures. This committee produced the Bolle report, a “scathing document highly critical of Forest Service management practices in general and clear-cutting practices in particular” (Burnett and Davis 2002).

The report, named after its main author, Arnold Bolle, argued the Forest Service had abandoned multiple-use management “as the governing principle... Consideration of recreation, watershed, wildlife, and grazing appear as afterthoughts... The Forest Service... needs to be reconstructed so that substantial, responsible, local public participation ... can ‘naturally’ take place” (Bolle 1970B:). The influence of resource extraction interests over federal lands management was producing an imbalance that was leading toward more frequent and intense commodity forestry practices (Bolle 1970B).

Another important event leading to a rejection of the traditional Forest Service administrative model was the publication of what became known as the “Church Guidelines” by the Subcommittee on Public Lands of the Senate Committee on Interior and Insular Affairs entitled, “Clearcutting on Federal Timberlands” (1972). These guidelines, named for Senator Frank Church, recommended new criteria for federal lands management that attempted to end the practice of clearcut logging in many areas across the national forest system. Specifically, the committee called for restricting logging on “highly scenic land, land with fragile soils, land with low reforestation potential, and land where reforestation or environmentally acceptable harvesting would be uneconomical” (Wilkinson 1992:142). The Church Guidelines would eventually be written into the *National Forest Management Act* (discussed below) to restrict—although not completely prohibit—clearcutting in areas with steep slopes or aesthetic considerations (16 U.S.C. §1604(6)(3)(E)-(F) (1988). The committee hearings contributed to the criticisms of the resource extraction model, and Congress would use the committee’s final report to ensure the “Forest Service works within the outer bounds of the NFMA, as set forth in the Church Guidelines” (Parent 1992:715).

As the Bolle report and Church guidelines demonstrated, the dominant resource management practices used by the Forest Service raised substantial doubt about overrepresentation of private commodity forestry interests in the traditional administrative model for federal land management (Hirt 1995). These events can be described as policy windows, defined by Kingdon as opportunities for advocates of new proposals to seek support (1984). Policy windows are infrequent opportunities that

allow policy entrepreneurs to attach solutions to perceived problems that take advantage of politically opportune events (Kingdon 1984). The Bolle and Church reports “provided a window of opportunity for fundamental reform. However, after the publicity died down, Congress simply handed national forest policy back to the Forest Service with instructions to undertake ‘remedial action’ ... Consequently, these two events might have passed into oblivion with little real change, if a third event had not occurred” (Burnett and Davis 2002:208).

The third pivotal event was a November 1973 ruling by Federal District Court Judge Robert E. Maxwell on *Isaak Walton League v. Butz (Monongahela)*, 522 F.2d 945, 950-52 (4th Cir. 1975)). This was a significant legal decision enjoining the Forest Service from using the commodity forestry practice of clearcutting in the Monongahela National Forest (MNF) in West Virginia, which was later upheld by the Fourth Circuit Court of Appeals and applied to West Virginia, Virginia, North Carolina and South Carolina. “Local residents had protested the use of clearcutting practices on the MNF, and finding the [Forest Service] unresponsive to their concerns, sought recourse through the courts” (Steelman 1996:116). The lawsuit was the product of controversy from the Forest Service’s “even-aged” clearcutting, labor-saving automation, logging incentives, and the required road-building to access logging areas (Weitzman 1977).

The *Monongahela* decision relied on the 1897 Organic Act that established the federal forest reserves, which required only selective logging of marked trees—not wholesale liquidation of entire watersheds through clearcut logging. Responding to the controversy, the Chief of the Forest Service halted not only clearcutting, but all timber

sales on nine national forests in the four states in an attempt to avoid precedence that may have prevented logging throughout the entire national forest system (Berman & Howe 1992). “For all practical purposes, this ruling eliminated the Forest Service’s preferred method of clearcutting in the Four Circuit” (Parent 1992:708). The court held in *Monongahela* that the Forest Service had exceeded its authority to sell “dead, matured, or large growth trees” that were “marked and designated” for sale (16 U.S.C. § 473-482 1988:476).

As a judicial check to elite administrative power, the *Monongahela* decision created a political vacuum Congress filled by passing the *National Forest Management Act* (discussed below). “The fact that the courts had interpreted the Organic Act stringently prompted Congress to take action sooner than it probably would have under other circumstances” (Parent 1992:708). In the wake of the “Bolle Report” and Church Guidelines, the *Monongahela* ruling was the proverbial final straw compelling Congress to rewrite federal laws to balance competing demands for conservation and resource extraction (Fortenbery & Harris 1983; Parent 1992; Andrews 1999). The *Monongahela* case demonstrated “public concern with forest policy, and to a lesser degree, a public statement that Forest Service has been unable to manage for values other than timber and commercial resource” (Fortenbery & Harris 1983:60).

In effect, these three events created a policy window necessary for members of Congress to find political traction to fundamentally reform the Forest Service and eclipse the dominance of the traditional elite model. Most importantly, new national forest legislation would establish the first statutory protections for public participation directly

in planning and management of federal lands (Rosenbaum 1973; Hirt 1994, Andrews 1999; Steelman 1998, Overdevest 2000, McCloskey 2005).

National Forest Management Act

Under NEPA, the Forest Service exempted itself “on the ground that its management of the national forests was a ‘proprietary’ function under the property clause of the Constitution” (Andrews 1999:426). With NFMA, the Forest Service lost its claim that the agency was simply managing federal property, and instead, public participation was established to address ‘sovereign’ protections for citizens. In addition to the APA’s transparency and NEPA’s procedural hurdles, NFPA allowed individual citizens and interest groups to directly participate in long-term planning for specific national forests.

The traditional model and longstanding dominance of resource extraction in national forests fundamentally changed with passage of the National Forest Management Act (16 U.S.C. § 1604 (1976)) (NFMA), which established the first statutory requirement to open Forest Service decision-making to public participation. Scholars asserted that the legislation was a “firm step in the direction of Congress mandating management procedures... necessary because professional foresters had not been able to resist industry pressures to cut timber” (Barlow 1977:539, 544). Most importantly, new statutory provisions for public participation in federal lands planning established “the most extensive review and planning in [Forest Service] history, and possibly in the history of any federal land management agency” (Fortenbery & Harris 1983:1).

NFMA's passage came on the heels of the 1974 *Forest and Range Renewable Resources Planning Act* (RPA) (16 U.S.C. §1600), which required forest-wide planning for federal public land. The RPA was "the first congressional response to the litigation regarding national forest planning" (Parent 1992:706), which established funding for agency planning of "long- and short- term goals for national forest use" (16 U.S.C. §1600c). The RPA directed the Forest Service to promulgate long-range, system wide plans by providing for "public participation in the development, review, and revision of land management plans" (16 U.S.C. §1600:c).

In addition to preparing forest-wide management plans for each national forest every five years, the RPA required the Secretary of Agriculture to make "plans or revisions available to the public at convenient locations in the vicinity of the affected unit for a period of at least three months before final adoption, during which period the Secretary shall publicize and hold public meetings or comparable processes at locations that foster public participation in the review of such plans or revisions" (16 U.S.C. §1600:c). Although this congressional mandate included specific planning procedures, "there were not many real constraints on Forest Service discretion" (Parent 1992:707). Although the RPA was eventually incorporated into NFMA, it provides one of the earliest examples of a federal law establishing statutory protections for direct public participation in federal lands planning and management.

Building on the RPA, NFMA included statutory mandates for the Forest Service to include the general public in federal lands management (Fortenbery and Harris 1983, Andrews 1999), which "specify procedures to insure that land management plans are

prepared in accordance with [NEPA]” (16 U.S.C. § 1604(g)(1) (1976). “Never before had the Forest Service been required to open up the decision-making process to the general public, and then consider and react to that input” (Fortenbery and Harris 1983:60).

Specifically, NFMA directs the Forest Service to “provide for public participation in the development, review and revision of all land management plans, and to hold public meetings, or comparable processes in locations that foster public participation” (16 U.S.C. § 1604(d)). For over 75 years, public participation in federal lands management was mostly an informal procedure (Coulombe 2004). “[NFMA’s] success was the need to make concessions to the amenity coalition, which pushed hard for provisions allowing public participation in forest planning processes and land use decisions” (Burnet & Davis 2002:222).

NFMA signaled a major breakthrough by establishing citizen participation in management plans as “mandatory public input, which had not been required under previous Forest Service practices” (Andrews 1999:311). Using the plain meaning standard to interpret legislative intent, NFMA states, “land management planning shall be accomplished with improved opportunity for public participation at all levels” (16 U.S.C. § 1604(d)).

Legal scholars also interpret legislative intent through congressional history of speeches, committee hearings, and conference reports during the bills passage. An early conference committee report on NFMA, for example, shows the committee considered and rejected an amendment that would have released the agencies from measurable guidelines, and consequently, accountability to the public. Instead, the

committee included a provision that required planning regulations include specific standards and guidelines consistent with the APA. “All proposed amendments pertaining to increased participation in the planning process were accepted in the Congressional debates. Congress saw the need to provide this check at every important stage in the planning-management process. This recognition of the importance of participation, and the value it brings to the decision making process cannot be deemphasized” (Fortenbery & Harris 1983:86).

Congress also mandated that strict guidelines and scientific standards be documented in the public record of decision to provide substantive information for citizens to engage in forest management. “Congress specifically considered an option that would allow the Forest Service greater flexibility and discretion in forest planning and rejected it in favor of a scheme that required the Forest Service to implement statutory directives through a transparent and open rulemaking process” (Flournoy 2005:15). NFMA required agencies to document environmental analysis in the public record to provide the “public a crucial check on the Forest Service’s activities...a benchmark against which the public has been able to track the agency’s performance” (Flournoy 2005:15). Congress embedded the guidelines in the statute itself and required the Forest Service to incorporate proposed standards into the public planning process (S. CONF. REP. NO. 94-1335 at 22 (1976), reprinted in 1976 U.S.C.A.N. 6720, 6724).

Commodity Forestry Criticism of NFMA

NFMA's mandates for public participation in federal lands management provoked significant scorn from resource management interests, which fought to include provisions in NFMA that reaffirmed the status of resource extraction in federal lands. Some congressmen worked to offset conservation gains and prevent "repercussions from the timber industry, which would find its profit margin falling if it were forced to use a harvesting method less economically efficient than clearcutting" (Parent 1992:708). NFMA actually increased resource extraction through inclusion of "ambitious timber harvesting goals established for each national forest through the implantation of multiyear management plans" (Burnet & Davis 2002:222). While Congress secured concessions aimed at radically transforming the traditional elite administrative model for national forests, the Forest Service held on to controversial commodity forestry management practice, including clearcutting, steep-slope terracing, and tree-plantation farming (Hirt 1994).

Although NFMA signaled the transformation of a traditional elitist administrative model for the Forest Service decision-making process, public participation in agency decision-making did not produce a reduction in the level of resource extraction taking place in national forests. The first round of national forest plans developed in the 1980s doubled logging in both Rocky Mountain and Eastern national forests, approved more than 100,000 miles of new logging roads, and opened "millions of acres of previously inaccessible forests to logging and other development" (Beaver et al. 2000:3).

During the 1980s, the Forest Service resisted change to resource management policy and increased controversial resource management practices favored by the private interests that traditionally dominated agency decision-making. In addition to the creating a more insular culture in the Forest Service, the Reagan Administration also increased industrial logging in national forests, which “led to casualties in scientific integrity and agency credibility as timber planners, under pressure to ‘get out the cut,’ adopted unreliable assumptions and used flawed data to justify harvest quotas. On many forests, reforestation accomplishments and suitable timber base calculations were exaggerated, existing timber volumes and ‘yield’ annual growth assessments were inflated, while assumptions regarding environmental damage were underestimated” (Hirt 1994:xi). In fact, industrial logging accelerated during the post-NFMA period to 12.7 billion board feet of trees in 1987, 40 percent of which came from the Pacific Northwest (Beaver 2003). NFMA’s environmental goals “were largely unrealized during the 1980s as the Forest Service resisted making changes in timber policy” (Beaver et al. 2000:3). Public participation in federal lands management came with a high political price tag: while the public gained access to federal agency decision-making, the Forest Service rejection of scientific knowledge, along with pressure from private interest groups, prevented change in the Forest Service management practices (Hirt 1994).

The resource management literature also included significant discussion about the flaws of NFMA, including discussion of NFMA as representing unjustified acquiescence to public calls to change national forest decision-making processes. O’Loughlin, for example, believed the process was a “hopeless morass” and

“unworkable situation” that encouraged “public participation at too many points in the forest plan process” (1990:19). In Allen and Gould’s (1986) highly cited article in the *Journal of Forestry*, the authors rejected “wicked’ management issues produced by NFMA and called for a return of the “technocratic” Pinchot resource management approach by “professionals” instead of emotive citizens. Allen and Gould also believed NFMA mandated plans were analogous to “Soviet agriculture,” and they called upon Congress to reject NFMA and “go back and search closely its directives” in order to “unleash and upgrade the talents of forest managers to do incremental planning” (1984:23).

The traditional elitist resource management approach, according to Allen and Gould, avoided intractable “wickedness” relating to public participation by upholding the elite democratic reliance on the rational-technical administration. The solution, according to the authors, was to repeal NFMA’s public participation requirements, including “long-range forest plans involving power struggles, imprecise goals, fuzzy equity questions, and nebulous information and thus become wicked” (Allen & Gould 1986:23). The authors considered the *Monongahela* decision as “a seemingly innocent local problem [that] precipitated the wicked problem of a multilayered power struggle to determine who had a legitimate role in planning the use of national forests” (1986:22).

This critique of NFMA, public participation, and environmental policy in general persists in contemporary resource management literature and continues to attract significant attention by policymakers and agency bureaucrats. The Bush

Administration, for example, recently lost a court battle to remove formal public participation procedures required by the *National Forest Management Act* and exempt entire forest plans from NEPA's requirement to conduct an EIS (*Citizens for Better Forestry v USDA Forest Service* 2009). The Bush Administration's critique of NFMA's public participation was based on the claim that the forest-wide planning process is unnecessary and time-consuming, and should be closed to formal public oversight (Zwight 2004). One Bush Administration Forest Service designee published an article on the agency web page with the claim that a forest plan, unlike an individual project, "only has an environmental effect if it is knocked off the table and lands on the ground" (Zwight 2004:28). According to Zwight, forest-wide planning does not "affect the environment" (2004:28) and is therefore not subject to NEPA and NFMA's public participation requirements.

Like Allen (1986), Zwight called public participation a "wicked problem" exacerbated by NFMA, which creates "promised procedural gridlock" requiring the Bush Administration "to cut through the procedural thickets" and make the agency "more business-like, in the most positive sense of that term" (Zwight 2004:30). Scott Berg, with the American Forest & Paper Association, wrote another critique of NFMA (2005), claiming mandatory standards and procedures in the original 1982 regulations should not be applied through the forest planning process, but instead to individual projects. Berg argued that public participation in planning should "limit objectives to the handful of the most important issues and priorities confronting the forest" (2005:33). The degree of public participation in planning, according to NFMA's critics, should be up the

discretion of the agency and limited to the “objectives” that relate to project-level affects on the environment—not forest-wide planning that could, for example, limit resource extraction in wide portions of national forests. In short, this critique subscribed to the basic tenets of elite democratic theory, which enshrouds much of the Bush Administration’s “Healthy Forest” regulation changes (discussed in Chapter Six).

Ecological Forestry under NFMA

Despite these limitations, the passage of NFMA is upheld in the conservation literature as a significant moment representing the incremental democratization the national forest management process. Conservation groups used NFMA to “block the agency from approving, planning for, or engaging in a commodity production activity, typically involving timber harvests, or to force the agency to meet its NFMA obligations to ensure the viability of species within the National Forests” (Jones & Taylor 1995:322).

Seventy-five percent of all NFMA-based litigation and appeals of Forest Service decision-making challenged resource extraction, and litigants successfully prevented thirty-seven percent of those projects (Jones & Taylor 1995). Studies showed public interest groups predominantly used NFMA to gain access and partially succeeded in shifting the “emphasis of National Forest management away from commodity production, in favor of resource protection” (Jones & Taylor 1995:323). In short, NFMA litigation was used by conservation groups to counterbalance the overrepresentation of private resource extraction interests in the management in federal public forests. Federal agencies were required to open planning processes to the public to address

systemic agency bias, which transformed federal administrative law and opened forest-wide management decisions to public participation.

Once individual citizens and conservation organizations gained access to forest-wide planning, this new participation—coupled with NFMA’s environmental requirements—brought some balance to Forest Service decision-making. Although planning and oversight did not guarantee immediate change in agency planning, Forest Service Chief Dale Robertson admitted the agency was running into trouble with appeals based on development of sophisticated environmental analysis (GAO 1989). During testimony before a September 28, 1988, Subcommittee in Forestry, House Committee on Agriculture, the Chief told members of Congress the agency was overwhelmed by “numerous complex environmental issues raised in appeals,” based on “water quality, wildlife habitat, or other aspects of the environment. The Forest Service has often had difficulty adequately documenting these effects” (GAO 1989:22). In short, the adverse effects of commodity forestry were now open to direct challenge at the forest-wide planning level, and environmental law was beginning to create the changes Congress originally intended.

An early conference committee report on NFMA (S. CONF. REP. NO. 94-1335 at 22 (1976), reprinted in 1976 U.S.C.C.A.N. 6720, 6724) provides evidence showing the committee considered and rejected an amendment that would have released the agencies from complying with hard and fast environmental regulations. Instead, the committee included a provision that required planning regulations to include specific standards and guidelines consistent with the APA, and inserted guidelines that required

the Forest Service to incorporate proposed standards into individual forest plans (Flournoy et al. 2005).

NFMA's 1982 implementing regulations approved under the Reagan Administration, for example, required the agency to "maintain viable populations of existing native and desired non-native vertebrate species in the planning area" (47 Fed. Reg. 43026, 1982). In October, 1984, this provision allowed citizens groups to appeal agency actions relating to the Spotted Owl Environment Impact Statement (EIS) in the Pacific Northwest. In fact, after Chief Robertson rejected a citizen group's appeal of the EIS, the Deputy Assistant Secretary of Agriculture later reversed the Chief's decision and sent it back to the region for additional work (USDA 1988).

More recently, conservation groups have used NFMA's monitoring requirements to hold the Forest Service to enforceable standards and guidelines, resulting in several lawsuits that successfully blocked hundreds of logging projects during over the past decade. Table 3 summarizes several cases used by public interest groups to enforce NFMA's rare species guidelines.

Table 3. Summary of recent lawsuits upholding environmental standards and guidelines for species protections.
<i>Conservation Northwest et al. v. Mark Rey et al.</i> 2009
<i>The Land Council v. Powell</i> , 379 F.3d 738 (9th Cir. 2004)
<i>Utah Environmental Congress v. Bosworth</i> , 372 F.3d 1219 (10 th Cir. 2004)
<i>Idaho Sporting Congress v. Rittenhouse</i> , 305 F.3d 957 (9 th Cir. 2002)
<i>Utah Environmental Congress v. Zieroth</i> , 190 F.Supp.2d. 1265 (D. Utah 2002)
<i>Forest Guardians v. U.S. Forest Service</i> , 180 F.Supp.2d 1273 (D. N.M. 2001)
<i>Sierra Club v. Martin</i> , 168 F.3d 1, 7 (11 th Cir. 1999)

Without strict ecological standards and guidelines that require monitoring for rare and endangered species, it is difficult to determine whether the public participation process could have influenced an insular agency to challenge forest planning. As the next section shows, public participation at the site-specific project level also evolved to provide another avenue through which groups and individual citizens could influence agency decision-making.

PUBLIC PARTICIPATION & SITE-SPECIFIC PROJECT-LEVEL MANAGEMENT

With the landmark 1970's environmental laws—and subsequent court decisions upholding the legal status and application of those laws—public participation gained statutory protection, affording citizen groups access to forest-wide planning (NFMA) under the emerging aggregative pluralism administrative model. Project-level planning, however, was not open to formal public participation, such as notice, comment, and administrative appeals, until the 1992 *National Forest Decision-making and Appeals Reform Act* (§ 322, Pub. L. No. 102-381, 106 Stat. 1419 (1992)). This law specifically provided statutory protections for public participation in project-level resource management decisions. These public participation rights represent important advancements toward in the dominant aggregative pluralism, as well as emergent agonistic, dissent-based conservation models of democratic theory.

The ability for the public to participate directly in site-specific Forest Service project-level decisions was an informal process until 1965, when the Forest Service established an independent Board of Forest Appeals to hear citizen challenges to agency decisions (Coulombe 2004). As resource extraction intensified in national forests under

the elite traditional administrative model, especially after the post-WWII housing boom, commodity forestry came under increased scrutiny from the public and lawmakers. The pluralistic interest group model began to eclipse the elite administrative approach, and conservation groups came to “view access to administrative review of agency decisions as a very powerful tool for affecting management of the country’s national forests” (Jones & Taylor 1995:313). During the 1980’s, NFMA intensified the level of formal participation in forest-wide agency decisions, and the informal appeals process for individual project decisions also increased during this period (Beaver et al. 2000).

Unlike the regulations governing comment and administrative appeals process for forest-wide decisions (36 CFR 217), the notice, comment and appeals process for individual projects (36 CFR 215), was used by citizens and group with standing (*Sierra v Morton* (1972) 405 U.S. 727) to directly challenge site-specific management projects. “The administrative appeals process offered by the Forest Service is best characterized as an extension of public participation provided for under NEPA and NFMA. The process allows any individual to request an agency review” (GAO 1992:5).

Public participation in project-level decisions reinforced agency adherence to statutory environmental requirements, including surveying and monitoring rare species, management indicator species, and other protections at the project level implementing forest-wide plans (GAO 1989). The Forest Service “had to expend considerable time and staff resources incorporating the new environmental study requirements into their responses to timber sale appeals” (Harmon in GAO 1989:5). Public participation forced the Forest Service to address “the increasing number of complex environmental issues

raised in appeals, particularly with regards to documenting the environmental effects of planned actions” (Harmon in GAO 1989:5). Forest Service Chief Dale Robertson testified before the House Subcommittee in Forestry that public participation was reducing resource extraction through the use of appeals that were informed with sophisticated environmental analysis (GAO 1989). In short, the major environmental statutes required public participation in site-specific resource management projects, which provided some counterbalance to the longstanding overrepresentation of resource extraction interests in agency decision-making under the traditional elite democratic model.

These appeals often targeted conflicting statutory language (e.g. MUSYA and NFMA) when Forest Service planners implemented incompatible uses. The continuing tension between conservation/ecological forestry and resource/commercial forestry in the literature (Leopold, Hirt 1994, Hays) was most visible in project-level management. These project level decisions also demonstrated site-specific inconsistencies with agency proposals and statutory language in NFMA or NEPA (Hirt 1994).

The conservation literature includes significant discussion of the legal challenges the Forest Service faced when public participation was increased in individual project-level decisions. Despite the many criticisms of public participation (discussed in the previous section), the U.S. General Accounting Office (GAO), for example, published a frequently cited congressional briefing report rejecting claims that informal public participation was resulting in time consuming, costly, and frivolous appeals of project-level actions (GAO 1989). This argument has also been discredited in more recent

studies by the GAO (2003), which undermined the Bush Administration's claim (discussed in Chapter Six) that public comment and appeals creates "analysis paralysis" and a "process predicament" (Bosworth 2002). Like the more recent studies, the GAO demonstrated in 1989 that the source of agency problems was not public participation. "The excessive time the Forest Service took to process appeals did not appear to be due to the problems with the appeals system itself. Rather, the timeliness problems were related to difficulties the agency has experienced in resolving numerous complex environmental issues raised in appeals" (GAO 1989:22).

According to the GAO, the Forest Service was not able to prepare environmental analysis in time because it was confronting new ecological scientific knowledge about the effects of resource extraction on "water quality, wildlife habitat, or other aspects of the environment. The Forest Service has often had difficulty adequately documenting these effects" (GAO 1989:22). The Forest Service's inability to document environmental impacts of resource extraction created "the bulk of excess time...because it often had difficulty resolving appellant's concerns about how adequately it had documented the environmental effects of its challenged decisions" (GAO 1989:16). According to the GAO, "prescriptions for reforming the current system vary widely, but the problem is commonly attributed to Forest Service failure to involve the public effectively in forest planning" (GAO 1992:77). The GAO report demonstrated that the appeals process was beginning to work as Congress had intended: correcting the imbalance in overrepresentation of resource interests by opening agency decisions to public participation.

In 1992, the Office of Technology Assessment published a report documenting the positive effects the administrative appeals process (and pluralistic and participatory models generally) in improving the decision-making process. “The administrative appeals process has helped the Forest Service to: 1) clarify planning decisions; 2) set standards for environmental analyses required by NEPA; and 3) resolve various issues, such as use of management indicator species, protection of biological diversity, and adequacy of resource monitoring plans” (OTA: 1992:5). The report specifically identified the administrative appeals process as “an internal mechanism for clarifying the legal requirements and for testing the soundness of decisions and the appropriateness of current policies and procedures” (OTA: 1992:55). The report also argued that the process improved decision-making by “encouraging more responsibility and accountability on the part of deciding officers” (OTA 1992:97). Even the Forest Service acknowledged the significance of the administrative appeals process in a 1990 report where authors concluded, “the appeals process has made us better implementers of NEPA, which results in better decision-making. This, in turn, results in better land management” (USDA 1990:15).

Participatory democratic theory helps explain how the public notice, comment, and administrative appeals processes allowed individual citizens and interest groups to correct the longstanding dominance of resource extraction interests in Forest Service decision-making. Incidentally, these rights gained statutory protection after the Forest Service proposed eliminating them during a controversial 1992 rule making (57 Fed Reg. 59:10445). The initiative emerged in May 1988 following a review of the appeals

process, when the Forest Service proposed changes in regulations governing appeals, arguing reduced participation would “simplify the process to make it less costly to administer and easier to use and to give greater emphasis to discussion between the Forest Service and potential appellants to avoid appeals” (GAO 1989:26)

Although the Forest Service presented its proposal for reform as an opportunity to improve public participation, there is near universal agreement in the literature that the proposed regulations were aimed at removing more participatory forms of citizen involvement from national forest management decisions. According to the GAO, “The Forest Service changes do not directly address the difficulties that the Forest Service has experienced in resolving environmental issues raised by appeals—the factor that is principally responsible for these time overruns (GAO 1989:27). During congressional testimony concerning the Forest Service appeal, Harmon stated, “Although we believe that these changes may reduce the number and processing times of appeals, they do not directly address the problems the Forest Service has had with environmental analysis” (1989:9). The agency’s inability to conduct legally required environmental analysis—not citizen participation processes—prevented the Forest Service from expediting resource extraction projects. In the agencies own words, the Forest Service proposed to “remove impediments to economic growth arising from the current appeals process” (57 Fed. Reg. 59:10445).

Some scientists and professionals, like the Association of Forest Service for Environmental Ethics, reacted harshly to the proposal, arguing “the agency should be trying to figure out why so many community and environmental groups are appealing...

rather than trying to stop the appeals process altogether” (*Inner Voice* 1992:3 in Jones & Taylor 1996). Even the Forest Service admitted the proposal “provoked considerable general comment, largely critical, on the relationship between the Forest Service and the public... There were a substantial number of people who feel that by tightening the appeals rules, the Forest Service is trying to close a legitimate avenue of involvement... The ‘trust’ and ‘bad faith’ comments are legitimate, if troubling, expressions of public concern” (54 Fed. Reg. 13:3334-44). As the Forest Service soon discovered, the proposal to remove the public appeals process was “opposed adamantly by forces interested in maintaining citizen involvement in and review of agency decision-making” (Parent 1992:55). This opposition to the agency’ action included outraged members of Congress who passed the National Forest Decision-making and Appeals Reform Act (ARA) (discussed below), which today serves as the primary citizen tool for engaging and challenging agency decisions for site-specific, project level management in U.S. National Forests.

Although the Forest Service defended its proposal to reduce citizen involvement by arguing it would allow the agency to better follow federal environmental law and the duty to formally incorporate the public, the May 1988 initiative would have reverted management back to traditional elite administrative processes that restrict participation to pre-decisional, scoping processes. Senator Wyche Fowler Jr. (D-GA), reacted to the Forest Service proposal on the Senate floor, stating, “For some reason that I can only label as bizarre, the White House has taken the position that after more than 95 percent of our forests have been chopped down, clear cut, permanently destroyed, the

[informal] public appeals process in place since 1907 is blocking progress. An appeals process, which is simply a chance for a citizen's views, a taxpayer's views about his own forests that incidentally, affects less than 1 out of 7 timber sales of public forests, somehow the administration has decided this is just too much to bear, and they are recommending repealing it "(Fowler 1992:1 in *Earth Island v Ruthenbeck* 2005).

Rep. Bill Richardson (D-NM) spoke out against the Forest Service proposal on the House floor and entered a letter into the record from conservation scientists who rejected "the agency's recent proposal to eliminate appeals of timber sales, oil and gas leases, and other project level activities [as] a slap in the face of democratic values. It is all the more onerous when juxtaposed with the administration's aggressive support for legislation that would severely limit judicial review of forest managements" (*Earth Island v Ruthenbeck* 2006). The Forest Service and allies in Congress attempted to restrict opportunities for judicial review (court intervention) and reduce the ability of the public to establish standing, through the comment and administrative appeals process, to challenge agency decisions in the court room. According to Jones and Taylor (1995:313), "at least six time in the last decade, Congress has attached a 'rider' to the annual appropriation bill for the Forest Service that either prohibited or severely constrained legal challenges of agency actions, usually timber sales."

U.S. Forest Service Decision Making and Appeals Reform Act

In reaction to the Forest Service's attempt to restrict the administrative appeals process, Congress passed the statutory protections for notice, comment, and administrative appeals for Forest Service project-level decisions (ARA, 1992). The "U.S.

Forest Service Decision Making and Appeals Reform Act” (Pub. L. 102-381, Title III, Section 322, 106 Stat. 1419 (Oct. 5, 1992) (ARA), passed in October of 1992 as a rider on the Interior and Related Agencies Appropriation Act of Fiscal 1993. The legislation provided statutory language guaranteeing citizens the right to directly participate in site-specific management through a formal public notice, comment, and administrative appeals process. According to language in the conference report, “The process will allow for continued citizens' rights to participate in, and appeal decisions of, the Forest Service while providing for more timely consideration of such appeals” (138 Cong. Rec. S15843-01 at 15848, 1992 WL 250710 (Sept. 30, 1992).

The ARA represented a significant shift towards more participatory models of agency decision-making. Specifically, the ARA requires the Forest Service to “establish a notice and comment process for proposed actions and activities implementing land and resources management plans [and] modify the procedure for appeals of decisions concerning such projects” (§ 322). The ARA guarantees individual citizens and interest groups the right to “file an appeal” of “proposed actions of the Forest Service concerning projects and activities” (ARA §§ (a)(c). During passage of the bill, Senator Wyche Fowler (D-GA) argued the bill was “imperative if the American people are to reclaim some rights... I guess, to put it another way, a basic not only American right but democratic right with a small ‘d’, and that is to appeal a decision of a free Government of a free people if that decision adversely affects an individual citizen” (in *Earth Island v Ruthenbeck* 2005).

The ability to publicly comment on Forest Service environmental analysis and justifications for management set up a process by which individuals and interest groups enter the public record, establish standing, and fulfill the legal requirements to challenge a decision. In negotiations over the bill, Sen. Dennis DeConcini, a long-time supporter of the Forest Service, argued the agency needed more transparency and accountability, and a process for accepting, documenting, responding to public comments, “so that the agency cannot exclude people from appeals through its own failure to catalog their participation. (US House Committee on Agriculture 1993).

In short, the ARA was a rejection of the traditional elite model of agency decision-making, and heralded not only a more pluralistic approach, but, more specifically, opportunities for agonistic interaction directly between individuals and their government (see Chapter Two). These participatory approaches supported direct, dissent-based negotiations by individuals as opposed to interest group representation or consensus-driven collaborative deliberation.

This interpretation of the ARA has been upheld, for example, in recent federal court hearings, including *Wilderness Society v Rey* (180 F. Supp. 2d 1141 (D. Mont. 2002) (*TWS v Rey I*), a case brought in 2002 in which the Forest Service attempted to waive appeal rights for a large logging project in the Bitterroot National Forest. In that case, Judge Molloy, addressing the values of appeals, arguing “ultimately its force is to allow the democratic process of participation in governmental decisions the full breadth and scope to which citizens are entitled in a participatory democracy” (*TWS v Rey I* 2002:51). Additionally, as discussed below, researchers have shown that the comment and

administrative appeals process has been used more often by individual and ecological forestry groups (Teich et al. 2004), which is best understood as examples of pluralistic and agonistic models of democratic participation.

Today, the Forest Service is the only federal agency with statutory requirements for administrative appeals of project-level management (Coulombe 2004). The ARA is best explained as an attempt by Congress to correct the overrepresentation of private resource interests by strengthening the process for participation by independent, unaffiliated individuals in agency decision-making (Parent 1993; Anderson 2004). The ARA serves as the primary statutory guarantee for direct citizen participation in site-specific, project-level Forest Service actions.

Public Notice, Comment, & Administrative Appeal

Consistent with agonistic pluralism and dissent-based conservation, the ARA represented a radical departure from elite forms of administrative management by providing for individual citizens and public interest groups to directly challenge resource extraction projects for national forests. In addition to interest group representation or consensus-based negotiations, direct dissent-based participation presents an additional explanation of citizen participation in agency decision-making that was used in Chapter Seven and Eight to evaluate the prevailing process occurring under the Healthy Forest Initiative in North Carolina from 2003 through 2008.

Conservation management and forest planning in the United States, as envisioned by recent legislation, reflects this direct participation trend in democratic decision-making (Moote and McClaran 1997, Overdevest 2000; Abel & Stephan 2000;

Petersen MN et al. 2005, 2006, 2007; Petersen T et al. 2007; Vaughn 2003; Teich et al. 2004; Manring 2004, 2005; Germain 2005; Cox 2007). Like Mouffe (2000), these authors call for broadening the conventional pluralistic interest group participation process to include more democratic exchanges and individual participation directly through citizen comment and administrative appeal opportunities.

The literature describes the development of the appeals process that began as an informal procedure for permit holders (Coulombe 2004) and evolved into a legally protected process for individual, independent citizens unaffiliated with either conservation or resource groups. In his landmark study on Forest Service bureaucracy, Herbert Kaufman (1967) specially addressed the value of the administrative appeals process and the threat of appeal as a substantial influence over the forest ranger. The process built in democratic accountability through the ability to challenge individual decisions by bringing their challenge up the bureaucratic ladder where administrators were less likely to be influenced by special interests saturating the local level. Kaufman discovered in his study that every agency staffer he interviewed had been approached by higher-level officers as a “result of a complaint by some private person denied a claim of one kind or another (1967:153).

More recent scholarship has documented the same role of comments and administrative appeals. Proponents argue the process is consistent with the “fundamental tenet of good government to provide organizations and individuals affected by government actions with an opportunity to seek supervisory review of lower level officials’ decisions” (Kircher in US House Committee on Agriculture 1993).

Administrative appeals also provide “democratic accountability of the forest planning process...without having participated in lengthy place-based collaborative processes” (Manring 2005: 5873). In the *TWS v Rey* case, Federal District Judge Molloy (2002:1149) explained the value of the administrative appeal as “the one time when interested appellants can find out if relevant data was relied upon or ignored and it provides the agency the opportunity to flesh out conclusive statements or findings that lack the requisite close look or analysis at first blush” (1149).

The conservation literature discusses the appeals process as a direct, potentially radical democratic exchange between citizens with each other and with their government (Moote & McClaran 1997, Mouffe 1999). Such exchanges broaden participation beyond organized interest groups (public or private) to include individual citizen participants. Consistent with more participatory democratic theories of public participation, the administrative appeal process is intended to be used by independent citizens to challenge the dominance of representation by resource interests in national forest management.

According to Federal District Judge Donald Molloy, “The administrative appeal assures compliance with applicable standards, science, and sound analysis” (*TWS v Rey* / 2002:51). Because of the potential threat of a legal issue emerging after a decision has been signed, “appeals have helped compel the agencies to follow laws more closely” (1997:2). Teich et. al., argue that “appeals lead to more ecologically sensitive and socially acceptable project designs” (2004:15)., while Manring (2005:70) demonstrated that the process serves to “push the Forest Service toward the adoption of the

ecosystem-based policy of sustainable forest management that now better reflects public values and scientific opinion” (Manring 2005:70).

Teich’s NAU team, for example, determined that 33 percent of appeals were filed to challenge commodity forestry projects (including salvage logging, pre-commercial thinning, and traditional commercial logging) (2004). On the other hand, citizens and groups only used appeals to challenge legitimate fuels reduction and restoration projects 4.1 percent and 3.7 percent of the time, respectively. These findings directly contradict Forest Service and Bush Administration claims that environmental groups abuse the democratic process to delay or dominate the national forest decision-making process, thereby preventing management that aimed at preventing dangerous conditions in the forests that produced massive, high-profile wildfires (discussed in Chapter Six).

On the contrary, the NAU team discovered that the agency had no national appeals and litigation database. Instead, using published notices of appeals from on-line sources, the researchers created their own database of over 3,736 cases of public appeals of Forest Service decisions from January 1997 through September 2002. Teich et al. argued justifications for new Healthy Forest Initiative rule changes (discussed in Chapter Six) would “have the potential to affect a significant percentage of appeals. Although the perception has been that environmental groups are the primary appellants using project appeals to delay Forest Service projects, the data paint a more complex picture” (18).

Although critics assert that the appeals process has distorted the influence of policy making in favor of interest groups and citizens intent on creating agency gridlock (Steelman 1999; Bosworth 2002), other research (Knopp and Caldbeck 1990, Overdevest 2000) demonstrates the appeals process is most often directed at addressing concerns for conservation. Knopp and Caldbeck's comparative studies demonstrated that the public overwhelmingly favors ecological forestry, and is usually less divided than either the agencies or special interest groups (1990). According to Overdevest's findings (2000), the increase in comments and appeals in the Nantahala National Forest projects "leveled the field for diffuse environmental interests, [and] the leveling of the playing field appears to have the effect of well representing public interests" (Overdevest 2000:695).

Teich, Cortner and Vaughn's study of administrative appeals in the U.S. documented that the majority of appeals are filed by independent individuals who are unaffiliated with any group (2004). These researchers from the Ecological Restoration Institute at Northern Arizona University (NAU) showed unaffiliated citizens filed or joined in the most appeals (85% of the time), accounting for 1,152 appeals filed independently of any organization or business. Furthermore, this study documented a broad spectrum of participant challenges to Forest Service projects, from individuals, tribes, business interests, and environmental groups. "Although the perception has been that environmental groups are the primary appellants using project appeals to delay Forest Service projects... 85.5 percent were not filed in conjunction with any other organization" (Teich, Vaughn, & Cortner 2004:18).

Conservation scholars have put forth numerous practical and strategic reasons for the value of an appeals process and improvements to decisions for individual projects and forest-wide management. Such proponents believe citizen participation, through administrative appeals, may trigger an automatic stay or temporary halt of federal decisions until the agency directly responds to the appeals consistent with NEPA, NFMA, and ARA requirements. The ARA provides a stay on agency actions for 45-days after an appeal is filed to allow the agency to address issues, which “allows a party to get into court after approval” and prevents the agency from implementing the project “until court review can be had” (*Earth Island v Ruthenbeck* 2006:40). In addition to temporarily preventing resource management, the stay provision allows agency managers to revise their projects given issues brought forward through citizen appeals. “From the agency’s perspective the administrative appeal provides an opportunity to correct mistakes or to reconcile inconsistencies, thus narrowing issues that might be subject to judicial review... The appeal may avoid a legal challenge or narrow the issues that can be reviewed” (Molloy 2002:1149).

Conservation scholars also argue the administrative appeals process affords citizens the opportunity to file a substantive challenge to a federal action without the expense of court proceedings (*Earth Island v Ruthenbeck* 2006). The ARA was established to provide an informal means for citizens to address problems without having to hire a lawyer or go to the federal courts, both of which require substantial financial resources. “In the past, appeals provided a relatively efficient and low-cost way for the national environmental groups (as well as local and regional groups) to

exercise oversight over forest management decisions” (Manring 2005:72). This value of appeals in public participation is significant for “certain meritorious appeals, where the appellant could win at the administrative stage but not the judicial stage... because the appellant does not have the resources or cannot find a *pro bono* lawyer to take the case to court.” (*Earth Island v Ruthenbeck* 2006:40). The appeals process provides the public with an inexpensive and informal avenue to directly challenge agency decisions without the necessity of legal or interest group representation (57 Fed Reg. 59:10445).

Finally, the conservation literature discusses the administrative appeals as an opportunity for citizen participation and challenge without having to meet difficult legal standards for winning a temporary restraining order in the face of longstanding deference toward federal agencies (*Chevron U.S.A., Inc. v Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984)) given to the agency (*TWS v Rey I* 2002 : 1149). A member of the public could use the appeals process and succeed, while litigation could prove more difficult challenge, “given the deferential standards courts often employ when evaluating agency decisions” and measuring the “potential for irreparable harm” (*Earth Island v Ruthenbeck* 2005:41). These costly and difficult legal hurdles demonstrate the value of a free and open comment and appeals process for national forest decision-making that is inexpensive, accessible, and easy for most citizens.

Moote and McClaran’s influential paper, “Implications of Participatory Democracy for Public Land Planning” (1997) in the *Journal of Range Management* addressed the role of citizen appeals and comments, in which the authors compare the process with emergent collaborative approaches to national forest management.

According to Moote and McClaran, the comment and appeals process 1) encourages broad representation by the public; 2) assigns substantive weight to citizen involvement in decision-making, and 3) requires agencies to disclose information, and 4) provides for continuity of participation throughout the process (1997). Moote and McClaran argue the comment and administrative appeals process ensures “active dialogue that encourages the needs and concerns of each interested group and individual, including the agency, to be articulated and addressed in the planning process” (1997:476). This promotes public participation in issue identification, consideration of alternatives, and evaluation at the “beginning of the process and maintained throughout ... especially when key decisions are being made” (Moote & McClaran 1997:476). These findings suggest the current comment and appeals process, as well as other variations of direct democratic participation, are sufficient for radical citizen access and influence in agency decision-making.

Given the conflict-laden nature of public lands management, and the inherent tension in most Western liberal democracies generally, agonistic pluralism theory (discussed in Chapter Two) helps develop another understanding of the Forest Service decision-making process. This understanding identifies the value of dissent-based conservation strategies based on the comment and administrative appeal process. The inevitability of conflict requires participation processes that acknowledge the paradoxical nature of liberty and popular sovereignty and include accessible, free, and transparent processes. Without focusing on permanent resolutions or unrealistic consensus-based decision-making processes, dissent-based appeals processes are

appropriate for addressing the tensions of conservation and resource interests in contemporary agency decision-making.

Direct, inexpensive, and democratic participation, guaranteed through the citizen comment and appeal process in U.S. National Forest management, satisfies the requirements of agonistic pluralism and provides an alternative to elite administrative theory as well as the dominant aggregative pluralism model of interest representation. Agonistic pluralism, therefore, advances our understanding of agency decision-making and the effects of public participation as part of a process in which conflict is irreducible, the “political” is always in play, and dissent-based negotiations are protected and encouraged under the current statutory framework. As Mouffe explained, these new approaches “offer alternatives to the dominant aggregative perspective and its impoverished view of the democratic process” (Mouffe 2000:83). Agonistic pluralism provides a useful explanation of how public participation works, through direct comment and administrative appeals, by incorporating active citizen involvement to correct the overrepresentation of resource interests.

CONCLUSION

Many scholars identify the administrative appeals process as a significant factor behind improvements in the Forest Service decision-making process (Kessler, Salwasser, Cartwright, & Caplan, 1992, Jones & Mohai, 1995; Jones & Taylor, 1995; Baldwin, 1997), These public participation processes help secure legal accountability to force “the Forest Service to comply with environmental laws and regulations” (Manring 2005:62). In

short, the right to challenge agency decisions has been used by citizens to “ensure that USDA Forest Service managers follow the law and provide a legitimate forum for resolving controversy” (Anderson 2004:48).

Agonistic theories describe the national forest comment and appeals process as an opportunity for a radical democratic process challenging agency decisions and restoring balance to public lands management. “Supporters of the system point to the opportunities that appeals allow for additional and meaningful public participation in the decision-making process and the political accountability that the system provides, [which leads] to more ecologically sensitive and socially acceptable project designs” (Knopp & Caldbeck 1990: 15). There is substantial evidence the citizen comment and appeal process can improve national forest planning, prevent unecological management, or both (Vaughn 2003, Burley 2004; Teich et al. 2004; Manring 2004, 2005; Vaughn & Cortner 2005).

Direct dissent-based participation is not without its critics. As the next chapter highlights, criticism about individual citizen participation and the administrative appeals process was used by the Bush Administration to justify the “Healthy Forest Initiative.” Whether or not these criticisms of direct participation and appeals were valid, when a policy window created a favorable opportunity for regulation change, the Bush Administration established one of the most comprehensive sets of policy changes restrictions to citizen notice, comment, and administrative appeal (Vaughan and Cortner 2005).

CHAPTER SIX: PROCESS PREDICAMENTS, THE HEALTHY FOREST INITIATIVE, AND THE COURTS

“The administrative appeal assures compliance with applicable standards, science, and sound analysis . . . Ultimately its force is to allow the democratic process of participation in governmental decisions the full breadth and scope to which citizens are entitled in a participatory democracy”

Federal District Judge Donald Molloy
TWS v Rey 2002:51

INTRODUCTION

The public participation process in national forest management, through comments and administrative appeals, is almost as old as the agency itself (Coulombe 2004). As explained in Chapter Five, many scholars believe the processes provides an important opportunity for citizens to influence public lands management (Vaughn 2003; Teich et al 2004; Anderson 2004; Manring 2005). There are also opponents of public participation in general (see Chapters Two and Five), and of administrative appeals in particular. This chapter, therefore, begins with a description of the Bush Administration’s critique of administrative appeals used to justify changes made under the Healthy Forest Initiative.

The chapter then summarizes the major Healthy Forest Initiative policy changes issued by the Bush Administration that effected national forest management. This

includes a discussion of the policies for categorical exclusions, extraordinary circumstances, and new commercial logging contract systems called “goods for services.” These HFI policies are analyzed in Chapter Eight using projects authorized by the Forest Service in national forests in North Carolina from 2003 through 2008.

Additionally, this chapter includes a brief summary of the legal challenges that invalidated portions of the Healthy Forest Initiative, including restrictions on public appeal (36 CFR. § 215.12(f)), requirements for “substantive comment” (36 CFR § 215.13(a)), and exemptions for 5,500-acre burn and logging projects for “hazardous fuels reduction projects” (CE 10, § 31.2). Most important for this study, the Healthy Forest Initiative eliminated the right to appeal Categorical Exclusion (CE) projects in 2003 (36 CFR. § 215.12(f)), only to be reinstated from July 2005 to March 2009 as a result of federal district and appeals court rulings. On March 3, 2009, the U.S. Supreme Court sided with the Bush Administration on a 5-4 decision (No. 07-463, 490 F. 3d 687 2009), which threw out the challenge against the HFI on a standing technicality. This fluctuating legal status of public participation sets up a natural experiment for the Healthy Forest Initiative policies discussed in this chapter, which describe the decision-making and forest management characteristics analyzed in Chapters Seven and Eight.

Process Predicaments

There are many critics of the role of independent citizen involvement in Forest Service decision-making. In addition to democratic elite opposition to direct public participation, recent criticism relates to the administrative appeal process for allowing citizens to challenge district ranger decisions by going directly to supervisors (Kaufman

1960). This section, therefore, describes arguments against the administrative appeals process in the policy and resource management literature.

The literature includes much debate relating to the use of administrative appeals of agency decision-making in preventing resource management (Bosworth 2002; Vaughn 2003, Teich et al. 2004; Manring 2004, 2005; Vaughn & Cortner 2005). These criticisms trace back to the 1988 Subcommittee on Forestry hearings (see Chapter Five), in which “several senators expressed frustration over the continuing controversies... [concluding] that the planning process had ‘broken down’” (57 Fed. Reg. 59:10445; GAO 1992:77). At the hearing, Chief Robertson criticized the appeals process for being “a significant generator of paperwork and a time-consuming, procedurally onerous, confrontational, and costly effort, diverting resources that otherwise might be directed to substantive on-the-ground resources management needs and accomplishments” (57 Fed. Reg. 59:10445).

Under the Bush Administration, these arguments were advanced by the Forest Service, including Chief Bosworth’s claim of “a correlation between the rising number of appeals in recent years and falling volumes of timber harvest” (2002:36). Many claims are uncritically accepted by agency officials, members of Congress, and commercial forestry interests (Vaughn & Cortner 2005; Manring 2005). Public participation is criticized for generating, according to Senator Ben Nighthorse Campbell (R-CO), “a hailstorm of lawsuits and appeals from environmentalists who purport to protect our forests” (in Vaughn 2003:19). The resource literature includes the claim that conventional public participation processes represent a “costly, confrontational,

procedurally onerous, and time-consuming endeavor that diverts resources from on-the-ground management” (Manring 2005:58). Even President Bush called for new reforms that, he asserted, were needed to “expedite the environmental review process so we can move forward more quickly on projects that restore forests to good health. We don't want our intentions bogged down by regulations. We want to get moving” (2003).

The most common criticism of the current process relates to the alleged time delays the agency encounters when processing administrative appeals. “Critics argue that appeals are costly and procedurally onerous, co-opt resources (time, personnel, financial) that could be used more productively elsewhere, and act as deterrents to effective pre-decisional Forest Service involvement and stakeholder collaboration. Critics also contend that most appeals are frivolous and are being used as tools of obstruction rather than to solicit beneficial outcomes” (Teich et al. 2004:15).

In 2002, the Forest Service Chief oft-cited report, *The Process Predicament* (Bosworth 2002), which claimed environmental groups were using the process to prevent resource management projects, as well as ecologically justifiable hazardous fuel-reduction projects, required to protect communities and homes from large wildfires. Bosworth called for legislation to “advance common sense forest health efforts that prevent damage caused by catastrophic wildfires and move past ‘process gridlock to improve agency land management efficiency” (Bosworth 2002:5). The Chief specifically called for “repealing the Appeals Reform Act [and] procedural requirements

that are not required of any other Federal agency... that limit our ability to work collaboratively with the Forest Service” (Bosworth 2002:7).

Chief Bosworth argued against “analysis paralysis” (2002:21), in which agency officials are forced to “bulletproof” environmental assessments before management can be proposed (Manring 2005:58; Teich et al. 2004). The Chief argued the appeals process creates management gridlock, a “process predicament” (Bosworth 2002) in which paralysis prevents the agency from approving resource extraction projects as it did under the traditional elite administrative model. “The vast majority of timber sales proceed to completion unchallenged. However, some groups have successfully used appeals to obstruct timber sales, and Forest Service employees therefore treat almost every ground-disturbing project as a potential target” (Bosworth 2002:36).

Critics of the appeals process believe delay and management gridlock are an “intended outcome” of citizen appeals aimed at keeping “resources from going to on-the-ground management activities” (Steelman 2006). Some scholars believe the process has been used to prevent resource extraction, “that many appeals are ‘frivolous’ and brought for the purpose of frustrating rather than improving land management actions, and that appeals greatly increase the costs of management” (Baldwin 1997:1). Agency ‘paralysis’ is the fault of more participatory models of agency decision-making that, according to some authors, are exploited “by a vocal minority of environmental extremists who oppose any national forest management. These critics view appeals as little monkey wrenches thrown at the Forest Service to halt all logging” (Little 2003:48). The American Forest and Paper Association’s (AF&PA) spokesperson, Michael Klein,

argued the appeals process is abused by groups who “don’t think a tree should be cut down—ever. If they have to go to court, chain themselves to trees, they’ll do it” (Little 2003:48).

Another common criticism of the contemporary appeals process is based on the claim that public participation wastes agency funding. Charles Burley (2004:50), for example, argued in the *Journal of Forestry* that the appeals process has “become a huge waste of time and money, often leading to projects not being completed, and consequently, resource objectives not being accomplished on the ground.” The AFPA even made the claim that that public participation rights should be waived to save money that could instead be used to defend the country from terrorism (2005). the AFPA filed an *amicus curi* brief in *Earth Island Institute v Ruthenbeck* (see discussion below), in which the group argued “the Forest Service can reduce some of its agency appeal costs and conduct fuels reduction projects more cost-efficiently. *In the post 9/11/01 world* where the Forest Service has a reduced budget, this policy [of eliminating appeals] is reasonable” (AFPA 2006:25, emphasis added).

One criticism that merits particular attention is the assertion that forty percent of the Forest Service budget is lost when the public is included in agency decision-making (through comment, appeals, and litigation). The number was first reported in a 1999 report by the National Academy of Forest Service Administration (NAPA) report, which based its estimated on the educated guesses of Forest Service personnel. The estimate related to the agency’s entire planning process, not specifically appeals and litigation, and instead includes all spending for environmental planning mandated by

NEPA, NFMA, and the ARA. “Guesstimates of Forest Service personnel were thus presented in reports by other entities, which were, in turn, then cited by the agency in its own reports and then repeated by other officials” (Vaughn 2003:12). This allowed for the figure to take on a life of its own, and it eventually emerged in policy debates as fact.

During debate for the Healthy Forest Restoration Act, Arizona Rep. Jeff Flake authored a guest column in the *Arizona Republic* entitled, “Costly Lawsuits Provides Kindling for Forest Blazes,” where the congressman stated that “40 percent of our Forest Service's budget is swallowed up just fighting lawsuits filed by ‘environmentalists.’ The bottom line is this: If we want to save what remains of our forests in Arizona, we've got to get a handle on the frivolous lawsuits that prevent us from doing so.” The next day, Arizona Senator Jon Kyl published an opinion piece stating, “Standing in the way of these [fuel reduction] efforts are radical environmentalists who file litigation and seek to otherwise obstruct forest treatment. As of last month, there were 5,000 legal challenges pending against the U.S. Forest Service, which devotes nearly 40 percent of its resources to defending against lawsuits and complying with environmental regulations” (Kyl in Vaughn 2003).

Chief Bosworth (2002:5) also made this claim, stating the “Forest Service officials have estimated that planning and assessment consume 40 percent of total direct work at the national forest level. That would represent an expenditure of more than \$250 million per year.” Although this claim has been discredited, it remains an unfounded allegation passed along as fact by mainstream media outlets and elected officials

(Vaughn 2003). Although these critics believe public participation and environmental analysis prevent “on-the-ground” resource extraction, others (see Chapter Five) argue the ARA and other environmental laws were specifically established to balance resource extraction with ecological forest management objectives (Anderson 2004; Jones & Taylor 1995).

Another criticism claims public participation blocks legitimate fuel-reduction projects aimed at protecting communities from large, catastrophic wildfires (Bosworth 2002). According to the Bush in a HFI-related radio address, problems with the public participation process justified the HFI’s changes to “reduce bureaucracy and speed up thinning on Forest Service lands” (Bush 2002). This specific argument for removing appeals was allegedly supported by a Forest Service report entitled, “Factors Affecting Timely Mechanical Treatment Programs” (USDA 2002). The report alleged that forty-eight percent of all decisions made in FY 2001 and 2002 for fuel reduction were appealed, and that an additional 21 decisions (six percent) were litigated (USDA 2002). In this report, the Forest Service claimed environmentalists were obstructing forest thinning projects and endangering rural communities threatened by wildfire.

In September 2002, however, the Forest Service released documents in response to a Freedom of Information Act (FOIA) request revealing the methodology for the report, in which Frederick Norbury, Director of Ecosystem Management Coordination admitted "the timeframe for gathering the information used to develop the report was limited to hours" (2002). “The Forest Service report supposedly provided statistical

information that had been lacking in earlier attempts at reform, despite substantive questions about the study's methodology” (Vaughn & Cortner 2004:772).

According to Morton and McCarthy (2002), a closer look of the Forest Service report showed significant problems with the reliability of the data, sampling bias, and data errors. “The Forest Service Report does not use a consistent definition to identify mechanical treatments to reduce hazardous fuels. The majority of appealed projects listed in the Forest Service Report (eighty-eight percent) include commercial timber sales” (Morton & McCarthy 2002:2). In other words, these findings show the process is working as Congress intended by giving the public an avenue through which to challenge controversial and often unlawful ecologically destructive projects.

As Jacqueline Vaughn of Arizona State University explains, “Through the use of methodologically questionable and uncorroborated data, rhetoric, and focusing events, government policy makers framed the debate by shifting the blame for wildfires from previous Forest Service policies and management to environmental organizations, demonized as overzealous obstructionists to common sense wildfire policy” (Vaughn 2003:1). These efforts were part of a campaign to cast blame for the large wildfires on environmental groups who allegedly abused the public participation process and prevented the agency from conducting treatments necessary to protect threatened communities from wildfire.

Research from the GAO, however, thoroughly debunks this claim. The GAO reported in August 2001 that 1% (20 projects) of 1,671 fuel reduction projects proposed by the Forest Service during FY 2000 and 2001 were appealed, and none were litigated

(GAO-01-114R). In another study, the GAO (2003a, 2003b) determined that over 95% (777 out of 818) of legitimate fuel reduction projects between FY 2001 and 2002 were ready for implementation within the standard 90-day review period, while 97% went forward without litigation. Another GAO report in 2003 found that opposition was not a leading factor in slowing fuel reduction projects, and “while the issue of formal Forest Service resistance, such as appeals and litigation, has recently been contentious, only a few local land unit officials we visited indicated that this type of resistance had delayed particular fuels reduction treatments” (GAO-03-805).

One GAO researcher, speaking to the press about the discrepancy between agency claims and their findings, asserted that “the Forest Service is a case study in spin. I think the Bush Administration has done a wonderful job of turning those who we think of as saviors of the environment into those we now think of as threats to the environment” (Cortner in Thacker 2004). As Teich, Vaughn and Cortner argue, “policymakers and Forest Service officials used the issue of delays repeatedly as justification for changes in the appeals process” (2004:18). These arguments paved the way for the Healthy Forest Initiative, under which the Forest Service was authorized to eliminate the ARA’s citizen notice, comment, and appeal process—the first time in the agency’s 100-year long history (Hays 2007).

The next section outlines the specific regulatory changes established under the Healthy Forest Initiative that eliminated the administrative appeals process, as well as environmental review and documentation requirements, for entire classes of management. As Teich et al. discovered in their study, “significant interests (and not all

of them environmental) are likely to be affected by changes in the administrative appeals process. Limiting input from individuals, environmental groups, tribes, companies and other government agencies could have unanticipated consequences” (2004:18).

HEALTHY FOREST INITIATIVE

The Healthy Forest Initiative was a wide-ranging regulatory proposal encompassing several changes to established national forest management guidelines, restricted citizen involvement, and instituted new incentives for logging called “Stewardship Contracts.” The current study is concerned primarily with three sets of HFI rule changes that addressed “Extraordinary Circumstances” for Forest Service management, eliminated public participation rights for notice, comment, and administrative appeal (Appeals Rule), and created five new categories of management the agency can perform without a full environmental review and documentation it in the Forest Service record (Categorical Exclusions). After this chapter outlines the relevant policy changes in the HFI, Chapter Seven and Eight include detailed analysis of the effects these rule changes had on public participation and conservation for U.S. National Forests in North Carolina.

Beginning July 13, 2002, the Biscuit Fire burned nearly 500,000 acres in the Oregon’s Siskiyou and Six Rivers National Forests, capturing international attention as the largest wildfire in state history. With the forest still smoldering, President Bush arrived in Oregon August 22, 2002 to shake hands with firefighters and announce the

“Healthy Forests: An Initiative for Wildfire Prevention and Stronger Communities,” commonly known as the “Healthy Forest Initiative” (White House 2002). According to the Healthy Forest Initiative (HFI), “procedural delays are stalling critical forest and rangeland management projects,” and “the appeals process is complex, time consuming and burdensome” (White House 2002:1). The HFI called for improving “regulatory processes to ensure more timely decisions, greater efficiency, and better results in reducing the risk of catastrophic wildfires by restoring forest health.” (68 Fed. Reg. 33,814 (June 5, 2003). Like the 1990 Forest Service proposal to eliminate administrative appeals (OTA 1993) (see Chapter Five), the HFI’s sweeping changes reduced public participation and waived requirements to conduct and document an environmental assessment for commercial logging, prescribed burns, and other management exempted under new “categorical exclusion” (CE) rules (discussed below).

In an August 24th 2002 radio address, President George W Bush claimed the HFI would bring "common sense" to national forest management and “discourage the endless delays that prevent good forest policy from going forward.... [and] expedite procedures for forest thinning and restoration projects [to] ensure the sustainable forest management and appropriate timber production” (Bush 2002:1). President Bush believed “excessive red tape and endless litigation [and] a hands-off approach to forest management” were responsible for the million acre wildfire and deaths of 28 firefighters and 22 civilians (USDA 2003). The wildfires provided a policy window (Kingdon 1984) through which the Bush administration proposed new legislative and regulatory changes (Vaughn and Cortner 2005) to “reduce bureaucracy and speed up

thinning on Forest Service land” (Bush 2002). “The Healthy Forests Initiative is ultimately a statement of policies and goals, not a final agency action in itself. To implement the Healthy Forests Initiative it was, therefore, necessary to promulgate or change numerous regulations, policies, and procedures for the agencies involved (Huber 2004:803).

The same week President Bush announced the HFI, U.S. Agriculture Secretary Ann Veneman and U.S. Interior Secretary Gale Norton unveiled a four-part regulatory package calling for changes to "streamline unnecessary red tape that prevents timely and effective implementation of wildfire prevention and forest health projects on Forest Service lands. Delays of these projects can have devastating environmental and social consequences when catastrophic fires strike" (USDA 2002). Although there was a legislative component of the HFI, the *Healthy Forest Restoration Act* of 2003, (see below), the regulatory changes of the HFI went forward without Congressional oversight or approval. Instead of waiting on a Congressional legislative “process that was time-consuming, partisan, and highly visible, the administration sought to use the administrative rulemaking process to affect change” (Vaughn and Cortner 2004:776).

The Healthy Forest Initiative’s regulatory rule changes were, according to the Bush Administration, created to address “analysis paralysis” (Bosworth 2002) by eliminating public participation and environmental analysis from the majority of forest service management proposals. “The Bush administration acted swiftly and almost simultaneously to use the regulatory process as a way of changing both the administrative appeals process and the overall direction of forest policymaking”

(Vaughn & Cortner 2005:775). Under the literal smoke, the HFI was changed conventional processes by eliminating existing public participation requirements or replacing them altogether with new so-called deliberative planning and collaborative management models. “Along with the help of a lot of smoke and a few mirrors—the Forest Service . . . made NEPA virtually disappear from its entire decision-making process” (Vaughan 2006:44).

Following the HFI, the Bush Administration worked with Congress on the “*Healthy Forests Restoration Act of 2003*” (HFRA), which passed the U.S. House May 20, 2003 (HR 1904), the U.S. Senate on October 30, 2003, and was signed by the President on December 3, 2003. The HFRA produced new classes for “healthy forest” management that are similar, although separate, from the HFI regulation changes. The Forest Service did not implement any HFRA projects identified in this study, while there were over 67 HFI projects from 2003 through 2008 (see Chapter Eight).

The HFRA is the only significant national forest legislation passed since the ARA of 1992, but it is too early to predict whether it will meet the declared goal to protect communities from wildfire and promote forest health. Some of the first research on the HFRA has documented shortcomings of the bill’s implementation and its difficulty in supporting the public interest (Steelman & 2009). Although the HFRA directs the agency to focus on wildfire issues, the HFI applies to all Forest Service management, including non-wildfire related commodity forestry.

Healthy Forest Initiative Policy Changes

The day after President George W. Bush's speech in Oregon's Biscuit Fire, his administration began introducing specific policy proposals for Forest Service management (White House 2002). These include the most substantial changes to established public participation (Wondolleck 2000) and ecological management (Hays 2007) since the creation of more democratic processes and environmental legislation during the "participation explosion" (Almond & Verba 1963) of the 1970's "environmental era" (Andrews 1999).

The HFI encompassed numerous policy changes for Forest Service management, including removing restrictions on management in endangered and rare species habitat, reducing citizen involvement, instituting new commercial incentives for logging, and exempting whole classes of vegetation management from environmental analysis and disclosure. The current research is concerned primarily with four HFI policy changes: 1) the "Appeals Rule" which eliminated public participation rights for notice, comment, and administrative appeal; 2) the creation of five new classes of management called "Categorical Exclusions" that released the agency from the NEPA process requiring a full environmental review and documentation in the public record; 3) removing the role of "Extraordinary Circumstances" in preventing the Forest Service authorizing projects under expedited "Categorical Exclusion" processes; and 4) creating a new "Goods for Services" contracting system that allowed . Table 4 summarizes the HFI policy changes that provide groundwork for an analysis of their influence on public participation on

national forest decision-making (discussed in Chapter Seven) and on site-specific management (Chapter Eight) in North Carolina.

Table 4. Healthy Forest Initiative Process And Policy Characteristics Identified and Analyzed. *		
Healthy Forest Initiative Rule	Citation	Result
Appeals Rule	36 CFR § 215.4(a); § 215.12(f)	Eliminated notice, comment, and administrative appeals for projects that were authorized through the categorical exclusion process.
Categorical Exclusions	68 Fed. Reg. 33,814; 44,598	Expanded the type of management that could be authorized without an environmental assessment.
Extraordinary Circumstances	67 Fed. Reg. 54,622	Eliminated restrictions preventing categorical exclusion projects when extraordinary circumstances were present.
Goods For Service	68 Fed. Reg. 70,758	Established a new contract system with commercial forestry incentives for authorized categorical exclusions projects.
Substantive Comments	36 CFR § 215.13(a); § 215.2	Only accepting substantive comments defined as “specific to the proposed action, have a direct relationship to the proposed action and include supporting reasons.”
Automatic Stay	36 CFR § 215.18(b)(1)	Reducing the “automatic stay” following appeals requiring the agency to produce a decision within 40 days.
Interested Party	36 CFR § 215.13(b)	Eliminated “interested party” status for members of the public interested in joining an appeal.
Waived Appeals	36 CFR § 215.20(b)	Waiving appeal rights for projects signed by the Secretary or Undersecretary of Agriculture.
Delegated Authority	36 CFR § 215.10(a)	Delegating authority to district rangers to declare an emergency by waiving the automatic stay provision guaranteed by the ARA.
Economic Emergencies	36 CFR § 215.10	Defining new “economic emergencies” as one of the categories that allows the agency to waive the automatic stay provision guaranteed by the ARA.
* Only the top five HFI policies were explored in this study.		

The next section provides a summary of the specific HFI rule changes that are addressed in Chapters Seven and Eight.

Appeals Rule

Of specific interest for this dissertation, the Bush Administration published new regulations in the Federal Register on June 4, 2003, eliminating public notice, comment (36 C.F.R. § 215.4(a)) and administrative appeal (36 C.F.R. § 215.12(f)) opportunities for all projects classified as Categorical Exclusions (discussed below). Although the Forest Service was still subject to NEPA requirements to open projects up to scoping (discussed in Chapter Five), the agency was released by this new policy from opening project decisions to challenge by administrative appeals.

This new Healthy Forest Initiative participation framework, commonly known as the “Appeals Rule,” removed guarantees established under the National Forest Service Decision-making and Appeals Reform Act (ARA) that provided interested citizens the right of official notice, comment, (36 C.F.R. § 215.4(a)) and administrative appeals (36 CFR. § 215.12(f)) challenging broad classes of Forest Service management. In addition, the Bush Administration replaced the existing ARA citizen participation process with new requirements for collaborative decision-making for “Hazardous Fuel” management (CE10) and “Goods for Service” contracting (discussed below).

Although the public could still participate during NEPA’s required scoping phase of the decision-making process, the Forest Service only provides limited information at this stage about which the public is required to address. Furthermore, the Bush Administration established a requirement that the public provide “substantive

comments” about proposed projects in order to establish standing (36 CFR § 215.13(a)). The agency defined these comments as those that “are specific to the proposed action, have a direct relationship to the proposed action and include supporting reasons for the Responsible Official to consider” (36 C.F.R. § 215.2)

The Appeals Rule was later invalidated in federal district and appeals courts (*Earth Island Institute v Ruthenbeck* 2005; *Wilderness Society v Rey II* 2006), and then upheld by the Supreme Court on a standing technicality (*Summers v Earth Island* 2009). A new lawsuit, filed in U.S. District Court in Los Angeles on December 19, 2009, challenges the same HFI regulations (see discussion below).

Categorical Exclusions

The Appeals Rule applied to all Forest Service “Categorical Exclusion” (CE) projects, which are forms of management exempted from NEPA’s requirement to conduct an Environmental Assessment for projects that theoretically have an “insignificant effect on the environment” (40 C.F.R. 1501.4(a)(2)) and contain no extraordinary circumstance. Of the statutory law governing the Forest Service, NEPA regulations specifically established three processes of review for site-specific, project-level management. These reviews, established by the Council of Environmental Quality (the federal body responsible for implementing NEPA), include 1) an EIS for all projects that may significantly affect the quality of the environment; 2) an EA that documents a “Finding of No Significant Impact” (FONSI) or a notice to prepare an EIS; and, 3) in limited circumstances, undocumented review where the action fits into a previously defined categorical exclusion (CE). If the Forest Service determines that specific classes

of management have no significant effect, individually or cumulatively, on the quality of the environment, regulations implementing NEPA allow the agency to establish categories of management that are excluded from both the EIS and EA requirements (40 C.F.R. §§ 1507.3(b)(2)(ii); 1508.4.)

The CE process was originally established to facilitate routine activities, such as painting a government building, building campgrounds, or mowing lawns. Instead, as the GAO discovered (2007), the Forest Service used CE's for the majority of its management from 2003 to 2006, or "about 72 percent of all Forest Service vegetation management projects," which accounted for over 6.2 million acres of forests (2007).

In addition to eliminating the notice, comment, and administrative appeal process for existing CE projects, the Bush Administration also created five new CE's or classes of management activities exempted from NEPA requirements to conduct an environmental assessment or environmental impact statement (68 Fed. Reg. 33814 & 68 Fed. Reg. 44,598). "The 2003 Rule provides that categories of actions that lack significant individual or cumulative environmental impacts (and therefore are categorically excluded from documentation in an EA or EIS)" (*Earth Island v Ruthenbeck* 2005:33). The new HFI CE's exempted "hazardous-fuel" reduction, post-fire logging, "small" logging projects, salvage logging, and "sanitation" logging from full environmental analysis, which combined with the citizen participation restrictions to release the Forest Service from the duty to publicly document environmental analysis for public notice, comment, and administrative appeal. Moreover, these regulations

established CE's that applied to commodity forestry generally, not just wildfire related "healthy forest" activities.

Table 5. Five New Categorical Exclusions Created by the Healthy Forest Initiative.		
CE #	Name of HFI CE	Management Characteristics
10	Hazardous Fuels Reduction	4,500 acres of prescribed burns and 1,000 acres of commercial logging;
11	Post-Fire Rehabilitation	4,200 acres of tree planting, fence replacement, habitat restoration, heritage site restoration, repair of roads and trails, and repair of damage to minor facilities such as campgrounds.
12	Limited Commercial Logging	70-acres of "small scale" commercial logging; Less than one-half mile of road construction
13	Weather-Related Salvage Logging	250 acres of commercial logging in areas with recent weather-related disturbance; less than one-half mile of road construction
14	Insect-Related "Sanitation" Salvage Logging	250 acres of commercial logging for "sanitation harvests" in areas with recent or pending insect outbreaks; less than one-half mile of road construction

Published June 5, 2003 (68 Fed. Reg. 33814), the first CE rule applied to "Hazardous fuels reduction activities" (CE 10, § 31.2) for up to 4,500 acre prescribed burns, and 1,000-acre "treatments," including logging and mowing to "protect lives, communities, and ecosystems from the risk of high-intensity wildland fire." Although, these projects are supposed to be concentrated around urban areas to protect communities against wildfires, the projects can be in Inventoried Roadless Areas, native forests, and wilderness study areas provided that they will not "impair [their] suitability . . . for preservation as wilderness" (FSH 1909.15 ch. 30 (July 6, 2004) [ch. 31.2, pt. 10).

This CE was also the only CE proposed under the HFI that required collaborative decision-making, and “will only apply to areas identified through a collaborative framework.” The hazardous-fuels CE expedited management projects while substituting the conventional public appeals processes with new forms of collaborative decision-making (CE 10, § 31.2). This CE required that proposals “shall be identified through a collaborative framework ” consistent with the agency’s guidelines outlined in the *Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment – Ten-Year Comprehensive Strategy: Implementation Plan* (USDA & USDI 2002).

“Collaborative framework” is described in the *Implementation Plan* as the process of bringing together agency professionals, local participants, and state, federal and tribal governments to prioritize management and implementation (USDA & USDI 2002). This approach emphasizes “local level collaboration” with stakeholders who have expressed some expertise or interests in the forest (2002:9). The emergence of collaborative management, cooperative conservation, and other deliberative forms of decision-making reflects calls in the literature that reject the elite and interest group processes in favor of more stakeholder-driven approaches. As described below, this CE was invalidated by federal courts in 2007 (*Sierra v Bosworth* 2006).

Another CE published June 5, 2003 was the “Post-fire Rehabilitation Activities” (CE 11) (68 Fed. Reg. 33814), which calls for restoring recently burned areas with tree plantations, road building, and “habitat restoration.” CE 11 can be as large as 4,200 acres in size and is restricted to post-fire systems outside wilderness areas or roadless

areas (Neznek 2004:8). These CE's are exempted from NEPA's requirements for the agency to gather environmental analysis because, theoretically, 4,200 acres of plantation forestry will not have significant effects on the environment.

The final three CE's proposed under the were published on July 29, 2003 for CE 12, CE 13, and CE 14, (68 Fed. Reg.44598). The CE for "Limited" commercial logging (CE12) exempts "small-scale" commercial logging projects in order to "allow low-impact silviculture treatments through timber harvest" (Neznek 2004:8). This CE allows for 70-acres of commercial logging activities such as including "thinning in overly dense stands" and one-half mile of road building.

CE 13 was proposed for "Salvage logging" of up to 250 acre "treatments" and road construction up to one-half mile long in most areas in the national forests, except for wilderness, national recreation areas, or Inventoried Roadless Areas. 'Salvage' logging is a commodity forestry term for commercial logging in post-fire systems with "damaged" trees that maintain economic value. Salvage logging is substantially criticized in the ecological literature (Hanson et al. 2009) for intensifying forest health problems by reducing the natural resiliency of the forest to respond to wildfires and other disturbing events.

Finally, the HFI CE for "sanitation harvests" (CE 14) allows for up to 250 acres of commercial logging and one-half miles of road building to "control the spread of insects and disease" (Neznek 2004:8). Although the Forest Service is prohibited from proposing this CE in designated wilderness and Inventoried Roadless Areas, these procedures are not limited to the "wildland-urban interface" (Neznek 2004:8), where fire-prevention

research has demonstrated is 90 percent more effective in protecting homes and communities from wildfires (Cohen 1999).

Extraordinary Circumstances

Another important policy change under the HFI came the day after President George W Bush's Biscuit wildfire speech, when the administration published a notice called "Clarification of Extraordinary Circumstances for Categories of Actions Excluded from Documentation in an Environmental Assessment or an Environmental Impact Statement, 67 Fed. Reg. 54,622, 54,622 (Aug. 23, 2002). Previously, regulations under the National Environmental Policy Act (NEPA) required the Forest Service to conduct an Environmental Assessment (EA) for any management except for "routine actions that have no extraordinary circumstances" (57 *Fed. Reg.* 43180 (September 18, 1992). Unlike projects that required an EA, these "routine actions" could be authorized through the "categorical exclusion" process providing that "the activity will have little potential for soil movement, loss of soil productivity, water and air degradation or impact on sensitive resource values and is consistent with Forest land and resource management plans" (56 *Fed. Reg.* 19718 (April 29, 1991).

Extraordinary circumstances include a list of environmental and cultural issues that, if present in the proposed activity area, originally required the Forest Service to conduct a full EA for any national forest management. Normally, for example, the Forest Service could not use a CE if there are steep slopes, endangered or threatened species, wilderness or wilderness study areas, or if the project occurs in an "Inventories Roadless Area"(FSH 1909.15 §30.3(2)). The Council for Environmental Quality, a federal

body responsible for implementing NEPA, requires that the Forest Service “shall provide for extraordinary circumstances in which a normally excluded action may have a significant environmental effect” (40 C.F.R. § 1508.4). The agency is required to maintain a project file that explains why no extraordinary circumstances exist in the proposed management area (FSH § 1909.15, Ch. 30 § 31.2(10) (1992)).

When introducing the original regulations, the Forest Service stated, “It is the intent of the agency that only routine actions that *have no extraordinary circumstances* should be within the categories for exclusion” (57 Fed. Reg. 43184, emphasis added). Federal courts have also upheld the requirement to conduct an EA when extraordinary circumstances are present, including *Washington Trails Association v. Forest Service* 935 F. Supp. 1117 (W.D. Wash. 1996), *Jones v Gordon* 792 F. 2d 821 (9th Cir. 1986), *California v. Cal. Coastal Commission*, 150 F.Supp. 2d 1046 (N.D. Cal. 2001), *Bensman v. Forest Service*, 984 F.Supp. 1242 (W.D. Mo. 1997). In *Rhodes v. Johnson*, for example, the judge determined “It is not enough that the Forest Service has conducted an internal review to determine whether the extraordinary circumstance will cause the proposed action to have a significant impact on the environment. An environmental assessment is the process required to make that determination” (153 F.3d 785, 790 (C.A.7(Ill.)1998).

The new HFI directive revised the Forest Service Handbook (1909.15 Chapter 30) by changing the extraordinary circumstances’ automatic mechanism triggering an EA and replaced it with discretionary language in which the agency was only required to “consider” “resource conditions” to determine whether extraordinary circumstances

were present (Huber 2005). As the Forest Service stated, “The mere presence of one or more of these resource conditions does not preclude use of a categorical exclusion,” and, instead, the agency argued that “the degree of the potential effect of a proposed action on these resource conditions determines whether extraordinary circumstances exist” (FSH 1909.15, ch. 30, 30.3 (2)). “Previously, the presence of these ‘resource conditions’ were themselves defined as extraordinary circumstances, but the Forest Service changed the Handbook to make what was a mandatory duty into a discretionary act” (Vaughan 2006).

In short, the HFI “clarification” of extraordinary circumstances allowed the agency to authorize management in areas that would have required substantially more environmental review (White House 2002). Chapter Eight includes an analysis the effects of this HFI policy change to the extraordinary circumstances and the subsequent national forest management in North Carolina that would have previously required public documentation of potential environmental effects in an EA.

Goods for Services (Stewardship Contracting)

Under the HFI, the Bush Administration created a new “Goods for Services” (GFS) contract, which authorized the Forest Service and the Bureau of Land Management to use a new commercial logging contract system. The new GFS contracts allow private companies to take merchantable trees from the national forests in return for “stewardship” (White House 2002). GFS projects would “allow contractors to keep wood products in exchange for the service of thinning trees and brush and removing dead wood.” (68 Fed. Reg. 70,758 (Dec. 19, 2003).

These projects authorized commercial logging, presumably in relatively functional ecosystems, to fund restoration and “forest health” issues emerging from fire suppression, road-building, invasive species, climate change, and commercial logging (White House 2002). Despite the curious circular logic and the obvious tension within the Forest Service between commercial and ecological forestry (see Chapter Four), the Bush Administration revised the new contract system and approved 145 contracts covering 80,000 acres in federal lands. “This quid pro quo was met with alarm by environmentalists since it would allow logging companies to log the big, profitable trees in exchange for taking away the small ones that have little or no commercial value” (Huber 2005:800)

The HFI also included provisions that the Forest Service should incorporate collaborative decision-making when planning projects with GFS contracts. “Efforts should be made to involve a diversity of local interests and engage key stakeholders in collaboration throughout the life of the project, from project design through implementation and monitoring (FSH 61.12). Whenever the agency plans a GFS contract, the “Principles of Collaboration” section of the agency’s handbook requires that “the line officer at the appropriate level shall seek to involve the public in a collaborative manner” (FSH 61.12a1). The HFI defined this as seeking early involvement, incorporating a diversity of interests, and involving the Forest Service as a participant who does not “chair or direct the collaborative group” (FSH 61.12a1). Furthermore, the directions include strategies for creating an “open, inclusive, and transparent process” to bring stakeholders into the process (61.12a2). Chapter Seven provides an analysis of

the GFS projects proposed and implementing in North Carolina from 2003 through 2008.

In summary, the combined effect of the HFI regulatory changes reduced citizen participation (Appeals Rule) for expedited commercial forestry projects (CE's) authorized in areas previously off-limits (extraordinary circumstances) while creating a contract system with commercial incentives to attract commercial forestry interests (GFS). This new regulatory framework for national forest decision-making was in place for over two years before federal courts invalidated substantial portions of the Healthy Forest Initiative. To better understand the type of democratic structure occurring in national forest decision-making in North Carolina's national forests, the next section explores the results of three legal challenges to the Bush Administration that modified the original HFI by stripping several key components of the policy.

LEGAL CHALLENGES TO THE HEALTHY FOREST INITIATIVE

Only sixteen days after going into effect, the new Healthy Forest Initiative public participation regulations came under challenge in federal district court (*WildLaw v. U.S. Forest Service*, No. CV-03-T-682-N (M.D. Ala. filed June 20, 2003)). This section addresses legal challenges filed by public interest groups that invalidated several key sections of the HFI, including the Appeals Rule, requirements for "substantive comment," and the HFI CE (#10) for "Hazardous Fuels." Many other HFI provisions are still in effect, including the "clarification" to extraordinary circumstances, expedited processes for "economic emergencies," and the "limited" and salvage logging CE's. Before addressing

analysis of the North Carolina case study, this section describes the legal status of the Healthy Forest Initiative and the deliberative process under the current administrative framework.

In September 2003, the Forest Service in California proposed a 238-acre salvage logging project called the Burnt Ridge Project in the McNally fire area in the Sequoia National Forest. The project was approved under the new HFI “Limited” logging CE (CE 12) exemption from NEPA’s EA requirements, and the Forest Service also used the new Appeals Rule to waive public notice, comment, 36 C.F.R. §§ 215.12(f) and appeal procedures (36 CFR 215.4(a)). On December 10th, 2003, environmental groups filed a federal lawsuit in the Eastern District of California against the Forest Service for implementing the Burnt Ridge projects under the HFI’s Appeals Rule.

Among several claims made in the case, *Earth Island Inst. v. Pengilly* (No. 03–6386) (*Earth Island v Pengilly*) centered on the Appeals Rule’s elimination of notice, comment (36 CFR § 215.4(a)), and administrative appeal (36 CFR § 215.12(f)). Plaintiffs called for the project to be halted because the agency failed to provide for notice, comment, and administrative appeal opportunities as required by the ARA. In March 2004, after the District Court issued a preliminary injunction against the agency, the Forest Service dropped the project and settled to avoid a precedent setting ruling challenging the merits of the HFI. The District Court, however, proceeded to hear the plaintiffs’ facial challenge to the merits of the regulations.

On July 2nd 2005, Federal District Judge James Singleton announced his ruling in *Earth Island v Pengilly*, holding the Bush Administration’s Appeals Rule and other HFI

provisions were illegal and the judge severed them from the regulations. Judge Singleton found the regulations inconsistent with plain language in the ARA requiring public notice, comment, and appeal in any actions that concern “land and resource management plans...shall be subject to notice, comment and appeal procedures” (a). The court was unconvinced by Forest Service claims that opening CE projects to public participation would create an unreasonable burden on the agency given the large number of projects the agency was approving under the CE process, and Judge Singleton held the HFI Appeals Rule was “manifestly contrary” to the ARA (discussed in Chapter Five). “The ARA was drafted in direct response to the Forest Service’s 1992 proposal to eliminate such appeals... While the Forest Service is clearly not required to make every minor project it undertakes subject to the appeals process, it is required to delineate between major and minor projects in a way that gives permissible effect to the language of the ARA” (Singleton 2005: 10).

The judge also invalidated several other provisions of the HFI, including eliminating decisions signed by the Secretary of Agriculture from notice, comment, and appeal (36 C.F.R. § 215.20(b), the delegation of the authority to district rangers to declare an emergency (36 C.F.R. § 215.10(a), and the reduction of an automatic stay on a project after an appeal has been filed by the public (36 C.F.R. § 215.18(b). After invalidating the Appeals Rule, the judge replaced the original regulations from 1993, as modified in federal court proceedings (*Heartwood v. Forest Service*, 73 F. Supp. 2d 962, 980 (S.D. Ill. 1999), which required that national forest CE projects be subject to notice, comment, and administrative appeal.

The Forest Service reacted to the ruling by first limiting its application to federal lands in CA, arguing that “For National Forest System lands outside of the Eastern District of California, the Government’s current legal position is that the Court’s July 2, 2005, order does not apply” (Holtrop 2003). Later, however, Forest Chief Dale Bosworth directed the agency in a September 23, 2005 letter to the agency employees to comply with *Earth Island v Pengilly* by suspending all CE projects nationally. The Chief wrote that, due to the federal District Court ruling, “All categorically excluded projects must be immediately suspended and subjected to notice, comment, and appeal” (Bosworth 2005:1). In response, however, the Forest Service extended the ruling to projects far beyond the scope of the original challenge in *Earth II v Pengilly* to almost 1,500 activities nationwide, including permits to cut the U.S. Capitol Christmas tree, 169 projects involving trail maintenance, 115 permits for guided hunting, fishing, river, and horseback trips, and permits to pick mushrooms on national forests in Oregon (Barnard 2005).

Some in the commodity forestry community, like Chris West with the American Forest Resource Council, asserted that environmentalist groups had intentionally caused the suspension of minor activities without anticipating the consequences (Barnard 2005). Others noted that the Forest Service application of the Judge Singleton’s orders to all minor activities was a “political ploy” intended to help the Forest Service “overrule [the district court’s decision] legislatively,” and “should lead to more questions about the real motives of the agency that allegedly protects the nation’s forests” (*Washington Post* 2005:12).

The agency's action provoked an angry response by several Congressmen, including Reps. Peter Defazio (D-CA), George Miller (D-CA), and Tom Udall (D-NM), who voiced their opposition directly to Forest Service Chief Dale Bosworth. In their public letter, the Congressmen wrote, "As we understand the district court decision, your directive applies to categorically excluded actions far beyond those intended by the court... Your directive has caused unnecessary confusion and placed a significant burden on many who rely on the national forests for income, recreation, and general use." In another letter, Sen. Jeff Bingaman (D-NM) and Sen. Tom Harkin (D-IA) criticized the agency for its application of the ruling, concluding that "excluding important segments of the public from entering the National Forests is not good agency management. Nor is trying to exclude the public from the decision making processes governing the National Forests" (2005:2).

Given the confusion of the *Earth Island v Pengilly* ruling, the plaintiffs returned to court under a new lawsuit (*Earth Island v Ruthenbeck*) to compel the Forest Service to properly apply the July 2nd ruling and to broaden its application nationally. On October 19, 2005, Judge Singleton clarified his early ruling by declaring that the agency was only required to open projects addressed in the ARA's original 1993 and 2000 implementing regulations. Judge Singleton wrote, "The Forest Service need not suspend actions not contemplated in the old rules, such as approval, modification, or continuation of minor, short-term special uses of National Forest System lands, such as for state-licensed outfitters or guides, or approving gathering forest products for personal use" (*Earth Island v Ruthenbeck* 2005:2).

As part of the October 2005 ruling, however, Judge Singleton also extended his earlier ruling by applying, nationally, the injunction against the HFI's Appeal Rule. In effect, this ruling invalidated the HFI's Appeals Rule after 28 months. This ruling was upheld in August 2006 by Ninth Circuit of Appeals (*Earth Island Inst. v. Ruthenbeck*, 459 F.3d 954, 958), which affirmed "the district court's judgment that 36 C.F.R. §§ 215.12(f) and 215.4(a) conflict with the Appeals Reform Act and affirm the nationwide injunction barring their application" (pg 9322).

In a separate case announced April 24, 2006, *Wilderness Society v. Rey II* (No. CV-03-119-M-DWM) (*TWS v Rey II*), a federal district court in Missoula, MT, issued another ruling upholding the same ban against the HFI's Appeal Rule regarding notice, comment (215.12(f)) and administrative appeals (215.4(a)). Summarizing his decision, District Court Judge Molloy asserted that, "pulling the public out of those decisions I think is undemocratic" (*TWS v Rey II*). The court also invalidated the HFI provision requiring the public to include "substantive comments" to secure standing and the right to appeal the final decision of the district ranger (36 C.F.R. 215.13(a)).

Finally, on December 5, 2007, in the third successful legal challenge to the HFI regulations, *Sierra Club v. Bosworth* (No. CIV.S-04-2114-GEB-DAD) addressed the Hazardous Fuels CE (#10). In this case, the Ninth Circuit Court of Appeals overturned a summary judgment order by the district court and instead ruled against the Bush Administration's new exemption for logging up to 1,000 acres and burning up to 4,500. The court determined the Bush regulations were "arbitrary and capricious" and concluded "the Forest Service failed to assess properly the significance of the hazardous

fuels reduction categorical exclusion.” The Ninth Circuit found the Forest Service’s Fuels CE was illegal because the agency could not show the site-specific projects would not have a significant individual or cumulative impact on the environment. Combined with the invalidation of the Appeals Rule in *Earth Island v Ruthenbeck* (2005), these rulings by the Ninth Circuit removed the only CE requiring collaborative decision-making while reinstating the direct participation process (administrative appeals) for individual citizens and interest groups.

On March 3, 2009, the U.S. Supreme Court ruled on the Bush Administration’s appeal of the *Earth Island v Ruthenbeck*, and in a 5-4 decision the justices threw out the case based on a technicality (*Summers v. Earth Island Institute* (No. 07-463, 490 F. 3d 687 2009). Formerly *Earth Island v Pengilly*, the court held that the conservation groups did not have sufficient standing to bring a challenge to the HFI regulations without evidence of direct injury to the plaintiffs. As Justice Antonin Scalia wrote in the opinion, without standing “courts have no charter to review and revise legislative and executive action,” (No. 07-463). In splitting the court over the issue of standing to address environmental issues, the U.S. Supreme Court threw the case out on a technicality. In July 2009, the federal district court vacated its injunction requiring appeals CE decisions, and the Forest Service, under the Obama Administration, once again began to exempt CE timber sales and other actions from notice, comment, and appeal. A new lawsuit, filed in U.S. District Court in Los Angeles on December 19, 2009, has again challenged the same HFI regulations.

CONCLUSION

The Healthy Forest Initiative's Appeals Rule affecting public participation was created by the Forest Service in June 2003 and implemented for over two years before federal district and appeals courts severed the rule from the regulations on October 2005. This fluctuation in democratic processes for citizen participation sets up a natural experiment to address the role of the Healthy Forest Initiative's Appeals Rule in national forest management. Additionally, the creation of new exemptions for "Extraordinary Circumstances," new classes of categorical exclusions, and the use of new "Good for Service's Stewardship Contracts" all provide opportunities for studying implementation of the HFI and the democratic theories that explain its structure.

CHAPTER SEVEN: AN ANALYSIS OF PUBLIC PARTICIPATION IN NORTH CAROLINA'S NATIONAL FOREST MANAGEMENT

*The greater part of what my neighbors call good I believe in my soul to be
bad, and if I repent of anything, it is very likely to be my good behavior.
What demon possessed me that I behaved so well?*

*Henry David Thoreau
Walden*

INTRODUCTION

Alternate democratic theories are offered, by various proponents, to provide the most adequate understanding of public participation in governance. These theories address the role of conflict, power, and access in democratic cultures, illuminating the century-long experience with contentious federal forest management in the United States. During the “participation explosion” (Almond and Verba 1963) of democratic law established during the “environmental era” (Andrews 1999), the U.S. Forest Service earned the status as the agency with the most “explicit public involvement mandate” (Daniels and Walker 1997). This chapter addresses alternative theories of public participation in Forest Service decision-making under the Bush Administration’s Healthy Forest Initiative in North Carolina’s national forests.

Although the agency is responsible for including the public in most of its decision-making, the legal process through which the public is granted access has recently taken many different forms—especially in light of the new Healthy Forest

Initiative (HFI) regulations created by the Bush Administration in 2002 (See Chapter Six).

This chapter begins with an analysis of specific public comments made during “pre-decisional” planning for national forest management in North Carolina under the HFI.

These findings will provide data for assessing the extent to which elite, pluralistic, deliberative, or agonistic theories best describe the prevailing process governing national forest management in North Carolina under the HFI.

THE CROATAN, NANTAHALA, PISGAH, AND UWHARRIE NATIONAL FORESTS

To understand the characteristics and processes for participation under the Healthy Forest Initiative, this section presents a content analysis of written and verbal comments submitted during official scoping and administrative appeal process for Forest Service vegetation management Categorical Exclusion (CE) projects in the Croatan, Nantahala, Pisgah, and Uwharrie National Forests from 2003 through 2008 (see Figure 1).

From over 330 CE projects proposed by the Forest Service in North Carolina during this time, 67 HFI related vegetation management CE projects were identified for this study (see Chapter Eight). During the pre-decisional planning phase for these projects, called the “scoping process,” the Forest Service received 171 verbal and written comments through phone calls, letters, and email. These comments are analyzed below for their process and participant characteristics.

The agency received only one administrative appeal (36 CFR 215) for the 67 vegetation management projects selected for this research. While “scoping” comments

were available throughout the time reviewed for this study, administrative appeals were only available half-way through the course of this study, in the end of 2005, when federal district and appeals courts (*Earth Island v Ruthenbeck* 2005) returned the right of appeal guaranteed under the ARA (see Chapter Six). For additional discussion of the methods and definitions used for the analysis in this chapter, please refer to Chapter Three.

Figure 2. Conceptual Framework For Research Design: Decision-Making Process.		
Decision-making process = f (Process Characteristics + Participant Characteristics)		
Decision-Making Process	Process Characteristics	Participant Characteristics
Elite Aggregative Pluralistic Deliberative Democracy Agonistic	HFI Appeals Rule Collaboration Scoping Comments	Who participated What they said How they said it

Based on the comments obtained for this study, categories were constructed to facilitate an analysis of process and participant characteristics. This research design allows for an assessment of the democratic theory(s) present in the HFI decision-making through an analysis of the public access (process characteristics) and citizen comments (participant characteristics). The process characteristics identified in this study are scoping-level comments, administrative appeals, and collaborative decision-making. Participant characteristics are then analyzed to determine *who* participated, *what* they said, and *how* they said it. Under the WHO category, participants were categorized based on the commenter's 1) Affiliation (individual or one of twenty-three interest groups); 2) Representation (Individual, Non-Governmental Organization,

Governmental); 3) Interest identification (Hunters/Anglers, Ecological Forestry, Recreationalists, Commodity Forestry/Developer/Business, Professional/Scientific/Historical, State Agency/Commission, Federal Agency, and None Identified) and 4) Locus (Local, Out-of-State, or Unknown). The WHAT variable was coded based on the commenter's 1) Attitude (Support, Opposed, Mixed, and Neutral); 2) Source of Concern (Road Construction, Pre-commercial Thinning, Commercial Logging, Prescribed Burns, Other, or None Mentioned; 3) Potential Effects (Ecological Forestry, Aesthetics, Recreation/Hunting, Scientific, Other, or None-mentioned). Finally, the HOW variables were categorized based on the comment's 1) Vehicle (Written or Verbal), 2) Style (Typed, Handwritten, Form letter, Phone, or Other), and 3) Detail (no detail, general, 1-2 topics, 3-5 topics, 5+ topics).

FINDINGS

The first level of analysis for this chapter describes the general characteristics of the data set. These descriptive statistics provide a summary of the findings as they relate to process and participants variables identified in the conceptual framework for this dissertation (Figure 2). Process characteristics describe the rules governing the public participation, while participant variables describe *who* participated, *what* they said, and *how* they said it.

The second level of analysis tests for relationships between selected factor and response variables (dependent and independent variables) to offer a glimpse into the significant influences and processes behind implementation of the Bush Administration's Healthy Forest Initiative. The contingency tables explored in this

section included the attitude response variable (*What*) to representation, interest identification, and affiliation explanatory variables (*Who*). Contingency tables were created to establish levels of independence between the independent variables (factor) and dependent variables (response) (Agresti 1990:2; Steelman 1996:206). Several tables were analyzed through chi-square tests to determine which variables were major contributors to the rejection of several null hypotheses (assuming independence between *what* comments said and *who* the commenters were. Chi-square tests are used to examine relationships for levels of significance, or evidence for rejecting independence, between the response and explanatory variables.

Additionally, this chapter includes an analysis of the *predictors of public participation*. Logistic regression models were used to determine which combination of variables (acreage and species occurrences in each project) best predicted citizen participation. These include the physical size of the project, number of species in the project, and these two variables in combination. To understand how variables act in concert in the same model, predicted probabilities, $\hat{\pi}$, for various predictor combinations can be used to classify an observation's participation type. In short, the final section summarizes the predictors of public participation to determine whether knowing a project's size and species composition creates expectations about the level of public participation (and conflict) each project may entail.

PROCESS & PARTICIPANT CHARACTERISTICS

From 2003 through 2008, public comments in North Carolina's national forests were filed under fluctuating legal processes based on HFI regulation changes, federal court orders, or established statutory law. The processes identified for this study, described in Chapter Six, were the National Environmental Policy Act (NEPA) general scoping process, the National Forest Decision-Making and Appeals Reform Act (ARA) administrative appeal process, and new HFI policies requiring collaborative decision making (Hazardous Fuels Reduction CE and Goods for Services Contracting).

Among these opportunities for participation, the public used the general scoping process to submit 99.94 percent of all comments. There was only one administrative appeal filed in North Carolina by WildLaw against the Pekin Branch Ecosystem Project, which the Uwharrie National Forest created as a combined EA and CE proposal. Finally, the Forest Service received zero comments through collaborative management decision-making processes, as defined in the HFI (CE 10), implementing regulations in the Forest Service Handbook (FSH 61.12), and in the policy and resource management literature (Gray 1989, Wondolleck & Yaffee 2000, Leach 2006). The agency did claim to be using forms of collaborative decision-making for one project, although this claim is weak given general definitions of collaboration (see discussion below). Table 1 summarizes the process characteristics used by the public to comment on Forest Service vegetation management CE projects from 2003 through 2008 in national forests in North Carolina.

Table 6. Type of participation in Vegetation Management CE projects in North Carolina National Forests.	
Types of Participation	Total
Administrative Appeals	1
Collaborative Decision-Making	0
Scoping Comments	171

PROCESS CHARACTERISTICS: ADMINISTRATIVE APPEALS

In addition to “pre-decisional” scoping-level comment periods (discussed below), the public has historically had the opportunity to appeal Forest Service decisions for forest-wide planning and site-specific project-level activity (see Chapter Five and Six). Under the HFI, the administrative appeals process was eliminated for CE projects by the Appeals Rule. This HFI rule was in effect for less than three years before it was invalidated by federal district and appeals courts (*Earth Island v Ruthenbeck*). After the Earth Island ruling, the public was allowed to appeal decisions again, although appellants could only gain standing to appeal if they submitted “substantive” comments during the scoping process. Four years after it was established, the substantive comments HFI rule was invalidated in *Wilderness Society v Rey II* (2006) (See Chapter Six).

During the three years when the HFI Appeals Rule was legal, the agency proposed 49 projects in North Carolina (not subject to appeal). After the Forest Service was enjoined from using the regulations, the agency authorized 18 projects over the

next three years. In relation to the “substantive comment” rule, the agency was able to waive the right to appeal for six of the 18 projects if it determined that the comments were not “substantial” based on the HFI rule. The final 12 projects were open to appeal without substantive comment thresholds established by the HFI. Chapter Eight addresses the process and project characteristics identified in this study, including the types of projects proposed (new or existing CE’s), ecological issues (extraordinary circumstances) relating to the different projects, and the frequency of proposed projects in North Carolina.

PARTICIPANT CHARACTERISTICS: ADMINISTRATIVE APPEALS

Who Participated

Of the CE projects subject to formal administrative appeal rights, only one was appealed in North Carolina by the Asheville-based office of the WildLaw legal firm. This was filed against the 4,765 acre Pekin Ecosystem Management Project in the Uwharrie National Forest that originally included over 3,898 acres of logging authorized through the CE process. This project combined activities on 867 acres documented in an environmental assessment (road construction, logging, and herbicides) and 3,898 acres of activities categorically exclude from documentation under NEPA. No other projects in North Carolina were challenged using an administrative appeal that involved a CE.

The WildLaw appeal was filed on behalf of Wild South, Southern Appalachian Forest Coalition, and Southern Appalachian Biodiversity Project, which are environmental organizations based in Asheville, North Carolina. Each of these groups

participated in scoping-level commenting, thereby establishing the right to appeal the project. Of all the participants involved in the scoping-level commenting period, none filed supporting comments. Wild South, for example, specifically addressed the process, writing “Looking at the project as a whole, it cannot be authorized under a categorical exclusion to the National Environmental Policy Act... Given the large area and potential effects of these actions, an Environmental Assessment, or Environmental Impact Statement should be performed prior to the implementation of any portion of this proposed project” (Doughty & Schenk 2005:1-2).

After the responsible officer received these comments, she separated the Pekin project’s EA and CE portions and issued a decision notice on the former on 9/30/2005. After the agency entered a formal resolution meeting with all parties, the appeal was withdrawn based on several conditions, including an agreement that the agency would publicly disclose its response by appending the comments to its decision notice in the project file. After two years, the agency reissued the CE portion of the project entitled the Pekin Wildlife Opening Expansion, which only included 10 acres of logging vegetation, stumps, and “merchantable” trees.

The lack of administrative appeals filed in North Carolina against CE’s can be explained first by the elimination of the process during the first three years identified in this study. When the public could use the process, there were far fewer projects to appeal (See Chapter Eight). Based on modifications made to the Pekin project, the appeal filed appeared to have some influence over the process. Chapter Eight explores

the policy and project characteristics of the Pekin Branch and 66 other CE vegetation management projects issued in North Carolina.

PROCESS CHARACTERISTIC: COLLABORATION

According to the literature, collaborative management processes rely on deliberative negotiation, involvement of key stakeholders, and consensus-based decision-making to resolve conflict (see Chapter Two). The HFI included new regulations for Categorical Exclusions and “Goods for Services” (GFS) contracting that required collaborative decision-making for federal forest management (see Chapter Six). This next section investigates eight projects implemented in North Carolina governed by the new HFI processes for collaborative decision-making.

“Hazardous Fuels Reduction” Categorical Exclusion & Collaborative Management

One of the new HFI regulations, the “Hazardous Fuels Reduction” CE #10, is a procedure for exempting up to 1,000 acres of logging and 4,500 acres of prescribed burning from the standard National Environmental Policy Act (NEPA) environmental assessment and Environmental Impact Statement process (36 CFR 220((ii)). This exemption for “hazardous fuels reduction” activities also requires that proposals “shall be identified through a collaborative framework” consistent with the agency’s guidelines outlined in the *Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment – Ten-Year Comprehensive Strategy: Implementation Plan* (USDA & USDI 2002).

This “collaborative framework” is described by the *Implementation Plan* as the process of bringing together agency professionals, local participants, and state, federal and tribal governments to prioritize management and implementation. This approach emphasizes “local level collaboration” with stakeholders who have expressed some expertise or interests in the forest (2001:9). According to a decision diagram in the Forest Service’s HFI Field Guide, the first step in determining whether the Hazardous Fuels CE is appropriate includes identifying whether the project is “collaborative as described in the *Implementation Plan*” (USDA). Otherwise, the project cannot proceed and the Forest Service instructs officers to “consider authorities other than the HFI CE” (USDA).

“Goods for Services” Contracting

Another effort that was intended to include collaborative decision-making for national forest management was a new HFI provision for Stewardship End Use Contracting, Otherwise known As “Goods for Services” (GFS) contracting, which authorizes the Forest Service to pay contractors with merchantable trees.. The GFS contract provision was created by the Healthy Forest Initiative and authorized “agencies to enter into long-term stewardship contracts with the private sector, non-profit organizations, and local communities” (White House 2002). The Forest Service and the Bureau of Land Management were authorized to use this new commercial logging contract system that allows private companies to take merchantable trees from the national forests in return for “stewardship” (White House 2002). GFS projects would “allow contractors to keep wood products in exchange for the service of thinning trees

and brush and removing dead wood.” After the Bush Administration revised the new contract system, the Forest Service approved 145 contracts covering 80,000-acres of federal lands.

For these projects, the Forest Service is directed to establish a collaborative decision-making process to “involve States, counties, local communities, and interested stakeholders in a public process to provide input on implementation of stewardship contract projects” (FSH 61.12). This was theorized as a process that would bring stakeholders to the table to avoid conflicts resulting in formal challenges to a District Ranger’s decision by appealing to supervisor’s offices.

As a result of the combined Appeals Rule (described above) and the new collaborative requirements, participants must either engage Forest Service collaborative management decision-making or challenge projects in federal court (see discussion in Chapter Six). The following section includes an investigation of the public process for three HFI projects authorized in North Carolina using the new GFS contract provisions.

PARTICIPANT CHARACTERISTICS: COLLABORATION

The Hazardous Fuels CE was used five times in North Carolina between the time the regulation was established in 2003 (68 Fed. Reg. at 33,814) and invalidated by a federal district judge in 2007 (*Sierra v Bosworth*). Content analysis of public participation in the project files available for the five “Hazardous Fuels Reduction” CE used in North Carolina show little to no evidence of deliberative negotiations or collaborative stakeholder involvement. Based on the available documentation obtained through a Freedom of Information Act (FOIA) request, there were no stakeholder

meetings, decentralized (devolved) decision-making, or evidence of formal collaborative partnerships between the Forest Service and the public that would pass scrutiny under transparency rules of the Federal Advisory Committee Act (FACA).

The only public participation for these projects involved a scoping letter and published announcements requesting public comments. There was no opportunity for the public to enter face-to-face negotiations or formally object to decisions. This approach, according to Germain et al., is defined as “Informing,” which represents the least substantial form of participation on “a scale from one-way flow of information to complete decision-making authority” (2001:115). On the other hand, Germain defined collaborative decision-making as process in which the “citizen and agency become partners; [the] public begins to have decision-making clout; [and] can negotiate and engage in trade-offs with power holders” (2001:115). Furthermore, environmental analysis was not included in the project announcements, which makes effective collaborative negotiations unlikely for expedited projects exempted from NEPA’s more detailed and involved environmental review process.

The lack of deliberative meetings or stakeholder negotiations is also inconsistent with the Forest Service’s requirements under the HFI rules that compel the agency to follow a “collaborative framework” as defined by the *Collaborative Approach* (2001). According to the guidelines defined in this manual, “local level collaboration should involve participants with direct responsibility for management decisions affecting public and/or private land and resources, fire protection responsibilities, or good working knowledge and interest in the local resources” (2001:9). Although the agency informed

members of the public who previously expressed an interest in national forest management, the Forest Service did not engage in collaborative decision-making.

Public participation for three of the HFI CE 10 projects (proposed and implemented in the Uwharrie National Forest) was a scoping process limited to half-page announcements of the projects sent to participants on the Forest Service's mailing list and published in the *Montgomery Herald*. Although 13 participants responded to the agency's scoping request within the 30-day comment period, in each case the Uwharrie National Forest published an abbreviated decision memo (DM) with little to no evidence of incorporating the public's comments into the decisions. Moreover, there were no opportunities for formal collaboration as required by the HFI.

Two other Hazardous Fuels Reduction projects were planned and implemented in the Highlands District of the Pisgah National Forest. These projects were also limited to the scoping process and precluded any collaborative decision-making opportunity. Furthermore, considering there was no public participation documented in the project files, the public either refused to comment on these projects or the comments were lost by the agency. As the Forest Service acknowledged, "Unfortunately, this is all the documentation we have for these two projects, as some of it may have been lost during the consolidation of the Wayah and the Highlands Ranger Districts" (Forest Supervisors Office 2009:1).

Nationally, the Forest Service used the new HFI CE for "Hazardous Fuels Reduction" over 450 times before it was invalidated by the federal courts (*Sierra v Bosworth* 2007). Although it is unknown how many of these projects used

collaboration, the five occurring in the Pisgah and Uwharrie National Forests did not use collaborative planning based on the available evidence gathered through a federally approved document request. Furthermore, the call for public comments (scoping request) did not invite participants to engage in any form of collaborative decision-making, as defined by either the HFI or the conservation, resource management, and policy literatures (McCloskey 1999; Wondolleck 1999; Manring 2005; Leach 2006; Koontz & Thomas 2006).

Under the new GFS contracting provisions, the Forest Service authorized the Fires Creek Stewardship Project in the Nantahala National Forest, the Catpen Stewardship Project in the Pisgah National Forest, and the Brice Creek Stewardship Project in the Croatan National Forest. Although not required by the force of law, the Forest Service's Handbook directs the agency to incorporate collaborative decision-making when planning projects with GFS contracts. "Efforts should be made to involve a diversity of local interests and engage key stakeholders in collaboration throughout the life of the project, from project design through implementation and monitoring" (FSH 61.12). Whenever the agency plans a GFS contract, the "Principles of Collaboration" section of the agency's handbook requires that "the line officer at the appropriate level shall seek to involve the public in a collaborative manner" (61.12a1). This is defined as seeking early involvement, incorporating a diversity of interests, and involving the Forest Service as a participant who does not "chair or direct the collaborative group." Furthermore, the directions include strategies for creating an "open, inclusive, and transparent process" to bring stakeholders into the process (61.12a2).

As addressed in Chapter 2, collaboration—as understood through the lens of deliberative democracy (Rawls 1971; Habermas 1975) or collaborative management (Gray 1989; Wondolleck & Yaffee 2000)—is currently debated at length in the conservation literature (Peterson et al. 2004, 2005, 2007; Leach 2006; Thomas and Koontz 2006). There are also many examples where new partnerships have formed to collaboratively design a federal land management projects (Hibbard & Madson 2003). Collaborative management also continues to serve as a policy tool in new federal law (Healthy Forest Restoration Act).

The three GFS projects identified in this study do not share features with the type of collaborative management defined in the literature, historical precedence, statutory language, or current policy-making trends. The projects did not include any public meetings or deliberation, and key stakeholders were not identified or brought into a public negotiation process early. In short, there was no evidence of any formal collaborative planning and negotiation.

The Fires Creek Stewardship Project, located in the Nantahala National Forest in Clay County, North Carolina was the first GFS contract authorized in the state. The original proposal called for logging 230 acres, including 15 acres in the Tusquitee Bald Roadless Area, while providing funds for “wildlife habitat enhancement,” watershed restoration, and access for anglers and other visitors. In the announcement of the project, the scoping letter stated, “Areas were selected with cooperation from the local Grouse Society” and that the proposal was informed by “interviews with local sportsmen and members of the local Ruffed Grouse Society” (on file with author).

The project file for the Fires Creek Stewardship Project, however, included no public records or transcripts documenting this cooperation. If the agency did formally collaborate with local hunting groups without making the negotiations public and inclusive, or documenting the communication in public record, it would be in direct violation of the Administrative Procedures Act, Federal Advisory Committee Act, and the Freedom of Information Act. Instead, the better explanation is that the project was not a formal collaborative endeavor, and the Forest Service was merely adhering to its traditional elite decision-making structure (see discussion in Chapter Two, Four, and Nine) by informally speaking with privileged interest groups.

Although the participant characteristics for scoping-level participation for all comments are described below, the Fires Creek Stewardship Project is noteworthy. This project was opposed by more participants than any other project, with the exception of the Dillingham Salvage Logging Project (described below) and two with equal numbers of opposing comments (the Catpen Stewardship Project and Cheoah Prescribed Burn). Analysis of the individual objections raised per comment showed that participants raised more criticisms for this project than any other, and more than 28 percent of these specific objections were process related. As one commenter explained, “Apparently, the district contacted interested parties when it began this collaborative process, but we are disappointed that our organization was not notified” (Gale 2005:1). Another commenter stated, “While the Forest Service has apparently been involved with the local Grouse Society in planning this project, there is little evidence that there

has been an effort to make the project truly collaborative” (Irwin 2005:2, on file with author).

These scoping-level comments and others were critical of the agency’s interpretation of the collaborative provisions in the GFS contracting policy for the Fires Creek Stewardship Project. In response, the Forest Service district ranger considered criticisms “non significant” because the agency considered the scoping process as fulfilling the commitment to “involve as collaborative partner” participants in addition to those interested in hunting (Vann 2006:1, on file with author). According to the district ranger “input from these groups provided during scoping has been considered in the final development of the proposal” (Vann 2006:1, on file with author). As previously discussed, however, few credible policy scientists in the literature would identify scoping-level input as collaborative management (Germain 2001).

The two other GFS projects, the Catpen Stewardship Project in the Pisgah National Forest and the Brice Creek Stewardship Projects in the Croatan, also failed to show any evidence of collaborative decision-making as defined by the Forest Service handbook or other definitions of collaboration in the literature. Like the Fires Creek project, formal public participation in the Catpen and Brice Creek Stewardship Projects was limited to scoping-level comments. Also like Fires Creek, the Catpen Stewardship project was overwhelmingly opposed by participants, with no comments showing complete support for the proposal.

Although project files for the Catpen Stewardship Project included no documentation of any meetings with stakeholders (formal or otherwise), the Decision

Memo stated that “additional funds and labor will come from the NC Wildlife Resources Commission, the National Turkey Federation, the Appalachian Trail Conference, the Backcountry Horsemen, the Hot Springs Hiking Club, and/or the Carolina Mountain Club” (Catpen 2005, on file with author). Based on the public record, however, negotiations with these potential stakeholders either failed to comply with applicable federal sunshine laws (APA, NEPA, FACA, and FOIA) or these negotiations were not formally conducted through an official collaborative decision-making process. Instead, the project was best described by democratic theories other than deliberative democracy (see Chapter Nine).

While the Hazardous Fuels CE and Goods for Services contracting provisions required or recommend collaboration for federal forest planning, the projects authorized under the HFI in North Carolina would not qualify as formal collaborative management. Based on the evidence obtained through a formal Freedom of Information Act Request, there were no collaborative decision-making processes in North Carolina under the Healthy Forest Initiative.

PROCESS CHARACTERISTICS: SCOPING

The Forest Service is required by the National Environmental Policy Act to “scope” the public to determine whether significant issues may be present that would require the agency to conduct an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) (see Chapter Five). According to the Forest Service Handbook, “If the responsible official determines, based on scoping, that it is uncertain whether the

proposed action may have a significant effect on the environment, prepare an EA. If the responsible official determines, based on scoping, that the proposed action may have a significant environmental effect, prepare an EIS” (36 CFR 220.6(c)).

The public is allowed to participate in scoping for all Forest Service actions, including projects that are exempted from NEPA’s EA process. As the Forest Service Handbook explains, “Scoping is required for all FS proposed actions, including those that would appear to be categorically excluded (ch.10, sec. 11). Scoping is important to discover information that could point to the need for an EA or EIS versus a CE as well as to inform the public. Scoping complexity should be commensurate with project complexity” (ch.10, sec 11). Even for projects that the agency considers routine and approved through the CE process, a citizen may raise issues relating to extraordinary circumstances that would normally require the agency to conduct an EA or EIS. This automatic trigger by an extraordinary circumstance was eliminated by the Bush Administration as part of the first rule change under the HFI (see Chapters Six and Eight).

In addition to announcing the call for scoping in the Schedule of Proposed Actions (SOPA) (see Chapter Three), the Forest Service is required to use other mechanisms for soliciting public comment for a proposed action. These include letters mailed to citizens who have expressed interest in Forest Service management in the past. The agency is also required to publish a notice in one of the local newspapers.

PARTICIPANT CHARACTERISTICS: SCOPING

WHO PARTICIPATED

The first level of analysis addresses *who* participated in categorical exclusion projects in North Carolina from 2003 through 2008 (Table 2). Content analysis of these comments revealed that individuals made 17 percent of the comments submitted to the Forest Service during the scoping process for CE projects. Interest group representation from Non-Governmental Organizations (NGO) accounted for 33.33 percent of the comments, while state and federal agencies made approximately half of all the comments (See Table 3). The comments were predominantly submitted by in-state participants, making up 95 percent of all comments. Finally, those with an interest in ecological forestry submitted the most comments (46 percent) while those with commodity interests accounted for six percent of the total. Table 7 summarizes the *Who* characteristics of participation in vegetation management projects in North Carolina.

Table 7. Who Participated In NC National Forest CE Scoping.						
AFFILIATION OF COMMENTER	Individuals			Interest Group		
n=171	16.95% 29			83.04% 142		
REPRESENTATION	Individuals	NGO		State	Federal	
n=171	16.95% (29)	33.33% (57)		32.16% (55)	17.54% (30)	
INTEREST IDENTIFICATION (w/ Gov Agencies)	Hunter -Angler	Ecological Forestry	Recreation	Commodity Forestry	Professional	Unknown
n=171	16.37% 28	48.54% (83)	12.87% (22)	6.43% (11)	5.85% (10)	9.94% (17)
LOCUS OF COMMENTER	In State		Out of State		Unknown	
n=171	94.74% (162)		4.68% 8		0.58% 1	

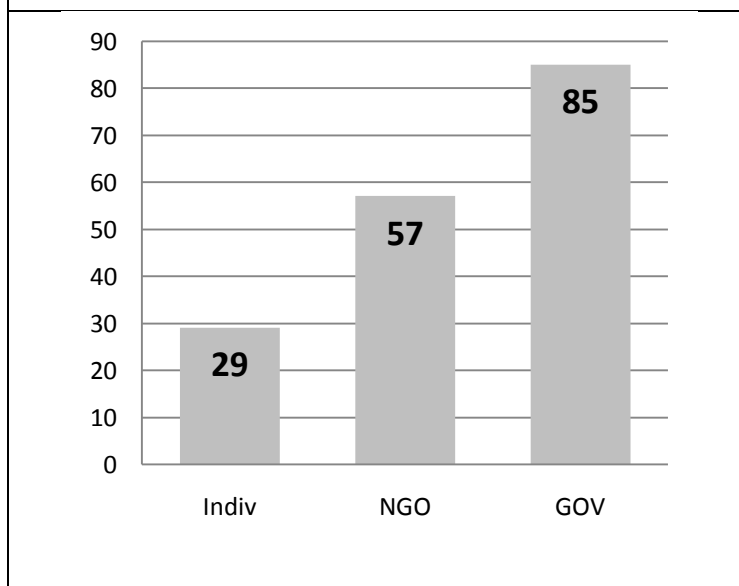
Participant Affiliation

The level of participation by individuals (17 percent) is low compared to other findings from other national forest decision-making research, although the temporal scale for the CE process is compressed relative to other federal land decisions (Manring 2005). Friesema and Culhane, for example, found that 33.5% of all comments on Forest Service EIS projects in South Dakota, Utah, and New Mexico were from unaffiliated concerned citizens (1976). This level of is similar to Teich, Vaughn, & Cortner's finding that 30 percent of all administrative appeals filed between 1997 and 2003 were filed by individuals (2004). These levels contrast with Force and Williams' study (1989:34) that

found participants in Washington and Idaho’s national forest planning represented themselves 57 percent of the time. Furthermore, these findings contrast strongly with Steelman’s (1996) study on participants in the Monongahela National Forest planning process, which showed individual participation accounted for 92 percent of all comments.

Given that more than 83 percent of the commenters from North Carolina were representing interest groups, including government agencies (50%) and NGO’s (33 percent), the process appears to be more suited for organized groups and employees of state or federal agencies (see Table 3). This is consistent with Force and Williams’ (1989:37) study of Washington and Idaho EIS processes, which argued that interest groups were “better prepared to take advantage of participation opportunities, but also the requirements necessary to be involved in public participation programs may bias involvement toward organized participants.”

Table 8. Participation by Representation.



Over half of all participation came from employees of government agencies, including three of the top four most active participants with over 37 percent of all the comments (see Table 8). Government wildlife agencies are directed by state and federal law to comment on projects in U.S. National Forests, including formal consultation when there are federally listed threatened or endangered species (e.g. Endangered Species Act, (7 U.S.C. § 136, 16 U.S.C. § 1531 et seq., Section Seven). Until the Healthy Forest Initiative, however, rare species occurrences were considered extraordinary circumstances that triggered an EA under NEPA, requiring substantial environmental analysis and formal consultation (see Chapter Eight). Further analysis of participation in CE's by wildlife agencies before the HFI, as well as comments on EA's, may explain more about the high proportion of these groups in the CE projects in North Carolina.

Table 9. Interest Groups by number of comments made on vegetation management CE projects in North Carolina, January 1, 2003, through December 31, 2008.

Affiliation	Ranking	Number	Percent
North Carolina Wildlife Resources Commission	1	30	17.34%
Unaffiliated Individuals	2	29	16.76%
United States Fish and Wildlife Service	3	20	11.56%
North Carolina Natural Heritage Program	4	14	8.09%
Southern Appalachian Biodiversity Project	5	12	6.94%
North Carolina Forest Service	6	9	5.20%
Appalachian Trail Conference	7	8	4.62%
Mountain High Hikers	8	7	4.05%
Natural Resources Conservation Service	9	7	4.05%
Sierra Club Group	10	6	3.47%
National Wild Turkey Federation	11	5	2.89%
North Carolina WildLaw	12	4	2.31%
Western North Carolina Alliance	13	4	2.31%
Eastern Band of Cherokee	14	3	1.73%
Ruffed Grouse Society	15	3	1.73%
Southern Appalachian Forest Coalition	16	2	1.16%
North Carolina Div of Water Quality	17	2	1.16%
Southern Appalachian Multiple Use Council	18	2	1.16%
Appalachian Trail Riders	19	1	0.58%
Hot Springs Mountain Club	20	1	0.58%
NC Department of Cultural Resources	21	1	0.58%
North Carolina Division of Coastal Management	22	1	0.58%
The Nature Conservancy	23	1	0.58%
Trout Unlimited	24	1	0.58%

Participation by NGO's accounted for one-third of all comments. Four of the top ten most active participants were NGO's with interests in ecological forestry (Southern Appalachian Biodiversity Project and Sierra Club) or recreation (Appalachian Trail Conference and Mountain High Hikers) who accounted for over 13 percent of all public comments. Given this study's interest in different democratic theories, and especially

the influence of citizen groups on Forest Service processes, identifying NGO participation (33 percent) offers a more reliable reading of public participation than descriptions of affiliation defined broadly to include government agencies. While some research of national forest participants and processes combined NGO's and government agencies, including Force and Williams (1989) and Steelman (1996), others (Cheng & Mattor 2006) isolate "local government" participation from other identified interests. This study includes an analysis using both interpretations of interest groups.

Interest Identification

Ecological Forestry accounted for interests identified by individuals, NGO's, and government agencies in 49 percent (n = 83) of all comments. State and federal agencies identified ecological forestry interests 30 percent of the time (n = 52), and NGO's and individuals accounted for 18 percent (n = 30). These findings are similar to Germain et al.'s study of appeals nationwide from 1993 through 1995, which recorded 63 percent of all appellants (2001) represented "environmental" interests. The portion of commenters with ecological forestry in North Carolina CE projects was double what Friesema and Culhane found in their study (1976:350). In their study, Friesema and Culhane combined "environmental, conservationist, preservationists, and sportsmen" together to show the group accounted for over 26 percent of comments during the EIS processes. Force and Williams also found 27 percent of commenters in their study had "preservation or environmental interests," and "had lower incomes, were Democrats or independents, held moderate or liberal political beliefs [and] had some education beyond a baccalaureate degree" (1989:34).

In contrast, Steelman only found three percent of the commenters were identified with environmental organizations, although “unidentified” and “other” groups accounted for 78.86% of all comments, which may account for the low number of identified interests in her study by any group. “The relative absence of interest groups, however, indicates that there were fewer interest groups involved in the MNF planning process than in other National Forests” (1996:208). The MNF example contrasts with the North Carolina’s national forests, which had 23 different NGO and government agencies participating in the process.

Of all the NGO’s who commented, only one was a commodity forestry group from the Southern Appalachian Multiple Use Council (SAMUC), and the North Carolina Forest Service was the only state agency that expressed a commodity forestry interest in the federal forests, providing eight comments (4.68%). When combining the two unaffiliated individuals and two NGO comments supporting commodity forestry, commodity forestry interests accounted for only seven percent of all the comments. This is similar to findings by Steelman, (1996:208), who found only one percent of commenters with commodity forestry interests in the Monongahela National Forest Planning process. Teich, Vaughn, and Cortner also found zero (n=0) commodity forest NGO’s among the top appellants to Forest Service NEPA projects (2004:17).

With seven percent of participation by commercial forestry interests, this level for North Carolina is lower than what Friesema and Culhane (1976) found for consumptive users (17 percent) in comments for EIS projects in 1973. Force and Williams also found 21 percent of the participants in their study identifying with

“timber” interests were typically “male, had a high income, were Republican, and held conservative beliefs... [and] had some education beyond high school” (1989:34).

Locus of Commenters

Commenters in this study had North Carolina residency 95 percent of the time, while out-of-state comments came from fewer than five percent of the participants. These findings are consistent with Steelman’s findings that nearly 92 percent of comments had in-state addresses (1996:208), and contrasts with Blahna and Yonts-Shepard’s study showing an equal mix of public comments among state, regional, and national levels (1989).

The high levels of participation in this North Carolina case study may explain the corresponding level of participation by individuals and NGO’s, which combined to share over 50 percent of the total comments. This is consistent with Sirianni and Friedland’s argument that direct participation often occurs at the local level (1995), and Abel and Stephan’s claim that independent citizens may become involved in local issues given the proximity of “direct impacts on their neighborhoods and families” (617).

This issue about the relationship between locality and direct citizen participation is useful for developing a better understanding of participation as it is commonly debated in the literature (Escovar, Cox 2006:291, McCloskey, Coggins 1999:807; McCarthy 2002, 2005; McCarthy & Purdham 2004). Many scholars argue local participation in federal land management produces better decisions, including Wondolleck and Yaffee (2000) who promote more collaborative forms of decision-making to incorporate local participation. In Steelman’s study, she argued the

substantial level of local participation (92 percent) “may partly explain why consensus was able to be reached in the MNF planning process” due to the fact that participants held a greater degree of shared values (1996:209).

Others warn against an uncritical move toward devolution and deregulation favoring local control, given the power of commercial interests in dominating agency decisions (Coggins 1999; McCloskey 2003, McCarthy 2005). McCarthy, for example, addressed the tendency for local or community to be “structured by hegemonic neoliberal ideas, making community forestry in this context supplementary, rather than oppositional, to neoliberal restructurings.” In other words, McCarthy warns community-based forestry risks cooptation by powerful commercial interests. Abel and Stephan also provide an analysis of local control that questioned whether “mechanisms for participation that are nominally participatory may instead be more conducive to elite or pluralistic participation” (2000:618). In short, local participation does not automatically translate into more democratic control by independent citizens instead of powerful commercial interests.

The next sections of this chapter address *what* these predominantly in-state participants (95 percent) with ecological interest (59 percent) said about CE management projects in North Carolina and *how* their comments were delivered. Finally, this chapter includes an analysis of the patterns and relationships that were present during this “pre-decisional” process decisions, using chi-square tests. These findings are important for understanding the final decisions and subsequent outcomes

for site-specific management in North Carolina's national forests discussed in Chapter Eight.

WHAT PARTICIPANTS SAID

The responses to vegetative management CE projects in North Carolina were critical 58 percent of the time (n=99) and uncritical 42 percent of the time (n=72). Additionally, comments were almost equally distributed between support (28 percent), opposition (23 percent), and mixed (35 percent), while neutral comments were made only 14 percent of the time. This distribution of respondent attitudes shifts only slightly when isolating for participant types among government agencies, NGO's, and individuals (See Table 10). Further inspection shows differences in attitudes among participant types, with government agencies filing the most supportive comments, NGO's most likely to oppose projects, and individuals showing little deviation in attitudes toward the different projects. Finally, commercial logging was the most common source of concern among participants (27 percent), and potential effects of agency actions on species and habitat accounted for the most common issue commenters raised about the projects (46 percent). Table 5 summarizes *what* participants said.

Table 10. What Participants Said.						
Type of Comment	UNCRITICAL		CRITICAL			
171	42.11% (72)		58% (99)			
Total Response to Projects	Support	Neutral	Mixed		Oppose	
n=171	28.07% (48)	14.04% (24)	35.09% (60)		22.81% (39)	
Individual Response (n=29)	5.26% (9)	0.00% (0)	5.26% (9)		6.43% (11)	
NGO Response n=57	8.19% (14)	4.68% (8)	9.94% (17)		10.53% (18)	
Government Agency Response N=85	14.62% (25)	9.96% (16)	19.88% (34)		5.85% (10)	
Source of Concern	None Mentioned	Other	Roads	Thinning	Logging	Prescribed Burn
n=171	42.11% (72)	2.95% (5)	2.92% (5)	17.54% (30)	26.90% (46)	7.60% (13)
Potential Effect	None Mentioned	Other	Ecological Forestry	Aesthetic	Recreation/Hunting	Scientific
n=171	42.11% (72)	3.51% (6)	46.20% (79)	0.58% (1)	5.85% (10)	1.75% (3)

Participant Attitudes: Response to Projects

Analysis of the respondent's attitudes demonstrates that Supportive and Opposing comments were distributed within one standard deviation (7.68 percent) from the average (25 percent), while Mixed comments totaled 35 percent of the comments, or more than one standard deviation from the average number of commenters. This

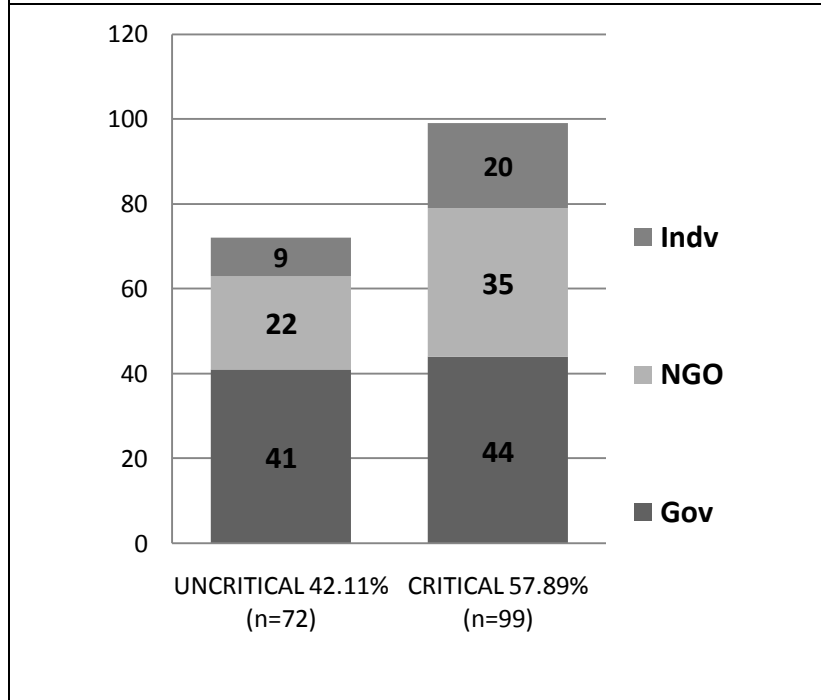
level of Mixed commenting is similar to Steelman's study that found 45 percent of commenters expressed both support and opposition (1996). This is noteworthy, given Steelman's argument that "Comments that were mixed in their response to the [MNF] Draft Plan provided more information to the planning staff" (1996:213). Chapter Nine includes a discussion of how these findings are used to define the Healthy Forest Initiative based on competing democratic theories in the literature (elite, pluralist, deliberative, and agonistic).

Important for this study was an analysis of the objections—or conflict—surrounding the projects (see Table 10). Given the substantial portion of Mixed comments submitted to the Forest Service (35%), grouping comments based on objections, as well as counting the individual points of contention and support, provides a better understanding to the total level of opposition (or conflict) expressed about the projects (Stankey 1972). Additionally, identifying the sources of concern about potential effects provides insight into the precise site-specific issues raised for each project (Steelman 1996).

As Stankey argued in his paper on content analysis of decision-making (1972:151), an analysis of critical comments helps "to provide administrators with an idea of the extent to which respondents objected to specific management details for an alternative they otherwise favored." As discussed in Chapter Two, conflict is a central focus of different democratic theories used in this dissertation to analyze the Healthy Forest Initiative, which was itself proposed as a solution to ongoing controversy and "process predicaments" (Bosworth 2002).

Grouping responses to the projects based on the presence of any negative comments or objections showed 58 percent of the comments were oppositional (Opposed and Mixed). Likewise, Supporting and Neutral comments can be grouped according to the logic that neither identified concerns or potential issues with the projects (See Table 10). The comments grouped by a lack of any objections (Supporting or Neutral) toward the projects accounted for 42 percent of all projects (see Table 11, which is consistent with the findings in Table 5 showing the number of commenters who identified no concerns or potential issues for the projects (42 percent). Focusing on specific objections allows for an appraisal of the public's overall attitude toward the projects and provides administrators with additional information about which to potentially alter their decisions (Stankey 1972).

Table 11. Response to the Projects by Criticism from Individuals.



Sources of Concern

Commenters who identified problems related to commercial logging as their primary concern accounted for nearly 27 percent (n=46) of all comments, and almost half of all critical comments (n=99). This is similar to Teich et al.'s 2004 study of administrative appeals nationwide showed that "Timber" received the greatest level of objections (31 percent).

Combed with conflict surrounding pre-commercial thinning (n=30), these two commercial forestry categories accounted for over 44 percent of all potential concerns

expressed, and 75 percent of all critical comments. Additionally, given the argument that roads relate to logging access and industrial tree farming, commercial forestry was the only extractive commodity use identified among mining, grazing, oil and gas drilling, and land exchanges.

In their 2006 study of Colorado's national forests, Cheng and Mattor found 44 percent of participants held concerns relating to coal, motorized recreation, ranching, and private land inholder's (private land within the boundaries of the national forest). Although the Forest Service's Region 8 includes a range of these extractive commodity uses, internal Forest Service records (PAL) showed the agency proposed no grazing, mining, drilling, or land exchanges as CE's in North Carolina from 2003 through 2008 (Forest Supervisors Office 2009, personal communication). These categories were not raised in any of the comments in this North Carolina study.

Potential Effects

The most common potential effect identified by participants related to ecological forestry issues (42 percent), which accounted for over 80 percent of all critical comments. Steelman also found a substantial portion (60 percent) of comments addressed potential effects on wildlife from the Forest Service's proposed MNF plan, which she attributed to the issues emphasized in public education campaigns by interest groups. As discussed below, projects with rare species were more likely to receive public comments, even in the absence of organized education campaigns or access to Forest Service surveys documenting species occurrences.

Commenters who worried about the potential effects of commercial logging on rare species and their habitat (32 percent) delivered the largest portion of criticisms received by the Forest Service in North Carolina. The next biggest group of objections addressed the potential effects of pre-commercial thinning on rare species and habitats (28 percent), which, combined with logging, showed that 60 percent of all criticisms addressed issues relating to commercial forestry. This is similar to Steelman's findings that 60 percent of comments shared a concern about logging and associated practices on wildlife resources. In short, more than one out of every three comments (35 percent) addressed the potential effects of different forms of commercial forestry on species diversity and ecosystems.

Subcategories

In addition to primary sources of concern or potential effects, another level of analysis counted multiple issues made in each comment to understand *what* participants said (Steelman 1996:214). By a wide margin, the majority of all issues raised were objections (84 percent), which is consistent with previous analysis that the majority of comments were critical (see Table 6). Calculating multiple issues also shows that, on average, commenters found only .77 issues of support compared to nearly four objections on average for each project (see Table 12).

Table 12. Overview Of All Supporting And Opposing Issues Raised In Comments.		
Total Issues Addressed (n=801)	Support	Objections
	16.30% (132)	83.52% (669)
Average Issue Per Comment (n=171)	0.77	3.91

Recording multiple issues also revealed concerns beyond the primary categories raised by the commenters (see Table13). More than any subcategory, for example, commenters criticized the lack of disclosure by the Forest Service (6 percent), even though it was never a primary concern of any individual commenter. In other words, while process issues for a specific project never emerged as a commenter’s primary issue, accounting for multiple issues shows that disclosure was identified by more commenters than any specific subcategory.

Table 13. Overview Of Subcategories Combining Sources Of Concern And Potential Effects By Total Criticisms.		
SUBCATEGORY*	TOTAL**	PERCENT
Disclosure	38	5.69%
Species / Biodiversity	32	4.79%
Sedimentation / Erosion	26	3.89%
Restoration	22	3.29%
Road Construction	21	3.14%
Monoculture	19	2.84%
Surveys	18	2.69%
Invasive Species	17	2.54%
Water	17	2.54%
Plan Compliance	15	2.25%
Longleaf	15	2.25%
Pre-commercial thinning	15	2.25%
Fire Suppression	14	2.10%
* 121 Subcategories		
** Total does not equal 669 because table excludes concerns or issues raised by commenters 1% of the time or less.		

Other studies of public satisfaction with participation in National Forest management have shown that stakeholders expect their contributions will have quantifiable effects on final decisions (Knopp and Caldbeck 1990; Brown and Harris 1992). Germain et al.'s study found "mild dissatisfaction with the overall process," which triggered more confrontation because most participants believed the process was unfair, ineffective, or inefficient (2001:119). Additional process issues in North Carolina combined to account for nearly 19 percent of all subcategories (see Table 14), including concerns regarding documentation (3 percent), project compliance with forest plans under NFMA (3 percent), and the short duration of comment periods (one percent).

Table 14. What Participants Said About Process Subcategories. *		
Process Issue	Total	Percentage
Disclosure	38	5.69%
Documentation	18	2.69%
Plan Compliance	15	2.25%
Comment Time	9	1.35%
Monitoring	8	1.20%
Categorical Exclusion	7	1.05%
Notification	7	1.05%
Inclusive	4	0.60%
Stakeholders	4	0.60%
Restart Process	4	0.60%
Alternatives	3	0.45%
Collaboration	3	0.45%
Appeal Rights	2	0.30%
Open-Ended Contract	2	0.30%
Interest Diversity	1	0.15%
* Commenters could have identified multiple subcategories		

HOW PARTICIPANTS COMMENTED

When participants commented on Forest Service HFI projects in North Carolina, they usually submitted a one-page, typed letter addressing one or two topics. Table 10 summarizes *how* comments were submitted against HFI projects in North Carolina.

Table 15. How Participants Commented.					
Vehicle	Letter			Verbal	
N=171	157 91.81%			14 8.19%	
Style	Handwritten	Typed		Form Letter	Other
N=171	4.09% (7)	88.30% (151)		0.00% (0)	7.60% (13)
Length	>150 words	150-249		250-499	500+
N=171	70 40.94%	45 26.32%		31 18.13%	25 14.62%
Detail	No Detail	Generalized	1-2 topics	2-4 topics	5+ topics
N=171	26 15.20%	25 14.62%	63 36.84%	18 10.53%	39 22.81%

Comment Vehicle

Commenters were more likely to mail a letter (92 percent) than call or speak directly with agency personnel (eight percent). This is similar to Steelman's finding written comments 90 percent of the time, and Friesema and Culhane's (1976:350) study showing 63 percent of all comments were written. Again, although email was not available to many of the commenters from previous Forest Service decisions, the more likely explanation for the lack of verbal communication may be due to the length and number of detailed issues commenters entered into the public record (discussed below).

Another explanation of why there were only eight verbal comments may also relate to perceived agency bias toward commodity interests. There is a longstanding criticism in the conservation literature that commercial groups are traditionally the

beneficiaries of the Forest Service decisions (Bultena and John 1972; Robbins 1985; Clary 1986; Twight and Lyden 1990). This is consistent with Friesema and Culhane's finding that non-commodity groups were likely to document their comments in writing, while verbal comments were most likely filed by commodity industries. Although interesting, determining why written communication was responsible for the largest portion of comments is impossible to ascertain from the available data.

Comment Style

Unlike findings in other research (Clark & Stankey 1976; Steelman 1996), content analysis of comments from North Carolina found no form letters (n=0). In contrast, Steelman found 23 percent of comments in the 1993 Monongahela Forest Planning process were submitted as form letters (1996:211), while Clark and Stankey found as much as 32 percent of comments on EIS projects were form letters.

This vehicle for commenting is generally available if interest groups have the capacity to produce campaign materials and mail them to constituencies in time to make comment deadlines. With the shorter (30-day) pre-decisional comment process, HFI projects in North Carolina provided little opportunity for organized letter-writing campaigns. Likewise, groups apparently had enough time during the longer forest planning process for the MNF (90-day), as Steelman found several different form letters in the public record. Of course, form letters in 1993 operated under different constraints compared to internet-based participation today. Although many of the typed letters from North Carolina were submitted electronically, it was impossible to get a precise count of the digital comments given the lack of information in the project files.

Comment Length and Detail

While many of the comments were equal to or less than one page in *Length* (41 percent), a majority wrote more, which explains the substantial level of *Detail* made by commenters who identified specific project issues (70 percent) compared to commenters with little or no discussion (30 percent) (see Table 15). As the analysis of subcategories showed, commenters found an average of less than one issue of support and nearly four objections per project (See table 12). This difference shows the public was more likely to address objections in greater detail than commenters addressing issues of support. Given the large portion of comments with documented objections (58 percent), as well as the high percentage of criticisms lodged per comment relative to supporting issues, these findings demonstrate how the public was most likely to submit detailed objections against CE projects.

This may be explained by the fact that project designs are already outlined in Forest Service “scoping letters” describing the proposal, albeit with limited site-specific analysis. Coincidentally, the Forest Service does not include findings from their Biological and Archeological Evaluations, which document extraordinary circumstances present in the project area (see discussion in Chapter Six and analysis in Chapter Eight). It is also unclear if surveys are conducted before scoping letters are sent to the public. Such disclosure might change or intensify a commenter’s attitude toward a project, given their reaction to documentation of sensitive and federally listed endangered, threatened, and sensitive species. This argument is buttressed by the fact that the

subcategory identified the most by participants related to problems with Forest Service disclosure (n=38).

RELATIONSHIPS BETWEEN VARIABLES OF INTEREST: "WHO SAID WHAT?"

As the previous section provided a description of the participants and comments regarding HFI projects in North Carolina, the next level of analysis explores the patterns and relationships between the selected variables of interest. The response and explanatory variables (dependent and independent variables) investigated in this section offer a glimpse into the significant influences and processes behind implementation of the Bush Administration's Healthy Forest Initiative.

The contingency tables explored in this section identified the attitude response variable (*What*) to representation, interest identification, and affiliation explanatory variables (*Who*). Chi-square tests were used to examine the relationships for levels of significance, or evidence for rejecting independence, between the response and explanatory variables.

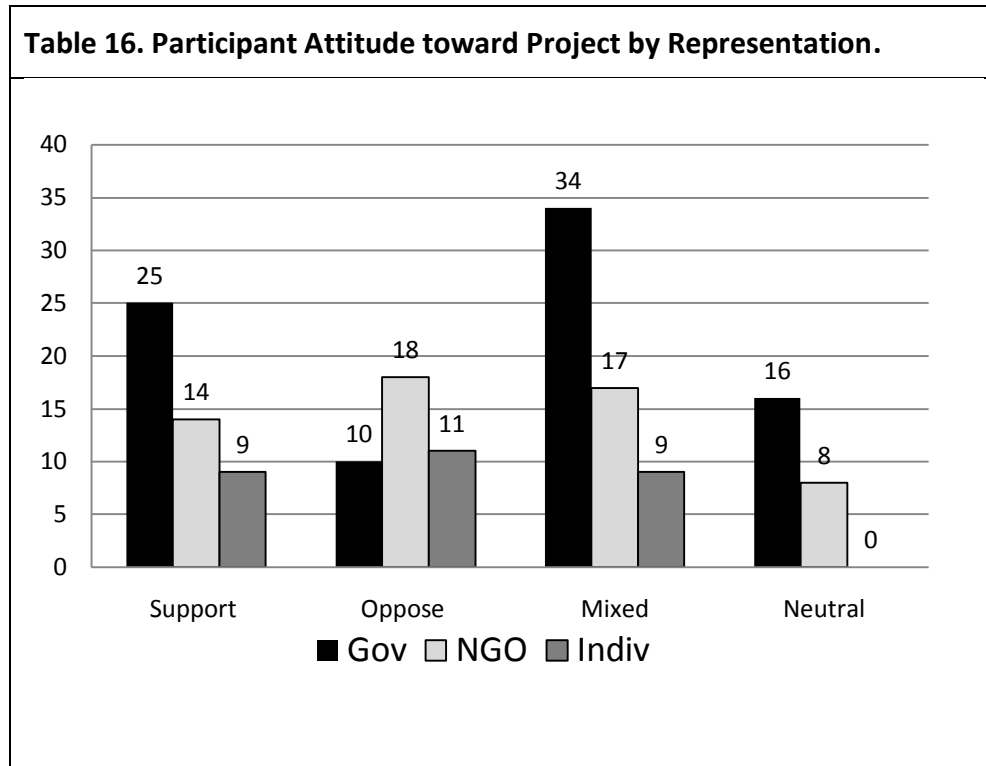
Additional analysis of the chi-square statistic is conducted using the standardized residuals to explore precisely which observations in the contingency tables deviated from expected frequencies and are, therefore, responsible for rejecting the independence model. A null hypothesis holds that the explanatory and response variable found in the data are completely independent and are therefore indistinguishable from a random pattern. If the chi-square test fails to uphold the

independence model, standardized residuals are then used to determine which values are major contributors to rejecting the null hypothesis.

After creating a contingency table in Excel, they are run through the “R” (R Support Team 2009) software to produce a chi-square statistic. In addition to the chi-square statistic outputs, R can produce the residual outputs. If the chi-square statistic is significant, the residuals greater than 2.00 show the researcher which parts of the contingency table led to the significance. Finally, once the observations are identified, comparisons are made with Concern and Potential Effect, participant characteristics, and other evidence to explain the significance found in the table.

Participant Attitude by Representation

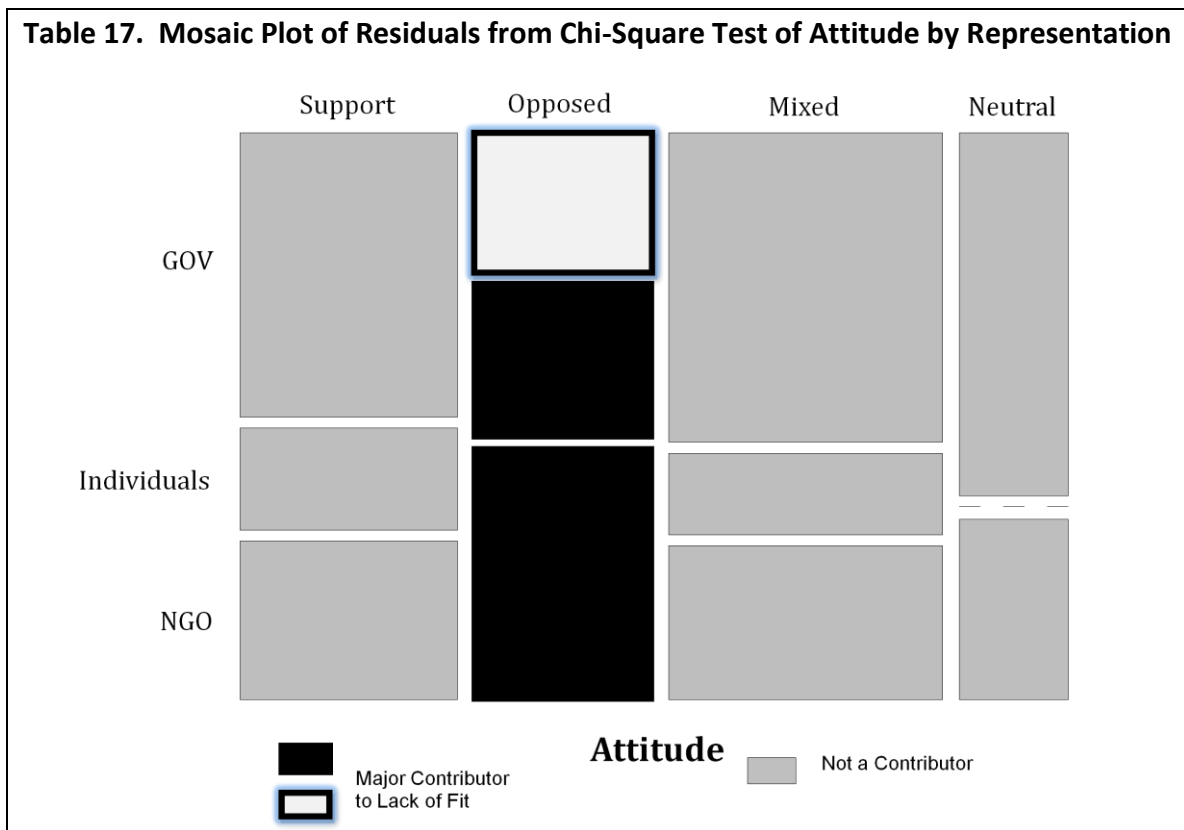
The first test explored the relationships between participant attitudes (e.g., “support,” oppose”) and representation from government agencies, NGO’s, and individuals (See Table 15). In this case, a chi-square test provided evidence for rejecting the independent model, ($\chi^2 = 16.6297$; p-value = 0.00984). The next step is to analyze the precise residuals in the contingency table to determine which elements contributed to rejecting a null hypothesis of no significant relationship between attitude and representation (see Table 16). In this case, the all three response variables (individuals, NGO’s, and government agencies) were found to be important influences in predicting participant opposition to the projects.



First, opposing comments from government participants were exceptionally small relative to the other response variables. Based on the observations, the chi-square test predicted approximately 19 comments from government employees to the Forest Service projects. Instead, there were only 10.

One explanation why government groups were disinclined to oppose Forest Service projects relates to the disproportionately high level of participation by the NC Wildlife Resources Commission (NCWRC) (See Table 9). This agency's dominance in the process, with 17 percent of all comments, may explain the conspicuously low level of opposition, considering NCWRC submitted only one opposing comment out of 30 (See Table 17). NCWRC was also the only agency to publicly support the use of the HFI's new

expedited categorical exclusion process, stating in several comments that land management “should go forward under this rule without documentation in an environmental assessment or environmental impact statement” (McHenry 2005:2, on file with author). This close affinity for Forest Service policies for management and decision-making helps explain the relationship between government agencies and low opposition present in this test.



High levels of opposition from individuals and NGO’s were the next important findings from the chi-square test, which provides another explanation for rejecting the independence model. Based on the expected values for the individual (6.6 comments)

and NGO (13 comments), these two explanatory variables resulted in higher opposition to the Forest Service projects (11 and 18, respectively) than predicted by an independence model.

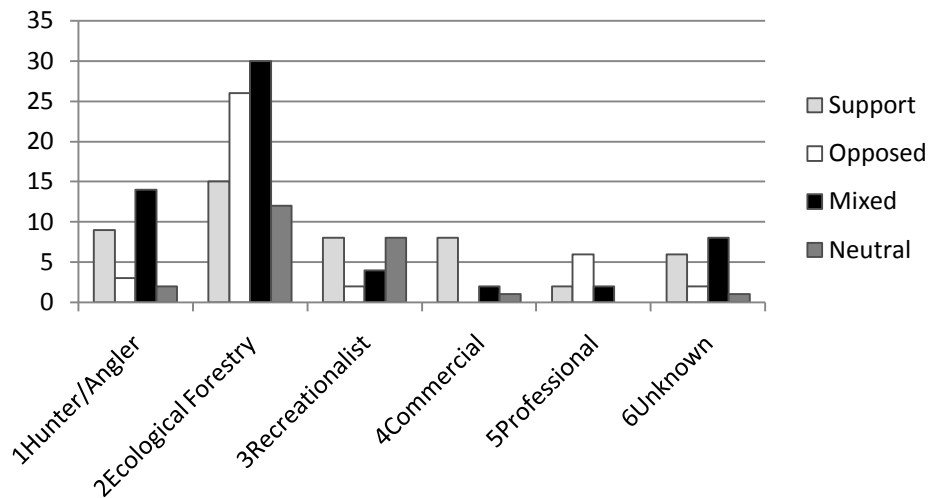
The higher than expected level of opposition from individuals may be explained in part by the fact that these participants were primarily concerned with issues relating to commercial forestry 91 percent of the time. NGO's also opposed projects based concerns over commercial forests 66 percents of the time. Furthermore, individuals and NGO's who criticized Forest Service projects addressed ecological forestry and potential effects on species and habitat 78 percent of the time.

As the next chapter explains, the policy and project characteristics of Forest Service management proposals demonstrates that projects were designed with a substantial commercial forestry orientation. Therefore, the high level of opposition from individuals and NGO's is most likely due to the conflict between the public's valuation of ecological forestry and the substantial commercial forestry bias (described in Chapter Four and Five) of HFI projects in North Carolina from 2003 through 2008.

Attitude by Interest Identification

The next explanatory variable tested in this section addressed participant's interest identification as a predictor for the attitude response variable. In this case, the chi-square test found a level of significance ($X^2 = 44.7624$, $p\text{-value} = 8.347e-05$) present in the contingency table, leading to the rejection of the independence model.

Table 18. Overview of Participant Attitude by Interest Identification.



Commercial Forestry Interests

The most striking finding is the high level of support for HFI projects from participants with an interest in commercial forestry. In this case, those who identified with commercial forestry interests (11 comments) were twice as likely to submit supporting comments as expected under a model of independence. These participants also had less opposition to the projects than predicted in the chi-square test.

Again, this support by participants may be a logical reaction to commercial forestry characteristics of the HFI projects proposed in North Carolina (see Chapter Eight). Unlike other identified interests, those with preferences for commercial forestry submitted zero (n=0) opposition to the Forest Service.

In one case, for example, evidence from the project file for the Bald Mountain Salvage Logging Project shows that the Forest Service engaged in planning with a commercial forestry NGO (Southern Appalachian Multiple Use Council) before the project was disclosed to the general public. The Forest Service also included those with commercial forestry interests in early, private planning for the Fires Creek Stewardship Project, although regulations call for collaborative planning. Stewardship contracting is required by the Forest Service Handbook (FSH 61.12b) to identify and engage all key stakeholders in collaborative planning from project design through implementation and monitoring (see Chapter Six). This willingness to accommodate commercial forestry interests may also explain the relatively low level of formal participation by individuals with an interest in commercial forestry (less than 7 percent), the lack of formal participation by commercial forestry NGO's (1 percent of all comments), and the absence of any documented process concerns identified by commercial forestry groups.

Recreational

The next most important finding relates to the higher than expected level of neutral comments from recreational groups. The test found more than twice as many neutral comments from recreational groups than would be expected under an independent model. This is primarily explained by the fact that the Appalachian Trail Conference (ATC), which ranked seventh among all commenting groups, submitted neutral comments 75 percent of the time. Given fact that the ATC submitted so many neutral comments, and only two critical comments, it is clear this group considered HFI

projects in North Carolina only a marginal concern for the experience of those hiking the Appalachian Trail.

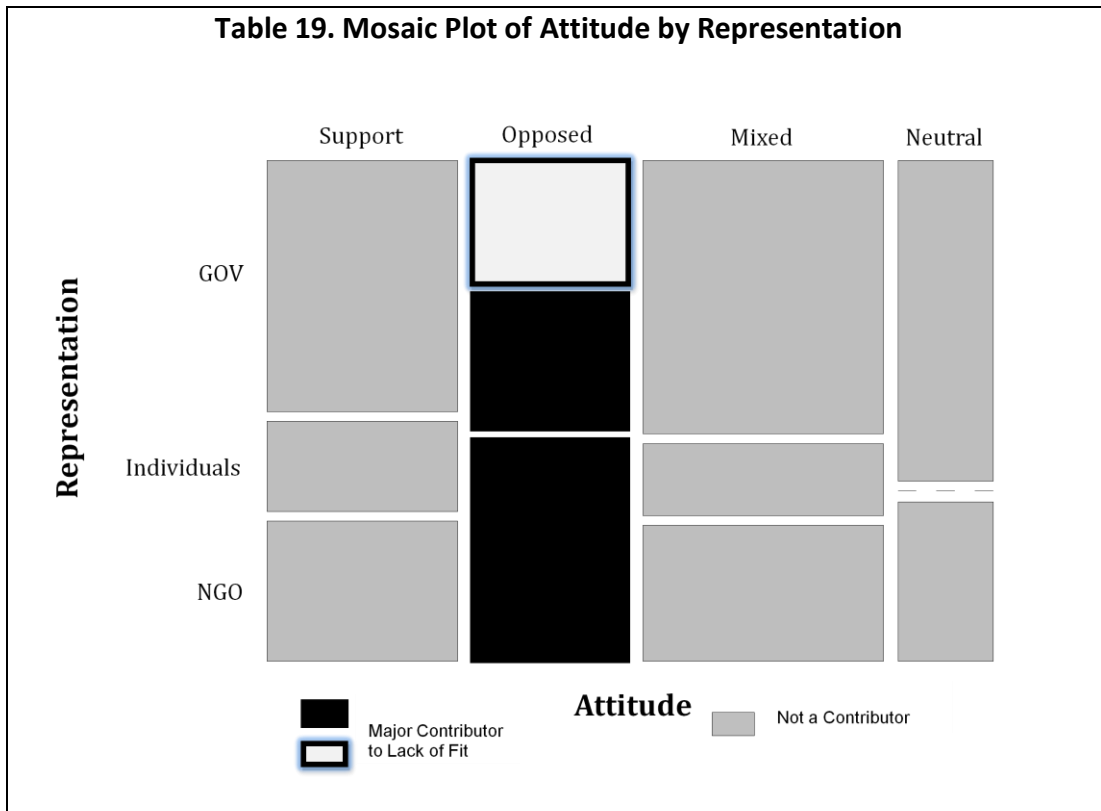
Professional

Another important finding from the chi-square test was the unpredicted level of opposition from professional groups. In this case, those identified with these interests opposed projects more than three times the predicted value based on an independent model. Professional interests include those with ongoing scientific or cultural research in the national forests.

One explanation for rejecting the independence model relates to the Forest Service “Dillingham Salvage” logging project proposed in the Pisgah National Forest, which triggered half of all opposition by participants with professional interests in the forests. This Forest Service proposal included commercial logging in the Big Ivey and Corner Rock area of the northern slope of the Craggy Mountains, which contained field plots for UNCA-sponsored research approved by the Forest Service and funded by National Science Foundation. As one commenter stated, “I use that area of the National Forest extensively for the many classes I teach at UNCA and in undergraduate research projects. I have carried out extensive off-trail botanical reconnaissance in that area and believe that area to be the highest quality natural area in the Pisgah National Forest, containing the largest percentage of mature, diverse ‘old growth’ forests remaining in the area” (Clark 2004:1, on file with author).

Ecological Forestry

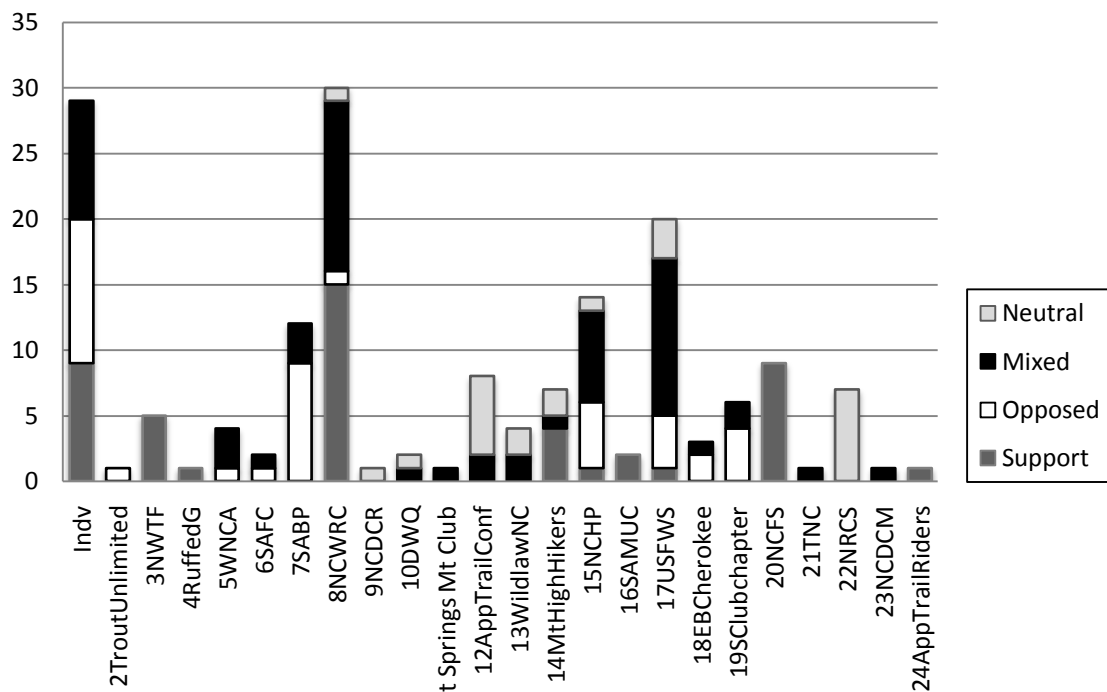
Another significant finding from the chi-square test relates to participants with an identified interest in ecological forestry. In this case, comments from these participants had levels of support and opposition deviating with values of 64 percent less support and 137 percent more than predicted by an independence model. Given that ecological forestry was identified more than any other interest in this study, with almost half of all comments, it is noteworthy that this group accounted for 67 percent of opposed comments. Again, as discussed in Chapter Eight, the commercial forestry orientation of the HFI projects was most likely responsible for the significant levels of participation by interests who primarily identified with ecological forestry.



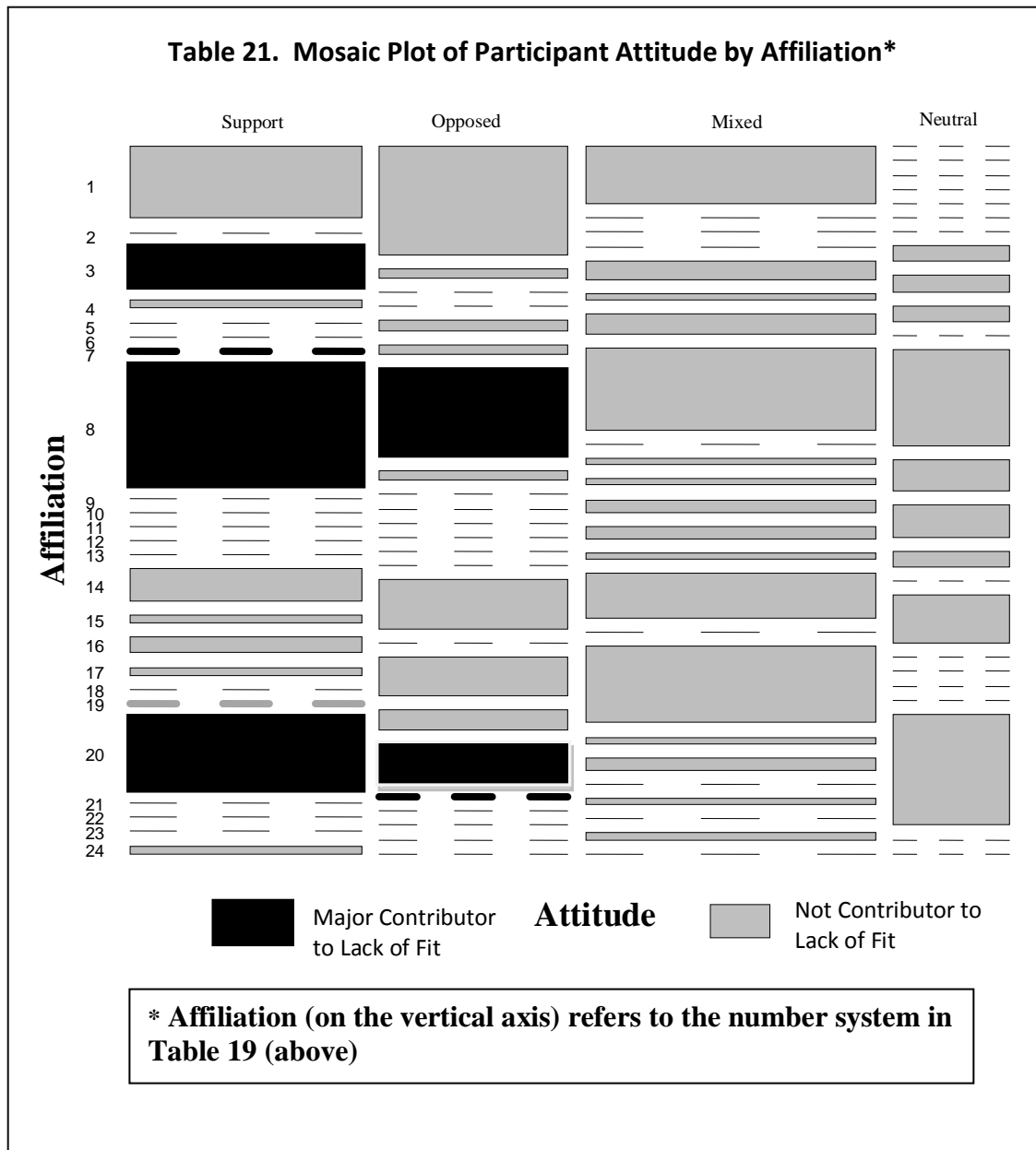
Participant Attitude by Affiliation

The final test investigated the relationship between participant attitudes and affiliation (see Table 20). This chi-square test showed the highest level of significance among the three explored in this chapter ($X^2 = 212.7219$, $p\text{-value} < 2.2e-16$), with several explanatory variables contributing to the rejection of the model of independence.

Table 20. Overview of Participant Attitude by Affiliation.



To understand which values made a major contribution to the chi-square result (see Table 21), it is important to begin with the level of support from the North Carolina Forest Service (NCFS), which is separate from the U.S. Forest Service. Except for neutral comments by the Natural Resources Conservation Service, the NCFS's support (n=9) was the greatest contributor toward rejecting the null hypothesis. Without expressing any attitude other than support, the observed values from the NCFS were triple that expected in an independent model, representing the highest standardized residual (4.07) found in this chi-square test. In addition to stating no concern or potential effect relating to the HFI projects, this participant usually submitted comments less than one page in length discussing one or two topics. This suggests the most significant contribution to the chi-square statistic came from short comments of support from the NCFS.



The next explanation for rejecting the null hypothesis relates to opposition from the Southern Appalachian Biodiversity Project (SABP), which had the second highest residual value of all explanatory variables. With nine opposing comments, these observed values were three times what would be predicted under the null hypothesis. The high level of criticism from this NGO is consistent with findings from Teich et al. (2004), which found SABP was the leading appellant of Forest Service decisions in the

Southeast, and the 14th most active appellant nationally from 1997 through 2002. Also noteworthy was SABP's lack of full support for any project, although the group did submit mixed comments for three projects. SABP was also the most active NGO, and the fourth most active participant found in this study (see Table 9).

Like SABP, the Sierra Club's higher than predicted opposition to the HFI projects also contributed to the chi-square result. This group showed no full support for any project and only mixed support for a third of the projects it commented on. The Sierra Club was the second most active NGO with a primary interest in ecological forestry. Not surprisingly, 80 percent of the Sierra Club's objections were against Forest Service commercial logging projects, with greater opposition occurring on the Croatan National Forest by the "Cypress" group of the Club. As the next chapter explains, pre-commercial thinning on the Croatan National Forest was the second most common management type proposed by the Forest Service in North Carolina from 2003 through 2008.

Another major group contributing to the rejection of the null hypothesis of independence was the National Wild Turkey Federation (NWTF). Similar to the NCFS, this group supported every project it commented on (n=5). Of the five different decisions the NWTF addressed, four were insect-related salvage logging projects. The fifth was the Fires Creek project that included commercial logging proposals for portions of the Tusquitee Bald Roadless Area (See Chapter 7). The NWTF and another hunting organization (the Ruffed Grouse Society) were the only NGO's to offer uncritical support the Fires Creek project.

Every comment from the NWTF was half a page, and two were limited to one sentence, stating “NWTF fully approves of this project” (TM Hasell 2004, on file with author). Other comments addressed potential benefits of logging for hunting, which they argued provides early succession habitat (recent clearcuts) for game species (see Chapter Eight). In addition to these claimed ecological benefits, the NWTF argued logging would provide access and “walk-in” opportunities for wild-turkey and ruffed grouse hunting.

Finally, as discussed in a previous section (see Attitude by Representation), the North Carolina Wildlife Resource Commission (NCWRC) contributed to the chi-square results due to their high level of support, and low level of opposition to the Forest Service’s proposals. Most strikingly, the observed lack of opposition by the NCWRC was six times predicted values under the null hypothesis. As the participant with the highest level of comments (n=32), the NCWRC’s level of opposition (one comment) was conspicuously low. As addressed in the final chapter, this may explain why the Forest Service went forward with every project it proposed as planned, with little evidence of any modification based on criticism from the public.

Summary of Chi-Square Tests

In addition to the descriptive statistics addressed in the beginning of this chapter, this section provided an analysis of the relationships between selected variables of interest. These included response variables (Representative, Interest Identification, and Affiliation), and explanatory variables (Attitude). In this case, all three tests provided evidence for rejecting models of independence, as summarized by

the significant chi-square statistics in Table 22. The explanations for these significant chi-square statistics were also addressed through an analysis of the groups and attitudes were contributed most to the patterns relevant to the rejection of independent models. The following section provides another level of analysis to address different patterns (predictors of participation) to provide further evidence used to evaluate which democratic theory best describes the decision-making process present under the Bush Administration's Healthy Forest Initiative.

Table 22. Chi-Squared Tests: Representation By Attitude.			
	Representation	Interest Identification	Affiliation
Attitude	16.6297; p-value = 0.00984	44.7624, p-value = 8.347e-05	212.7219, p-value = 2.2e-16

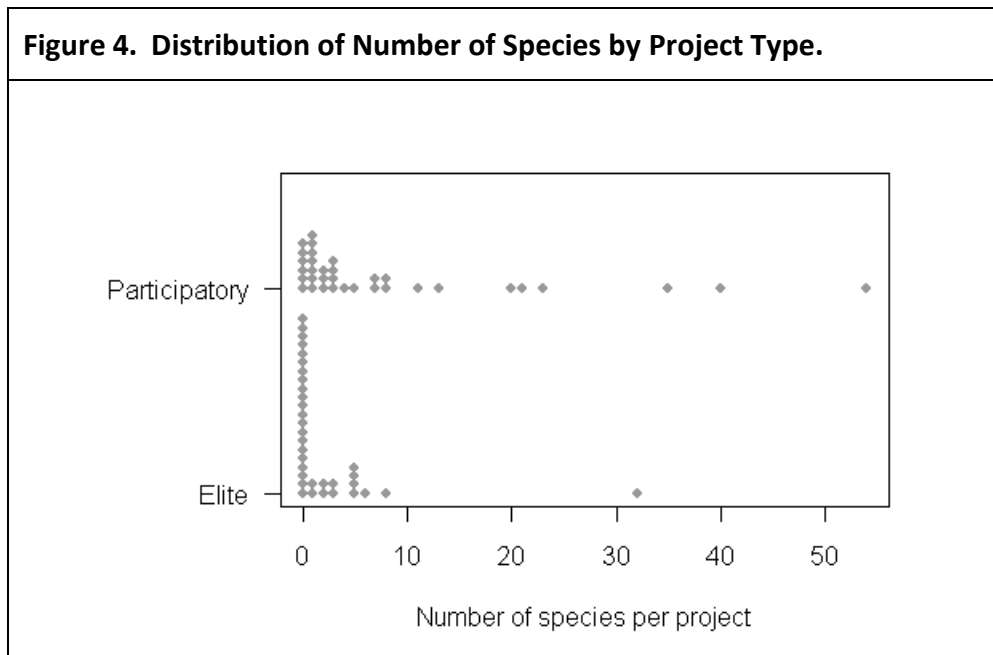
PREDICTORS OF PARTICIPATION

The final statistical testing for this chapter included an analysis of the variables that predict public participation, including acreage and species occurrences in each project. This section used logistic regression models to determine which combination of variables best predicted citizen participation. These include the physical size of the project, number of species in the project, and these two variables in combination. Using an R function (plot.logi.hist) published in the *Bulletin of the ESA* (de la Cruz Rot, 2005), one-predictor models were used to visualize the predictors graphically. To understand how variables act in concert in the same model, predicted probabilities, $\hat{\pi}$, for various predictor combinations can be used to classify an observation's participation type.

These predictors of participation help explain which elements of HFI projects were likely to trigger a reaction to the public. As this section explains, the substantial likelihood of the public to participate in projects with large acreage and high species concentrations demonstrates that the commenters had knowledge about these projects despite the lack of disclosure on behalf of the Forest Service. This finding, explained below, is addressed further in the conclusion and policy implications sections in Chapter Nine.

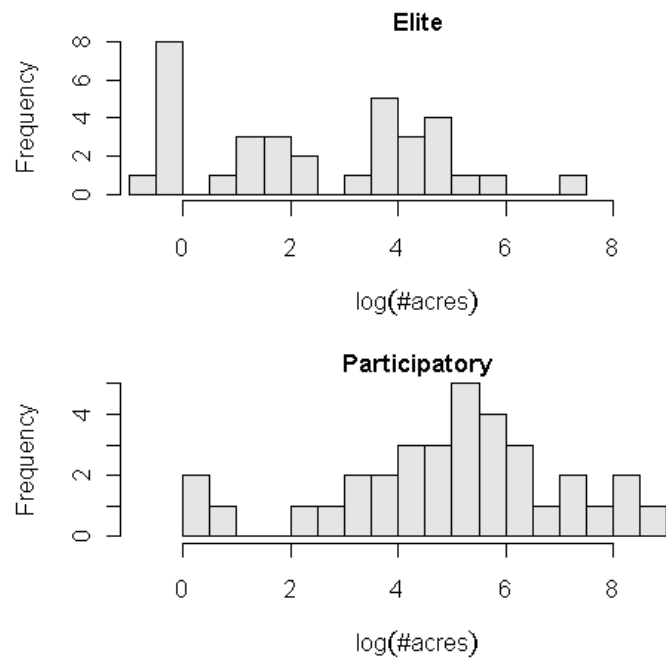
Species and Acreage Predictors

This section examines the distributions of the number of species per project (Fig. 4) and the physical size (acreage) of the projects separately by project type. This explores the relative number of species found in each project are greater for projects which attracted more participation (participatory), while the projects without participation or with comments from predominantly government agencies (elite) showed fewer number of species. Fig. 4 demonstrates this visually, with the Elite category clearly has greater concentrations of projects (dots) with fewer species present (x-axis).



Another predictor for public participation is the size of the projects. Although the distributions of both variables do vary by project type according the species numbers (Fig. 4), the acreage distributions are more distinct (Fig. 5). This is evident by the difference in concentration of projects occurring in the Elite category (with greater distribution of projects with fewer acreage (log#acres), while the Participatory projects were more concentrated among larger projects (log#acres). The log is essentially the exponent of the acreage number. The Encyclopedia Britannica defines logarithms as "a series of numbers in arithmetical progression, corresponding to others in geometrical progression; by means of which, arithmetical calculations can be made with much more ease and expedition than otherwise."

Figure 5. Distribution of log(#acres) by project type.



A sequence of logistic regression models were fit using participation type as the binary response to determine which combination of variables is the best predictor of participation type. These include the physical size of the project, both raw and log-transformed, number of species in the project, both raw and log-transformed, and these two variables in combination. Appendix E provides further explanation of these statistics tests.

This analysis of the predictors of public participation demonstrates the public is more likely to submit comments in large projects with federally listed and rare species. Chapter Nine provides an explanation for this outcome based on democratic theory

addressed in Chapter Two. This finding also holds implications for current and future national forest management policies.

CONCLUSION

This chapter provided an analysis of the process and participant characteristics for vegetation management projects authorized in national forests in North Carolina from 2003 through 2008. Among the comments documented 67 project files (made available through a FOIA), there were 171 scoping level comments received by the Forest Service, one administrative appeal, and no evidence of collaborative decision-making. These findings are summarized in Chapter Nine to explain the prevailing model of democratic theory present in these data.

Ecological forestry was identified more than any other interest in this study, with almost half of all comments, who worried about the potential effects of commercial logging on rare species and their habitat (32 percent). This accounted for the largest portion of criticisms received by the Forest Service in North Carolina. The next biggest group of objections addressed the potential effects of pre-commercial thinning on rare species and habitats (28 percent), which, combined with logging, showed that 60 percent of all criticisms addressed issues relating to commercial forestry. Those with commodity interests accounted for only six percent of all comments, a conspicuously low number, which contributed to significant chi-square statistic.

Content analysis of the scoping comments shows the comments were submitted by in-state participants 95 percent of the time. 17 percent of all comments submitted to the Forest Service during the scoping process for CE projects were submitted by unaffiliated, independent individuals. Interest group representation from Non-Governmental Organizations (NGO) accounted for 33.33 percent of the comments, while state and federal agencies made approximately half of all the comments.

Commenters in North Carolina were critical 58 percent of the time (n=99) and uncritical 42 percent of the time (n=72). Further inspection shows differences in attitudes among participant types, with government agencies filing the most supportive comments, NGO's most likely to oppose projects, and individuals showing little deviation in attitudes toward the different projects.

At this point, it is difficult to investigate the HFI in North Carolina without additional analysis of the policy and project characteristics described in Chapter Eight. Building on this analysis of the *what, who, and how* participant characteristics, the next chapter describes the site-specific projects to determine which type of forest management best described the characteristics of the HFI projects. Finally, in Chapter Nine, this dissertation summarizes the interdisciplinary analysis of the decision-making and forest management chapters and provides policy implications for ecology, democratic theory, and U.S. National Forest management.

CHAPTER EIGHT: AN ANALYSIS OF THE HEALTHY FOREST INITIATIVE & NATIONAL FOREST MANAGEMENT IN NORTH CAROLINA

To keep every cog and wheel is the first precaution of intelligent tinkering.

Aldo Leopold
A Sand County Almanac

INTRODUCTION

New Bush Administration policy promulgated in 2002, known as the Healthy Forest Initiative (HFI), substantially modified forest management and public participation processes for 155 U.S. National Forests (Chapter Six). In addition to addressing “Hazardous Fuels,” this chapter demonstrates how the HFI went well beyond wildfire-related forest management with new authorities for logging, burning, and thinning on public land. Chapter Seven provided an analysis of the “pre-decisional” (scoping) process and participant characteristics to explain the decision-making structure for site-specific HFI projects in North Carolina from 2003 through 2008. This chapter explores the stated purpose, location, and potential ecological consequences of those decisions. Following previous analysis of the role of public participation in HFI decision-making, this chapter addresses the ecological outcomes resulting from the forest management under the HFI.

This chapter provides a description of 67 proposed projects in North Carolina authorized by the Forest Service under new HFI regulations from 2003 through 2008. First, this chapter addresses the policy characteristics of two HFI rule changes (Categorical Exclusions and Extraordinary Circumstances) that authorized new processes for management of federal forests in North Carolina. Next, this chapter explores the site-specific dimensions of HFI through an analysis of project characteristics based on *Where* it was proposed, *What* type of management it was, and *When* it occurred. Figure 3 summarizes the conceptual framework for analyzing the forest management discussed in this chapter.

Figure 3. Conceptual Framework for Research Design: Forest Management.		
Forest Management = f (Policy Characteristics + Project Characteristics)		
Forest Management	Policy Characteristics	Project Characteristics
Commodity forestry Ecological forestry	Extraordinary Circumstances Categorical Exclusions	Where project occurred What occurred When project occurred

The project characteristics for project location (*where*) include the eco-regions, national forests, and ranger districts in North Carolina. Next, to explain precisely *what* kind of forest management projects were proposed, this chapter provides an analysis of the type of Categorical Exclusion (CE) and stated purpose for each project. This chapter also analyzes *When* projects occurred to investigate whether increased public participation opportunities (administrative appeals) affected the rate at which the Forest Service proposed CE projects in national forests in North Carolina. Finally, this chapter addresses the relationships between different variables of interest (project

characteristics), including response variables from the *What* category and explanatory variables from *Where* the project was proposed.

SITE-SPECIFIC ENVIRONMENTAL MANAGEMENT

Many scholars believe environmental policy and conservation studies have focused on the deliberative processes behind decision-making while failing to explain the environmental outcomes from those decisions (Mohai & Verbyla 1987; Steelman 1996; Press 1997; Gastil & Levin 2005; Koontz and Thomas 2006; National Research Council 2008). One way to bridge these research agendas focuses on project-level U.S. National Forest management decisions, which are open to public participation and include site-specific ecological analysis. This study provides an analysis of management activity as well as ecological consequences of project-level decision-making for the Croatan, Nantahala, Pisgah, and Uwharrie National Forests in North Carolina.

Although most research of national forest decision-making addresses forest-wide planning (Steelman 1996), the unit of analysis for this study is project-level “categorical exclusion” management actions. As Germain et al. explain, “In contrast to forest-plan appeals, which address the multi-faceted issues of managing a national forest, forest projects are specific management activities that guide on-the-ground management and implementation within the designated forest plan” (2001:117). These “ground” level activities include pre-commercial and commercial logging, “timber-stand improvement,” prescribed-burns, road-construction, watershed restoration, wildlife openings, and salvage logging following weather or insect-related events. Building on the last chapter’s analysis of the decision-making processes, the next section provides an

analysis of the outcomes of those decisions for 67 site-specific projects in North Carolina authorized from 2003 through 2008.

In 2007, the General Accounting Office (GAO) released findings from the first nationwide study of Forest Service CE projects, entitled “Use of Forest Service Categorical Exclusions from Calendar Years 2003-2005” (2007). The GAO discovered the Forest Service used the CE exemption 72 percent of the time, which resulted in “3,018 vegetation management projects to treat about 6.3 million acres” (2007:2). Data from the GAO report were gathered for this dissertation to identify the CE projects in authorized in North Carolina (See Appendix G). Additionally, the NC Forest Supervisor’s office provided a list of 330 CE projects from 2003 through 2008, which included all CE’s authorized in North Carolina under the new HFI regulations. Archival analysis from newspapers was also used to triangulate the data (See Chapter Three for additional discussion of methodology). This records research identified 67 vegetation management CE projects in North Carolina from 2003 through 2008 (See Appendix C).

Policy Characteristics

One important policy characteristic identified for this section relates to the HFI’s “Clarification of Extraordinary Circumstances,” which allows the Forest Service to authorize a project in a culturally or ecologically sensitive area previously off-limits to management through expedited processes (67 Fed. Reg. 54,622, 54,622 (Aug. 23, 2002). This chapter also addresses “Categorical Exclusions” authorized under provisions of the HFI, which affected existing Forest Service CE’s as well as new Healthy Forest CE’s (#10, 11, 12, 13, and 14).

In addition to exempting all CE's from National Environmental Policy Act (NEPA) requirements to conduct and publish environmental assessments (EA) or an environmental impact statement (EIS), the HFI included provisions that waived appeal rights (see Chapter Seven), and authorized the agency to approve CE's in areas with extraordinary environmental and cultural resources (see below). Under these forest management policy changes, combined with rules eliminating the administrative appeals process for all CE projects, the HFI established new authorities for the Forest Service to increase management while simultaneously restricting public participation and reducing NEPA analysis.

Project Characteristics

After project files for this study were obtained through a Freedom of Information Act (FOIA) request, categories were constructed to facilitate an analysis of policy and project characteristics. In addition to the policy characteristics described above, project characteristics were identified based on *where* projects were proposed, *what* type of projects were authorized, and *when* projects occurred. First, project location (WHERE) was based on 1) Eco-region (Blue Ridge, Piedmont, Mid-Atlantic Coastal Plain), 2) National Forest (Croatan, Nantahala, Pisgah, and Uwharrie), and 3) Ranger District (Appalachian, Cheoah, Croatan, Grandfather, Nantahala, Pisgah, Tusquitee, and Uwharrie).

Next, the type of project used (WHAT) was determined by addressing 1) the CE Type (Special Use, Road Rehabilitation, Regeneration, Timber Stand Improvement, Hazardous Fuel Reduction, Post-Fire Rehabilitation, Limited Commercial Logging,

Salvage Logging, and Sanitation Logging following insect outbreaks); 2) the Stated-Purpose (Pre-Commercial Thinning, Commercial Logging, Prescribed Burns, Watershed Restoration, Wildlife Openings, Southern-Pine Beetles, and Other), and 3) the Project Size (acreage). Finally, this chapter explores the intensity of project occurrence (WHEN) to explain the frequency of proposals “scoped” (made open for comment) by the Forest Service.

FINDINGS

The first level of analysis for this chapter describes the general characteristics of the vegetation management projects. These descriptive statistics provide a summary of the findings as they relate to policy and project variables identified in the conceptual framework for this dissertation (Figure 3). This research design provides an analysis of the forest management authorized under HFI rules for vegetation management proposals (policy characteristics) and ecological outcomes (project characteristics). Policy characteristics describe the rules governing the management design, while project variables describe what was planned, where they were planned, and when the projects occurred.

The second level of analysis tests for relationships between selected factor and response variables. Contingency tables were created to establish levels of independence between the explanatory variables (factor) and dependent variables (response) (Agresti 1990:2; Steelman 1996:206). Several variables were analyzed

through chi-square, logistic regression, confusion matrices, receiving operation characteristic curves and other statistical tests.

POLICY CHARACTERISTICS

Categorical Exclusions

Statutory laws governing the Forest Service include the National Environmental Policy Act of 1970 (NEPA), the National Forest Management Act of 1976 (NFMA), and the National Forest Service Decision-making and Appeals Reform Act of 1992 (ARA) (see Chapter Six). While NFMA addresses long-term forest-wide planning procedures, regulations established under NEPA created three processes of review for site-specific, project-level management. The Council of Environmental Quality (CEQ), the federal body responsible for implementing NEPA, established levels of review for: 1) an EIS for all projects that may significantly affect the quality of the environment; 2) an EA that documents a “Finding of No Significant Impact” (FONSI) or a notice to prepare an EIS; and, 3) in limited circumstances, undocumented review where the action fits into a previously defined categorical exclusion (CE).

NEPA requires the Forest Service to conduct an EA for all management except “routine actions that have no extraordinary circumstances” (57 *Fed. Reg.* 43180 (September 18, 1992)). These include activities that “will have little potential for soil movement, loss of soil productivity, water and air degradation or impact on sensitive resource values and is consistent with Forest land and resource management plans” (56 *Fed. Reg.* 19718 (April 29, 1991)). If the Forest Service determines that specific classes of management have no significant effect, individually or cumulatively, on the quality of

the environment, regulations implementing NEPA allow the Forest Service to establish categories of management that are excluded from both the EIS and EA requirements (40 C.F.R. §§ 1507.3(b)(2)(ii); 1508.4.)

Under new provisions established by the Healthy Forest Initiative, the Forest Service was authorized to use five new CE's for Hazardous Fuels Reduction, Post-Fire Rehabilitation, "Limited" commercial logging, and weather and insect-related salvage logging. Table 5 summarizes the five new categorical exclusion processes established by the Bush Administration in 2003.

Table 5. Five New Categorical Exclusions Created by the Healthy Forest Initiative.		
CE #	Name of HFI CE	Management Characteristics
10	Hazardous Fuels Reduction	4,500 acres of prescribed burns and 1,000 acres of commercial logging;
11	Post-Fire Rehabilitation	4,200 acres of tree planting, fence replacement, habitat restoration, heritage site restoration, repair of roads and trails, and repair of damage to minor facilities such as campgrounds.
12	Limited Commercial Logging	70-acres of "small scale" commercial logging; Less than one-half mile of road construction
13	Weather-Related Salvage Logging	250 acres of commercial logging in areas with recent weather-related disturbance; less than one-half mile of road construction
14	Insect-Related "Sanitation" Salvage Logging	250 acres of commercial logging for "sanitation harvests" in areas with recent or pending insect outbreaks; less than one-half mile of road construction

Although the new HFI CE's were not promulgated until the summer of 2003, the Forest Service also had existing CE's for vegetation management it exempted from NEPA analysis, including road rehabilitation, special uses, regeneration, and "timber-stand

improvements.” There was also a category for “timber sales” until 1999 when it was invalidated in *Heartwood v United States Forest Service* (73 F. Supp. 2d 962 (S.D. Ill.1999)). Lastly, the Forest Service has other CE’s that do not address “vegetation management” as defined by the GAO to “include, but are not limited to, activities such as using prescribed burning, timber harvests, or herbicides; or thinning trees, grass, weeds, or brush” (GAO 2007a).

The existing CE’s for vegetation management were modified by additional HFI provisions that released the Forest Service from the administrative appeal process (See Chapter Six and Seven). Additionally, all CE’s (new and old) could be authorized by the Forest Service in previously restricted areas if extraordinary circumstances were present (described below). Table 23 provides an overview of the projects issued in North Carolina under the new HFI and existing CE’s available to the Forest Service. This study identified 18 projects issued under the new HFI CE’s, and 49 additional projects were proposed under existing CE regulations, which were authorized under other HFI authorities, including rules regarding extraordinary circumstances, administrative appeals, and substantive comments (described in Chapter Six).

Table 23. Overview of Categorical Exclusion Vegetation Management Projects Proposed by the U.S. Forest Service in North Carolina from 2003 through 2008.	
Types of Categorical Exclusions	Total
Healthy Forest Initiative Categorical Exclusions	18
Existing Categorical Exclusions*	49
* These CE’s were authorized under other HFI rules, including the Extraordinary Circumstances provision and the Appeals Rule.	

Extraordinary Circumstances

If the Forest Service determines that an entire class of management has no significant effect, individually or cumulatively, on the quality of the environment, regulations implementing NEPA allow the Forest Service to establish CE's excluded from both the EIS and EA requirements (40 C.F.R. §§ 1507.3(b)(2)(ii);1508.4.). Under the original implementing language, the Forest Service could not implement CE projects if extraordinary circumstances were present in the activity area (40 C.F.R. § 1508.4). The agency is required to maintain a project file that explains why no extraordinary circumstances exist in the proposed management area (FSH § 1909.15, ch. 30 § 31.2(10) (1992)).

Extraordinary circumstances include a list of environmental and cultural issues that, if present in the proposed activity area, requires the Forest Service to conduct a full EA for any national forest management. Normally, for example, the Forest Service would have to conduct an EA if there are steep slopes, endangered or threatened species, wilderness or wilderness study areas, and if the project occurs in an "Inventories Roadless Area"(1909.15 §30.3(2)). The CEQ requires that the Forest Service "shall provide for extraordinary circumstances in which a normally excluded action may have a significant environmental effect" (40 C.F.R. § 1508.4).

Healthy Forest Initiative "Clarification of Extraordinary Circumstances"

The first rule change under the Healthy Forest Initiative was the "Clarification of Extraordinary Circumstances for Categories of Actions Excluded from Documentation in an Environmental Assessment or an Environmental Impact Statement" (67 Fed. Reg.

54,622, 54,622 (Aug. 23, 2002). The new HFI directive revised the Forest Service Handbook (1909.15 Chapter 30) by changing the extraordinary circumstances' automatic mechanism triggering an EA and replaced it with discretionary language in which the agency was only required to consider "resource conditions" to determine whether extraordinary circumstances were present (Huber 2005).

As the Forest Service stated, "The mere presence of one or more of these resource conditions does not preclude use of a categorical exclusion," and, instead, the agency argued that "the degree of the potential effect of a proposed action on these resource conditions determines whether extraordinary circumstances exist" ((36 CFR 220.6(b)). "Previously, the presence of these 'resource conditions' were themselves defined as extraordinary circumstances, but the Forest Service changed the Handbook to make what was a mandatory duty into a discretionary act" (Vaughan 2006).

Under the HFI rule changes, the Forest Service authorized CE projects in North Carolina that included 36 occurrences of federally listed Endangered and Threatened species. Based on available data, these species were present in nearly 40 percent (n=26) of all CE vegetation management projects, while Forest Service Sensitive Species (another extraordinary circumstance category) were present in 63 percent (n=42) of all projects. Cumulatively, these species occurrences contributed to presence of extraordinary circumstances in 43 projects, while the presence of archeological resources, Inventoried Roadless Areas, and other issues increased the number of these projects to nearly 66%. Table 24 provides a summary of the extraordinary circumstances present in vegetation management in national forests in North Carolina

that would have previously required public documentation of potential environmental impacts in an EA.

Table 24. Overview of Extraordinary Circumstances* Occurring in 67 Categorical Exclusion Vegetation Management Projects in National Forests in North Carolina.	
Type of Extraordinary Circumstance	Total
Federally Listed Endangered & Threatened Species	36
Forest Service Sensitive Species**	187
Inventoried Roadless Areas	2
Archeological Resources***	17
<p>*Other Extraordinary Circumstances not analyzed for this study include steep slopes, flood plains, wetlands, municipal watersheds, Congressionally designated areas, Research Natural Areas; and American Indian cultural sites.</p> <p>** Sensitive Species were added to the list of Extraordinary Circumstances by the Forest Service in 2003</p> <p>*** Archeological surveys for projects were not included in the FOIA. Evidence of presence of archeological resources is based on Forest Service correspondence available in the project files.</p>	

Prior to the HFI, the presences of federally listed endangered and threatened species would have automatically triggered an EA. Based on the available surveys by Forest Service biologists, there were eight different types of these species that were documented or likely present in the proposed activity areas of 26 separate CE projects. Regardless of the potential adverse or positive effects of Forest Service management, the occurrences of these species would have compelled the agency to conduct an environmental assessment to determine whether the potential impacts may have effects on the environment. Table 25 summarizes the endangered and threatened species identified.

Table 25. Endangered Species Identified as Likely Occurring In North Carolina.		
Name	Occurrences	Class
<i>Picoides borealis</i> (Red Cockaded Woodpecker)	12	Bird
<i>Myotis sodalis</i> (Indiana bat)	10	Mammal
<i>Alasmidonta raveneliana</i> (Appalachian Elktoe)	4	Mussel
<i>Helianthus schweinitzii</i> (Schweinitz's sunflower)	4	Plant
<i>Haliaeetus leucocephalus</i> (Bald eagle)	2	Bird
<i>Lysimachia asperulifolia</i> (Rough-leafed Loosestrife)	2	Plant
<i>Symphotrichum georgianum</i> (Georgia Aster)	1	Plant
<i>Cyprinella monacha</i> (Spotfin Chub)	1	Fish

In addition to federally listed species, there were a number of other extraordinary circumstances present in the projects identified in the current study. For example, there were 187 separate occurrences of sensitive species, which was a class of endangerment that the new HFI regulations included in the regulations as extraordinary circumstances (67 Fed. Reg. 54,622, 54,622 (Aug. 23, 2002) while simultaneously the giving the Forest Service the discretion to conduct an EA if those species were present. Other extraordinary circumstances described in the project proposals included the Cheoah Bald and Tusquitee Bald Inventoried Roadless Areas in the Nantahala National Forest. Although logging in the Tusquitee Bald (Fires Creek Stewardship Project) was dropped, the project in the Cheoah Bald went forward after the district ranger determined the project “will not affect the roadless characteristic” (Bonnette 2005:3, on file with author). Finally, based on internal Forest Service correspondence, archeological resources were presence in 25 percent (n=17) of the projects identified in this study.

PROJECT CHARACTERISTICS

The four national forest offices in North Carolina combined to issue 67 CE projects from 2003 through 2008. The Nantahala National Forest proposed nearly 43 percent (n=29) of all projects. The CE for “Timber-Stand Improvements” (#6) was used most often, while commercial logging was the most common purpose stated by the agency. Among all North Carolina national forests, the average project size was approximately 375 acres, with the Uwharrie National Forest skewing the distribution with an average of 2,425 acres per project for large burns authorized under the HFI CE for hazardous fuels reduction (# 10). The following section provides a description of the project characteristics of the data set.

WHERE PROJECTS OCCURRED

Federal forest ownership in the United States began as an amendment to the General Land Revision Act of 1891, granting the President authority to create forest reserves by proclamation (See Chapter Four). Today, the U.S. Forest Service administers 155 national forest and grasslands covering 193 million acres. The next section explores the North Carolina case study with analysis of the forest management CE projects in the Nantahala, Pisgah, Uwharrie, and Croatan National Forests.

Beyond the United States Department of Agriculture’s national offices in Washington, DC, the Forest Service is organized by region, state, forest, and local districts. Planning and implementation of project level forest management occurs at the district level. Some national forests have several districts, while others have only

one, operating under the same title as the forest. The Forest Service in North Carolina recently merged the Highlands and Wayah Ranger Districts to form the Nantahala District. Together, the four national forests total 1,251,710 acres of federally managed land. This study uses the eight districts under the most current restructuring to describe the geographic location of CE management in North Carolina (see Appendix C).

Us National Forests in North Carolina

To develop the most adequate understanding of the democratic processes and management regime operating under the HFI, this section includes analysis of the geographic characteristics of four U.S. National Forests investigated in this North Carolina case study. The geographic extent of projects spans the Mid-Atlantic Coastal eco-region (Croatan National Forest), Piedmont eco-region (Uwharrie National Forest), and Blue Ridge eco-region (Nantahala and Pisgah National Forests).

Based on the administrative record, Forest Service rangers in the Nantahala National Forest proposed 43 percent (n=29) of all CE projects in North Carolina, which combines with the Pisgah National Forest (n=14) to give the Blue Ridge the largest concentration of CE's (64 percent). Although the Croatan Ranger District issued the most projects (18), this district represents the only administrative unit in the Croatan Forest, while the Tusquitee Ranger District proposed the most projects relative to similar districts. Table 26 summarizes the project characteristics relating to *where* vegetation management projects occurred in North Carolina from 2003 through 2008.

Table 26. Overview Of WHERE Vegetation Management CE Projects Occurred In North Carolina From 2003 Through 2008.								
Eco-Region	Blue Ridge						Piedmont	Coast
n=67	43						6	18
Forest	Nantahala			Pisgah			Uwharrie	Croatan
n=67	29			14			6	18
District	Cheoah	Nantahala	Tusquitee	Appalachian	Pisgah	Grandfather	Uwharrie	Croatan
n=67	5	9	15	3	4	7	6	18

Nantahala National Forest

Created in 1920 as part of the *Weeks Act* (see Chapter Four), the Nantahala National Forest in western North Carolina is the largest federal forest (531,338 acres) in the state (See Chapter 1). The Nantahala National Forest spread across the Southern Metasedimentary Mountains, Southern Crystalline Ridges and Mountains, High Mountains, and Broad Basins in the Blue Ridge Eco-region (Griffith et al. 2002). Under the new HFI authorities, the Forest Service authorized more CE management projects in the Nantahala (43 percent) than any other forest in the state. These included 100 percent of the watershed restoration projects and 60 percent of all CE's designed for the purpose of commercial logging (described below).

Until 2006, the Nantahala National Forest was divided into the Highlands, Tusquitee, Cheoah, and Wayah Ranger Districts. After the consolidation, the new 240,000 acre Nantahala District was formed when the Forest Service merged the Highlands Ranger District in Macon, Jackson, and Transylvania counties with the Wayah

Ranger District adjacent to the Cherokee Indian Reservation in Macon, Swain, and Jackson counties. Previously the largest Ranger District, the Tusquitee includes 158,579 acre in Cherokee, Clay, and Graham counties, and includes the 5,499-foot tall Standing Indian Mountain. The Cheoah Ranger District has 120,000 acres in Graham and Swain Counties.

Although the newly consolidated Nantahala National Forest contains the largest acreage, the Tusquitee Ranger District issued the most projects, with more than half of all projects in the Nantahala and 22 percent statewide. These proposed projects contained more rare species (endangered, threatened, sensitive, and forest concern) than any other district in the state. Moreover, the Tusquitee issued more projects than the entire Pisgah or Uwharrie National Forests, and only three less than the Croatan National Forest.

The Tusquitee district issued 35 percent (n=7) of all commercial logging projects identified in this study, and two-thirds (n=6) of all watershed restoration projects (discussed below). Among these projects, the Timber Stand Improvement CE (discussed below) accounted for more than half. Most strikingly, only 13 percent (n=2) of the projects on the Tusquitee district were authorized using the new HFI CE's. Although the rest were issued using the CE's that were established prior to the HFI, they were authorized under different HFI rules, including the Appeals Rule (see Chapter Six) and extraordinary circumstances (see below).

In addition, there were 108 species identified in projects issued in the Tusquitee District. This accounts for over 26 percent of all the species identified in project files for

this study. Additional discussion (below) explore potential explanations for this substantial percentage of species, including the Blue Ridge's generally more biologically diverse ecosystems and the propensity for the Tusquitee district to authorize projects in sensitive areas.

The Nantahala Ranger District (formerly the Highlands and Wayah Ranger Districts) issued over 31 percent (n=9) of all projects in the national forest. Combined with the Tusquitee, these two districts accounted for over 35 percent (n=24) of all projects identified in this study. Although the projects issued by this district had a greater distribution of purposes compared to the Tusquitee, the Nantahala district relied on the "Timber Stand Improvement" CE (#6) a third of the time. Interestingly, this district issued 40 percent of the HFI Hazardous Fuels Reduction CE's (#10) designed as a wildfire prevention strategy. The Blue Ridge forests, however, are not considered high-threat areas for the kind of catastrophic wildfires the HFI was originally established to address (discussed below and in Chapter Nine).

Unlike the other two districts in this national forest, the Nantahala Ranger District only had 13 populations of rare species occurring in the proposed projects. Like the Pisgah and Grandfather districts, with one and four rare species occurrences identified respectively, the Nantahala District biological surveys identified far fewer rare species in the proposed projects than the statewide average (n=46).

The smallest district in the Nantahala National Forest, the Cheoah Ranger District, issued only five projects. Except for one prescribed burn, the stated purpose for each project in the Cheoah district was for commercial logging projects. No other

district issued a greater percentage of CE projects with the stated purpose of commercial logging. This contributed to the rejection of independence models relating to the relationships between CE types and district (see discussion of statistical tests below).

Although the Cheoah is the smallest district and issued the fewest number of projects except for the Appalachian and Pisgah Ranger Districts, surveys in the Cheoah identified over 89 separate occurrences of rare species. This accounts for twice the average, placing it second among all districts for the number of species found in projects. Based on the number of species per project issued, the Cheoah ranked the highest with nearly 18 rare species occurring in each project. See table ****

Pisgah National Forest

The North Carolina Blue Ridge eco-region also holds the 510,119 acre Pisgah National Forest. Sold by the Vanderbilt family in 1916, the Pisgah was the first tract of land purchased under the *Weeks Act* (see Chapter Four). Today, the forest is divided into the Appalachian, Pisgah, and Grandfather Ranger Districts. These districts accounted for 21 percent (n=14) of the projects issued in North Carolina under the new HFI authorities, including 75 percent of the weather-related salvage logging CE's (#13).

Among the three districts in the Pisgah National Forest, the Grandfather Ranger District is the largest, with approximately 187,000 acres southeast of the Blue Ridge Parkway, from north of Asheville to Blowing Rock, NC. This tract of federal public land covers the Blue Ridge's Southern Crystalline Ridges and Mountains, Eastern Blue Ridge Foothills, and Southern Sedimentary Ridges (Griffith et al. 2002).

The Grandfather district issued half the CE projects in the Pisgah National Forest, including the 250-acre Bald Mountain/Steels Creek project, which was one of the new HFI salvage logging CE's (#13). The Grandfather district also authorized projects targeting the Southern Pine Beetle on 304 acres, as well as relatively small wildlife-openings (described below) averaging seven acres each.

Four of the projects issued in the Pisgah National Forest occurred in the 157,000-acre Pisgah Ranger District in Buncombe, McDowell, and Transylvania counties. The Pisgah district is the Blue Ridge eco-region's Southern Crystalline Ridges and Mountains, Broad Basis, and High Mountains (Griffith et al. 2002). This district used CE's relatively infrequently, including only two HFI CE's for a four-acre nature-walk and a 51-acres of salvage logging following a Southern Pine Beetle outbreak (discussed below).

Three projects were issued in the 150,000-acre Appalachian Ranger District in Mitchell, Avery, Yancey, Buncombe, Madison and Haywood counties. This district includes the High Mountains, the Southern Crystalline Ridges and Mountains and the Southern Metasedimentary Mountains. Most strikingly, two of the three projects in the Appalachian district were authorized under the new rules established by the HFI. One of these projects (Dillingham Salvage) was the most controversial logging projects identified in this study (discussed in Chapter Seven). The other noteworthy HFI project on the Appalachian district project was the Catpen Stewardship Goods for Service's project (discussed in Chapter Seven). Coincidentally, the Catpen project was authorized using the new commercial logging contracting system (discussed in Chapter Six and

Seven), although the project was substantially over budget after an archeological site was damaged during the logging.

Croatan National Forest

Established in 1936, the Croatan National Forest occupies 159,886 acres in the Carolina Flatwoods, Mid-Atlantic Flatwoods, and Mid-Atlantic Floodplains and Low Terraces of North Carolina's Mid-Atlantic Coastal Plain (Griffith et. al 2002). Given that the forest is smaller than most districts found in the national forests in the Blue Ridge Eco-region, the Croatan has only one ranger district by the same name. In an area that was once dominated by longleaf pine savanna, the forest has become a patchwork of pine-plantations and second-generation longleaf stands (Frost 2000). Previous logging and fire-suppression activities have replaced the native systems with tightly managed crops of loblolly pine, although scattered longleaf pine and pond pine forests remain (Frost 2000). Moreover, six threatened and endangered species, 61 sensitive, and 74 locally rare species occur on the Croatan.

In fact, 75 percent of all pre-commercial thinning CE projects identified in North Carolina from 2003 through 2008 were conducted on the Croatan. Pre-commercial thinning was the primary stated purpose for two-thirds of the projects in the Croatan, while insect and weather related salvage logging and commercial logging projects (authorized under the HFI CE's) accounted for the balance. Based on correspondence by the Forest Service, the agency changed one pre-commercial thinning project on the Croatan to a "Limited" commercial logging project authorized under the HFI CE (#12) at the last minute (Jones 2004:1, on file with author).

This emphasis on commercial forestry may also explain why the district had more than 17 percent of the rare species occurrence identified through Forest Service surveys. While the Croatan issued more “Limited” HFI CE (#12) projects than any other national forest, and it also offered no projects for the state purposed of watershed restoration or wildlife openings. The Croatan also authorized half (n=12) of all “Timber Stand Improvement” CE (discussed below) projects authorized in North Carolina, which is nearly 3.5 times more than the average found by other districts.

The Forest Service management in the Croatan relies heavily on pre-commercial thinning in areas that have lost much of their original biotic and ecosystem characteristics. The commercial forestry practices of thinning stands of young bedded loblolly pine plantations is conducted under the goal of promoting vigorous growth of more merchantable trees for future logging. The Forest Service also asserts these activities benefit federally endangered Red Cockaded Woodpeckers (Hillman 2004:2, on file with author).

Although this study does not address the claim that pre-commercial thinning practice helps “enhance the future habitat conditions for the RCW’s (Hillman 2004:2 on file with author), public comments raised questions about other species adversely affected by the thinning. Regardless, by virtue of evidence from both sides of the argument, pre-commercial thinning, especially in rare species habitat, has significant effects (good and bad), which NEPA requires to be analyzed in an EA or EIS, not a CE (see Chapter Nine).

Uwharrie National Forest

The 50,373-acre Uwharrie National Forest (Uwharrie) is located in the Carolina Slate Belt of the Piedmont ecoeregion (Griffith et al. 2002). Although the Uwharrie is the smallest federal forest in state and proposed the fewest CE projects in the state (n=6), the Forest Service authorized CE's for 14,549 acres—the most of all national forests identified in this study.

There were more HFI Hazardous Fuels Reduction projects (CE 10) authorized on the Uwharrie (n=3) than any other forest identified in this study. These three projects accounted for 13,326 of the total acreage, which, compared to other forests which did not use this HFI CE, explains why the Uwharrie treated the most acreage among all national forests in North Carolina. The new CE (#10) exempts up to 4,500 acres of burning and 1,000 of logging from the standard National Environmental Policy Act (NEPA) environmental assessment and Environmental Impact Statement process (36 CFR 220(ii) (see Chapters Six and Seven). Although there were 21 other burns issued by the Forest Service in North Carolina through the CE process, this study only addressed burns authorized under the HFI.

The Hazardous Fuels Reduction CE (#10) also requires the Forest Service to design the proposals “through a collaborative framework” (USDA & USDI 2002). The project files, however, provided no evidence of any deliberations identified as collaboration (see Chapter Seven). Additionally, the Uwharrie offered the Pekin Wildlife Opening as part of a 3,898-acre logging project called the Pekin Ecosystem Management Project, which was the only project identified in this study that was challenged through

an administrative appeal (see Chapter Seven). Finally, the last project on the Uwharrie was the Crown Touch and Release Project, which was a 1,160-acre pre-commercial thinning project. The Crown Touch and Release project was nearly 3.5 times larger than the average pre-commercial thinning project, and it was the second largest pre-commercial thinning identified in this study (following the Lime Project in the Croatan National Forest).

The large acreage of the projects issued in the Uwharrie helps explain why more than more than an average of 12 rare species occurred per project. In fact, even though the Uwharrie National Forest is smaller than ranger districts in other forests in the state, it had the third highest occurrences of rare species present of all similar administrative units (districts). This may be explained by the ecological characteristics found at different spatial scales, with more biological diversity found in the Blue Ridge in a smaller grain-size than the Piedmont. The Appalachian district, for example, only authorized three CE's on 274 acres, yet each project had on average 13 species per project.

WHAT PROJECTS OCCURRED

The next level of analysis explored WHAT types of CE projects were issued from 2003 through 2008 in North Carolina. Records research of these projects revealed that the "Timber-Stand Improvement" category (CE #6) was used over 35 percent of the time. This dominance by a commercial forestry CE explains why commercial logging was the most common purpose stated by the agency, with over 29 percent of all projects. Finally, although there were only five projects identified as HFI prescribed burns in

North Carolina, these accounted for the largest portion of acreage treated (63 percent).

Table 27 summarizes the project characteristics relating to *what* vegetation management projects occurred in North Carolina from 2003 through 2008.

Table 27. What Projects Were Issued In North Carolina National Forests Under The Healthy Forest Initiative.									
CE Type	Special Use (#3)	Road (#4)	Regen (#5)	Timber-Stand Improvement (#6)	HFI Haz Fuels (#10)	HFI Post-Fire Rehab (#11)	HFI Limited Logging (#12)	HFI Weather - Related Salvage Logging (#13)	HFI Insect-Related Salvage Logging (#14)
N=67	2	5	14	28	5	0	5	5	3
Purpose	Pre-commercial		Commercial	Burn	Restoration		Wildlife	Pine Beetle	Other
n=67	16		19	6	6		8	8	4
Size	Pre-commercial		Commercial	Burn	Restoration		Wildlife	Pine Beetle	Other
n=25,408	5,459		2,180	15,997	11		110	1,516	135

CE Type

While the type of CE used varied among ten different categories, the pre-HFI “Timber-Stand Improvement” (TSI) category (#6) was most commonly used by the agency (35 percent), totaling more projects than all new HFI CE’s combined. In addition, the TSI category accounted for 21 percent of all acreage treated in North Carolina from 2003 through 2008. Additionally, the pre-HFI CE for “Regeneration” management (#5) was used more than 22 percent of the time to authorized commercial forestry practices, including thinning, replanting, and burning. Although these two categories were created before the new HFI CE’s, the Regeneration and TSI CE’s authorized in North

Carolina were affected by other provisions of the HFI (Appeals Rule, Substantive Comment, and extraordinary circumstances). In short, the most common projects in North Carolina were authorized through the categories for regenerating and improving timber-stands, which were not specific hazardous fuels or post-fire related activities justified when the HFI was created in 2002 (see Chapter Six).

Timber-Stand Improvements CE

The TSI category was created in 1992 for “routine” actions (57 *Fed. Reg.* 43180) defined as “activities that do not include the use of herbicides or do not require more than 1 mile of low standard road construction” (36 CFR 220.6(e) (6)). The Code of Federal Regulations includes examples of “Girdling trees to create snags [and] thinning or brush control to improve growth or to reduce fire hazard including the opening of an existing road to a dense timber stand” (36 CFR 220.6(e)(6)).

This category was formed in 1992 when the agency combined two earlier CE’s established in 1985 (50 *Fed. Reg.* 26078). One of these early CE’s was the Low-Impact Silvicultural CE for “activities that are limited in size and duration and that primarily use existing roads and facilities, such as firewood sales; salvage, thinning, and small harvest cuts; site preparation; and planting and seeding,” (FSH 1952.2 (4)). The other was the Fish and Wildlife CE for “management activities, such as improving habitat, installing fish ladders, and stocking native or established species” (FSH 1952.2 (9)). When the final language for CE 6 was published, the agency asserted that “[t]he intent of the agency is that only routine actions that have no extraordinary circumstances should be within categories for exclusion” (57 *Fed. Reg.* 43180 (Sept. 18, 1992)). The Forest Service also

defined routine actions as having “little potential for soil movement, loss of soil productivity, water and air degradation or impact on sensitive resource values and is consistent with Forest land and resource management plans” (56 *Fed. Reg.* 19718 (April 29, 1991)).

Records research revealed the TSI category was used for nearly 45 percent of all pre-commercial and commercial logging projects. This emphasis on commercial forestry is noteworthy given that the uncertain legal status of using a CE for commercial logging (see below). The TSI CE was adopted when another Forest Service exemption for logging was created called the Timber Harvest CE, which also evolved out of the Low-impact Silvicultural CE and the Fish and Wildlife CE (57 *Fed. Reg.* 43180). The Timber Harvest CE permitted the logging up to 250,000 board feet of “merchantable wood products” and salvage logging up to 1,000,000 board feet” (57 *Fed. Reg.* 43180 (Sept. 18, 1992)).

The Timber Harvest CE was later invalidated as the result of *Heartwood v. Forest Service*, 73 F. Supp. 2d 962 (S.D. Ill.1999), in which the federal district judge held that “the Forest Service failed to adequately address or provide support for its position that the timber harvests of these magnitude [sic] would not have cumulative effects on the environment... The Court cannot discover any meaningful analysis providing support for the Forest Service’s conclusion that the categorical exclusion of timber harvests of this magnitude would not have cumulative effects on the environment” (*Heartwood* 1999: 976-977). Like the Timber Harvest CE, the reliance on categories for Timber-Stand

Improvement resulted in the dominance of commercial logging CE's in North Carolina's national forests.

Given the controversial nature of CE's in general (Moriarty 2004), including several court cases and a formal petition to the Forest Service challenging the legality of CE's, as well as public opposition to CE's in North Carolina (see Chapter Seven), the category for exempting timber-stand improvements is one of the most criticized categories among all CE's. According to a federal petition filed by WildLaw (Vaughan 2006:1), "The language of CE 6 is even more vague than that of the former Timber Harvest CE, which at least included an acreage cap. Very similar projects to those previously carried out under the Timber Harvest CE are now being carried out under CE 6... In the Southeast, in particular, CE 6 has been abused frequently." Furthermore, nearly 34 percent of all comments received by the Forest Service contained criticism of a TSI project, which accounts for more criticism lodged against the TSI category than any other CE combined.

Moreover, 83 percent of all TSI projects were issued during the first three years of the six-year period investigated in this study. This follows the general trend in the data showing the frequency of projects proposed dropped after 2005, following the *Earth Island v Ruthenbeck* ruling that required the Forest Service to grant the right of administrative appeals to interested citizens (discussed below). In other words, although the agency could continue to use all CE's as before *Earth Island v Ruthenbeck*, the drop in the frequency of CE's corresponds directly with the federal court order requiring the Forest Service to provide an administrative appeal opportunity. As

discussed below, the substantial level of public comments received by the agency— combined with the opportunity to appeal— appears to have substantially influenced the frequency of CE's proposed in North Carolina.

Healthy Forest Initiative Categorical Exclusions

The CE's established by the HFI were used only 27 percent of the time (n=18). The stated purpose for HFI CE's related to commercial forestry 56 percent of the time, while prescribed burns accounted for 28 percent of the stated purposes for the projects. The remaining CE's were used for routine non-forestry related management (Other), including right-of-ways and campground maintenance. The "Post-Fire Rehabilitation" CE was not used in North Carolina, while other salvage logging, following weather and insect-related events, accounted for over 44 percent of all HFI projects. This discrepancy between wildfire-related management and salvage logging for insects and weather-related events offers insight into the disparate influence of the HFI in different geographic regions under the Forest Service jurisdiction.

Although the CE for Hazardous Fuels Reduction was used only five times in North Carolina, it accounted for more than 93 percent of all acres treated under the new HFI CE's. This Hazardous Fuel exemption was also the only HFI category that specifically mandated a collaborative decision-making process, although content analysis of the public comments for these projects found no evidence of such deliberation (See Chapter Seven). Furthermore, the CE for Hazardous Fuels was only legal until November 25, 2008, when it was invalidated in a federal court ruling and severed from the regulations (*Sierra v. Bosworth*, 04-2114) (see Chapter Six).

Project Purpose

There were approximately seven different stated purposes identified for proposed CE projects in North Carolina. These range from practices directly related to commercial forestry (pre-commercial thinning and commercial logging), indirectly related to commercial forestry (prescribed burns, Southern Pine-Beetles), hunting (Wildlife Openings), and ecological forestry (Watershed Restoration). While commercial logging was the most common purpose stated by the agency, the Forest Service treated more acreage with prescribed burns than all other categories combined.

Although the Forest Service claimed that prescribed burns and Southern Pine Beetle prevention were justified on ecological grounds, these claims are not supported by ecological forestry science, which rejects burns to maintain monoculture stands of merchantable trees. Additional, treatments for Southern Pine Beetle infestations do not address the prevalence of pine monocultures and drought-stressed trees (the root causes of the outbreaks). Additionally, the claim that wildlife openings were ecologically justified is also problematic based on the evidence the project files. The conservation science shows these openings only marginally support game management desirable for hunting while serving as vectors for invasive species and pests, including native SPB's (McKinney 1999). In fact, invasive species outbreaks introduced through logging constitutes a major threat endangered species, behind habitat loss and direct taking (White 2005).

Given this evidence, the six watershed restoration projects provide the best evidence of ecological forestry among all CE's used in North Carolina between 2003

through 2008. Watershed restoration projects accounted for only 11 acres, or less than one percent of all forests treated.

Commercial Forestry

The most common purpose identified for all CE projects issued in North Carolina in 2003 through 2008 related to commercial logging, which was in place 29 percent of the time. This is consistent with the high frequency of CE 6 projects issued for “timber-stand improvement” (discussed above), and, when combined with the pre-commercial thinning category, accounts for over 38 percent of all projects. This dominance of commercial forestry management also explains the substantial participation by those with interests in ecological forestry who overwhelmingly opposed Forest Service projects, accounting for 80 percent of all critical comments received by the agency (see Primary Sources of Concern and Potential Effects section in Chapter 6).

Prescribed Burns

The use of prescribed burns is often supported by the ecological literature when it is applied to native forests in fire-dependent ecosystems. Although this study did not include non-HFI prescribed burns, the Forest Service did authorize five Hazardous Fuels Reduction projects (CE 10) in North Carolina. Three were applied in the Uwharrie National Forest, and two were used in the Highlands District (now managed by the Nantahala District in the Nantahala National Forest). Based on the available evidence, the Uwharrie projects were used for maintaining non-native pine monocultures, while the burns in the Highlands District were applied to areas that are not fire-dependant ecosystems.

Anecdotal evidence of an additional non-HFI prescribed burn in the Cheoah district included a 606-acre burn in the Cheoah Bald Inventoried Roadless Area and along the Appalachian and Bartram Trails. As one commenter stated about the Cheoah project, “We believe there is little evidence that this area constitutes a fire hazard or shows any real need for controlled burns” (Thomas 2004:1, on file with author). Opposition to the Cheoah burn was not universal, however, as one commenter wrote to support the project, stating “I say go for it. You folks surely know more about these things than we do in the general public” (Parham 2004:1). Whether or not these burns were ecologically justified, the significance of 15,997 acres of burning raises questions regarding the use of CE’s for projects with substantial footprints (discussed in Chapter Nine).

This study only explored HFI-prescribed burns and the Cheoah Bald due to the settlement made during negotiations for approved FOIA request (see Chapter Three). Additionally, while many projects addressed in this study include forms of burning in the project proposals, these were not the primary purposes identified by the agency.

Southern Pine Beetles

During the scope of this study, the Forest Service authorized eight projects covering 1,516 acres with the primary purpose of addressing outbreaks of Southern Pine Beetles (SPB). Additionally, over eleven projects designed primarily for pre-commercial or commercial logging included treatments for Southern Pine Beetles. According to the Forest Service, Southern Pine Beetles present the most serious economic threat to national forests in the Southeast (2010:1). As the agency states, in recent years, “SPB

outbreaks resulted in unprecedented forest losses, estimated to have exceeded \$1.5 billion in damage. Over 70% of the pine forests in the South are still considered to be in medium or high SPB hazard categories” (2010:1). In 2002, for example the Forest Service treated over 200,000 acres in the Southern Region for SPB’s (USDA 2004).

Ecological forest science, however, shows that SPB’s are native to the Southeast, and outbreaks may actually be linked to past commercial forestry practices, including fire suppression, monoculture plantation forestry, road construction, and seed spore dispersal (Heinselman 1981, 1983; Kilgore 1981; Abrams 1992, Spies & Turner 1999, Aber et al. 2000). Dense even-aged pine plantations, for example, are more susceptible to infestations, and corridors provided by extensive logging roads may contribute substantially to the spread of pests and pathogens in many ecosystems (Aber et al. 2000:6). Additionally, the buffer between commercial pine plantations and native forests creates an “edge” effect, which may spread invasive species into forest interiors (Roland 1999).

Thinning treatments done correctly can reduce the rate of spread of SPB infestations and can potentially preserve native pine communities, including Shortleaf, Pitch and Table Mountain Pine. Thinning, however, only addresses the symptom of the problem of SPB outbreaks in the Southeast. Instead of reducing SPB infestations, thinning and logging may intensify severe outbreaks by creating breeding habitat and food sources in “slash,” which is made up of left over logs, slash, and stumps (Massey & Parker. 1981)

A consensus among ecological forest scientists indicates that natural,

undisturbed ecosystems are more likely to be resistant to insect outbreaks and disease (Native forests have evolved with insects, which play important roles in the nutrient cycling, natural disturbance, food chains, productivity, and biotic diversity (Clancy 1993:363). In fact, insect outbreaks can have a beneficial ecological effect of creating large-diameter snags and critical foraging habitat for woodpeckers and nesting habitat for cavity-nesting birds and mammals (Veblen et al. 1991). They also produce complex forest structure preferred by denning mammals (Koehler and Brittell 1990).

Wildlife Openings

Part of the Forest Service's management agenda includes the creation of "early successional habitat" in the national forests, defined cleared areas with the first 'succeeding' generation of returning forests. The agency believes these provide wildlife openings in the natural forest that benefits, among other things, game species and some native birds. In North Carolina, eight projects were proposed for this purpose. With the exception of one project in the Piedmont's Uwharrie National Forest, all were conducted in the Blue Ridge eco-region. According to the North Carolina Wildlife Resources Commission, "Early-successional forest openings add habitat diversity and provide an important habitat component for a number of game and non-game wildlife species" (McHenry 2005:1). In addition to potentially increasing structural diversity and mimicking natural disturbance, game management advocates believe early-successional clearings provides "walk-in" opportunities for hunting browsing deer and quail.

In contrast, ecological forestry advocates warn against wildlife openings because they may create "artificial openings [that] have ecological problems" that outweigh

potential environmental benefits (Schafele 2005:1, on file with author). These problems include edge-effects, introduction of invasive species, deteriorated natural conditions, and permanent loss of natural communities following road construction required to access the openings. (Schafele 2005:1).

Interestingly, half of the wildlife openings identified in this study had documented occurrences of rare species (based on Forest Service biological surveys), including one population of federally listed endangered bats (Indiana Bat), as well as 13 other protected “sensitive” species tracked by the agency. In addition to the direct effect on identified endangered and sensitive species, there is some probability that these wildlife openings and early-successional habitat serve as vectors for Southern Pine Beetles and invasive species. Although beyond the scope of this study, additional research is necessary to explain whether the declared ecological benefits of these projects outweigh the potential harm to biodiversity and ecosystem health. This apparent conflict between agency directives for creating wildlife openings, while also protecting rare species and preventing SPB outbreaks, demonstrates some of the problematic incompatibilities within the agency’s multiple-use mandate (discussed in Chapter Nine).

Watershed Restoration

Among the projects proposed by the Forest Service during the scope of this study, watershed restoration work accounted for nearly nine percent (n=6) of management activity, equaling less than one percent of all acreage treated. Each project was proposed in the Blue Ridge eco-region and averaged nearly two acres per

project. All of these watershed restoration projects were proposed in response to adverse effects of illegal off-road vehicle use on public land.

The use of Off-Road Vehicles (ORV) in national forests is one of the fastest growing forms of outdoor recreation. The Forest Service has seen a tenfold increase in the use of ORV's since 1972, growing from nearly five million to 51 million in 2004. Today, ORV's account for about 11 million annual visits to public lands. (USDA Croatan National Forest Plan).

This growth of ORV's in U.S. National Forests has raised concern among the Forest Service nationally (Bosworth 2006) and in North Carolina (Croatan Management Plan) due to the propensity of ORV users to stray from legal sites into sensitive forest land. In fact, the Forest Service believes "impacts from off-highway vehicles represent one of four key threats facing the nation's forests and grasslands" (USDA 2005). The agency has identified several ecological harms from ORV's, including "impacts to cultural and historic sites, violation of sites sacred to American Indians, severe soil erosion, spread of invasive weeds, disturbance to wildlife, destruction of fragile soils and vegetation" " (USDA 2004).

All of the watershed restoration projects in North Carolina identified in this study targeted illegal ORV use and the subsequent "soil erosion and sedimentation into area creeks" and "local waterbodies" (Vann 2005:2, on file with author). Illegal trails were also disturbing private property adjacent to the national forests. To prevent these activities, the agency authorized several corrective measures, including "breaking compacted soils, filling gullies and shaping the terrain; installing dips, tanktraps and

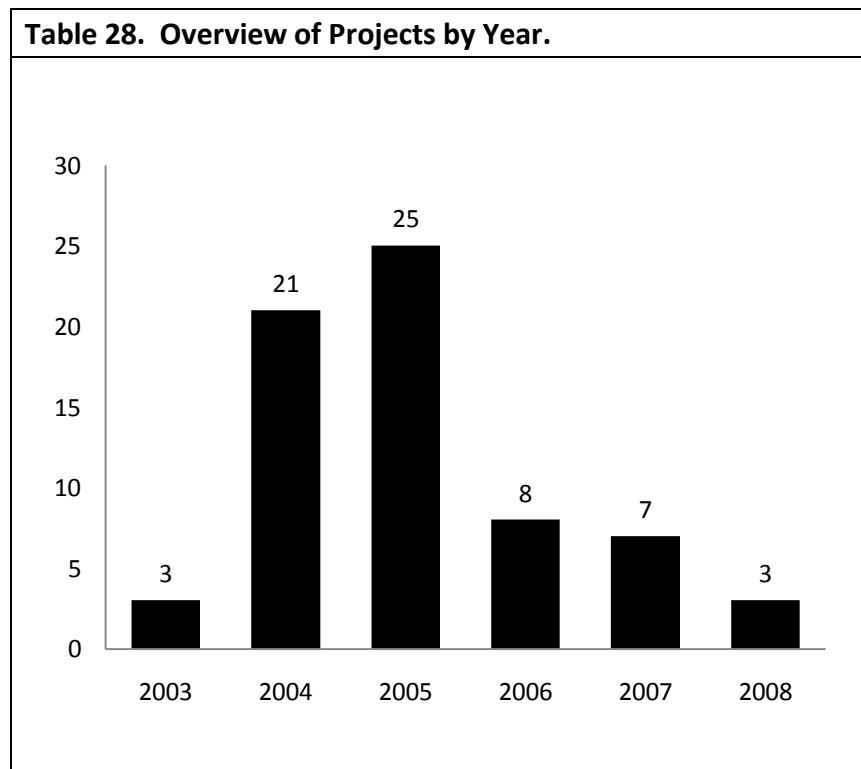
other water diversion devices, and closing the trails with an earthen berm” (Vann 2006:1 48). Rehabilitation work included seeding the areas with a mixture of grass and legume seeds, lime, fertilizer, and mulching.

Although ORV’s prove a serious challenge to agency rangers who try to block their access with road-closures, the agency found overwhelming support for this work. Of the 18 comments received by the Forest Service in response to these projects, only one was opposed. Furthermore, these projects accounted for less than 3 percent of all opposition to Forest Service projects identified in the content analysis (see Chapter Seven). In other words, these projects garnered the greatest proportion of support among all proposed actions by the agency. While ORV associations are very public with their support of legal trails, the conspicuous absence of opposition to these road-closures demonstrates the potential for this work given the substantial agreement between the public and the agency towards preventing illegal ORV use in the national forests.

WHEN PROJECTS OCCURRED

Based on the publication date of scoping notices mandated by NEPA (see Chapter Seven), the Forest Service proposed over 69% of the identified projects during 2004 and 2005, and then the frequency of projects dropped substantially (see Table 27). The drop in CE’s proposed after 2005 is consistent with national figures provided by the GAO study (2007:12), which found “the number of projects approved using categorical exclusions increased from January 2003 through December 2004—primarily because of

increased use of the four new categorical exclusions—and then decreased from January through December 2005.” To see a copy of the GAO graph, see Appendix F. Like the GAO findings, this study found a similar trend in the drop in frequency of project occurrence in North Carolina. This trend was also present three years beyond the time in addressed in the GAO study. Table 28 summarizes the frequency of project occurrence from 2003 through 2008.



When commenting on this trend identified in the GAO study, “Forest Service officials said that any number of factors could have influenced the increase and subsequent decrease in the use of categorical exclusions over the 3-year period.

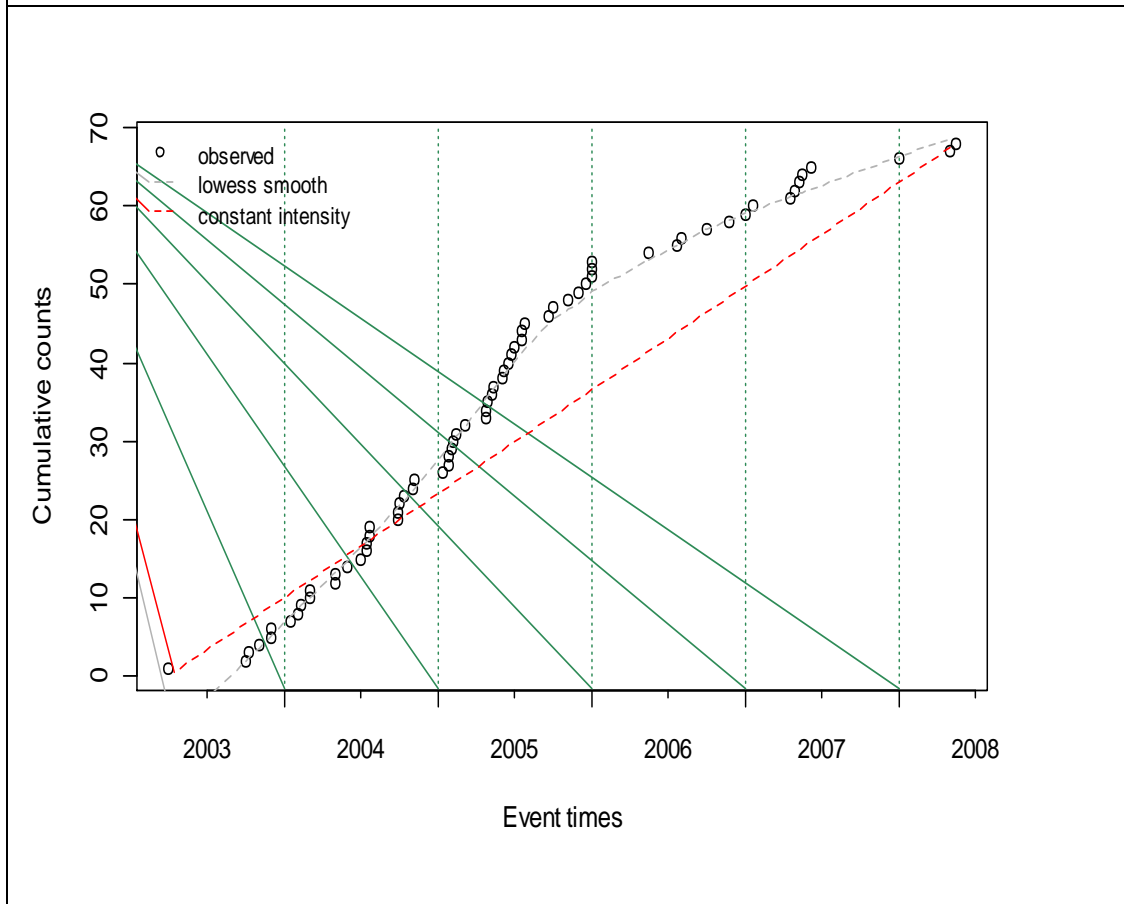
However, given the relatively short period of time during which the four new categorical exclusions were in use, these officials said that it was not possible to speculate why the decrease had occurred” (GAO 2007:12). This section addresses the decrease in the use of CE’s in order to more closely explore the factors contributing to the drop, and includes an analysis of projects proposed over six years, or double the period of time addressed in the GAO report.

Modeling the Intensity of Project Occurrence

One graphical way to assess whether events are occurring at a constant rate over time is to plot the cumulative number of events versus time. If the rate is constant, then the scatter should approximate a straight line whose slope is the average occurrence rate—the total number of events divided by the length of the observation period.

Figure 6 displays this plot for the project data with a scatter plot smoother superimposed. The straight dashed line is the expected accumulation of events under a constant occurrence rate. From the plot, it is clear that events initially occurred at a rate faster than the average rate until sometime in 2005 after which the rate decreased to less than the average rate. In other words, during 2005, something happened to reduce the frequency of projects occurrence (proposed), as seen by the decreasing space between the arching line and straight line between 2006 and 2008. The actual accumulation of events (grey dashed line) should be contrasted with the expected accumulation under a constant rate (red dashed line).

Figure 6. Plot of the cumulative number of projects over time.



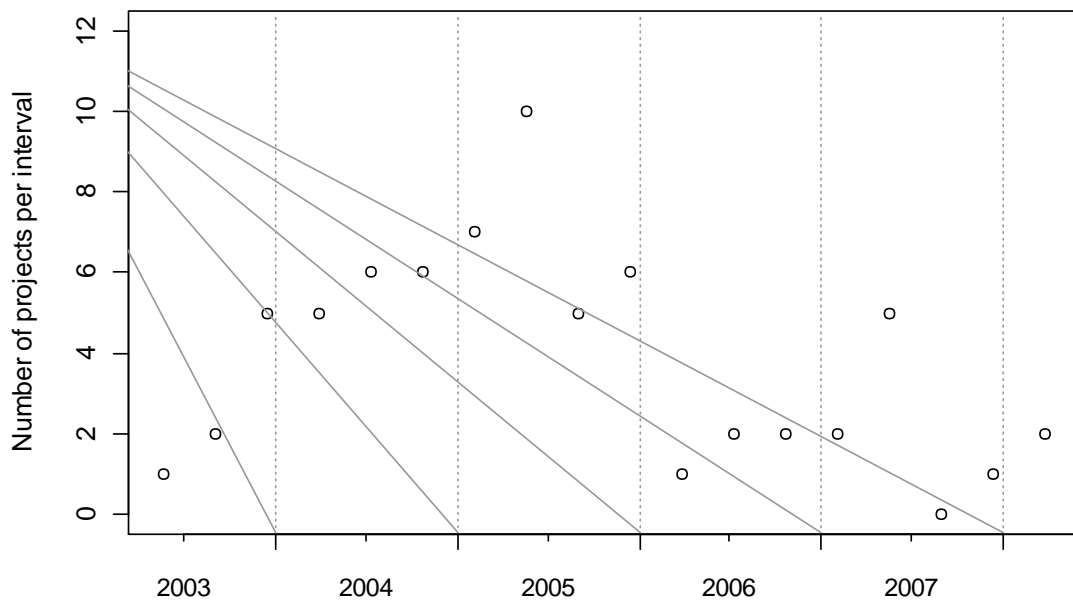
Analyzing the number of events that occur in finite intervals over time

If we divide the total elapsed time into a sequence of equal-length intervals we can use the total number of events occurring in these intervals to look for patterns over time by fitting various models for the intensity (occurrence rate) and determining which of these models best describes what was observed. Because the data consist of counts Poisson regression is an appropriate tool for this purpose.

Fig. 2 displays the count pattern that is obtained when the total time period is divided into 18 intervals of equal length. In this case, there appears to be an increasing

linear trend during the years 2003-2004, after which the number of counts decreases although perhaps not monotonically (see the separate rebounds in 2006 and 2007). See Appendix E for a discussion of additional models considered, including various polynomial regressions as well as piecewise linear models.

Figure 7. Number of projects per interval when time is grouped into intervals of length 104 days yielding a total of 18 intervals.



These findings confirm that the Forest Service substantially reduced the frequency of CE projects proposed around the middle of 2005. This corresponds directly with the July 2005 *Earth Island Institute v Pengilly* ruling, which reinstated the public right to appeals an agency project. As Chapter Nine explains, this inverse relationship between public participation and the frequency of projects proposed by the Forest

Service suggests that the agency does not consider the public an apathetic, easily manipulated body. Instead, the increase of public participation appears to have the specific effect intended by Congress: making agency employees more responsive to the interests of the public with the threat of administrative appeals and public scrutiny.

RELATIONSHIPS BETWEEN VARIABLES OF INTEREST: “WHERE WAS WHAT?”

Before we address WHEN variables (discussed below), this section explores the relationships between the WHAT and WHERE project characteristics. As the previous section provided a description of the policy and project characteristics regarding Healthy Forest Initiative projects in North Carolina, the next level of analysis explored the possible patterns and relationships between the selected policy and project-related variables of interest. Specifically, this analysis explores where the Forest Service in North Carolina proposed the different projects (according to the CE type and primary purpose). These response and explanatory (dependent and independent) variables investigated in this section offer a glimpse into the influences and processes involved in the implementation of the Bush Administration’s Healthy Forest Initiative in North Carolina.

The contingency tables in this section explored the potential relationship between CE type and purpose response variables (What) with eco-region, national forest, and ranger district (Where). Chi-square tests were used to examine the relationships for levels of significance, or evidence for rejecting independence, between the response and explanatory variables.

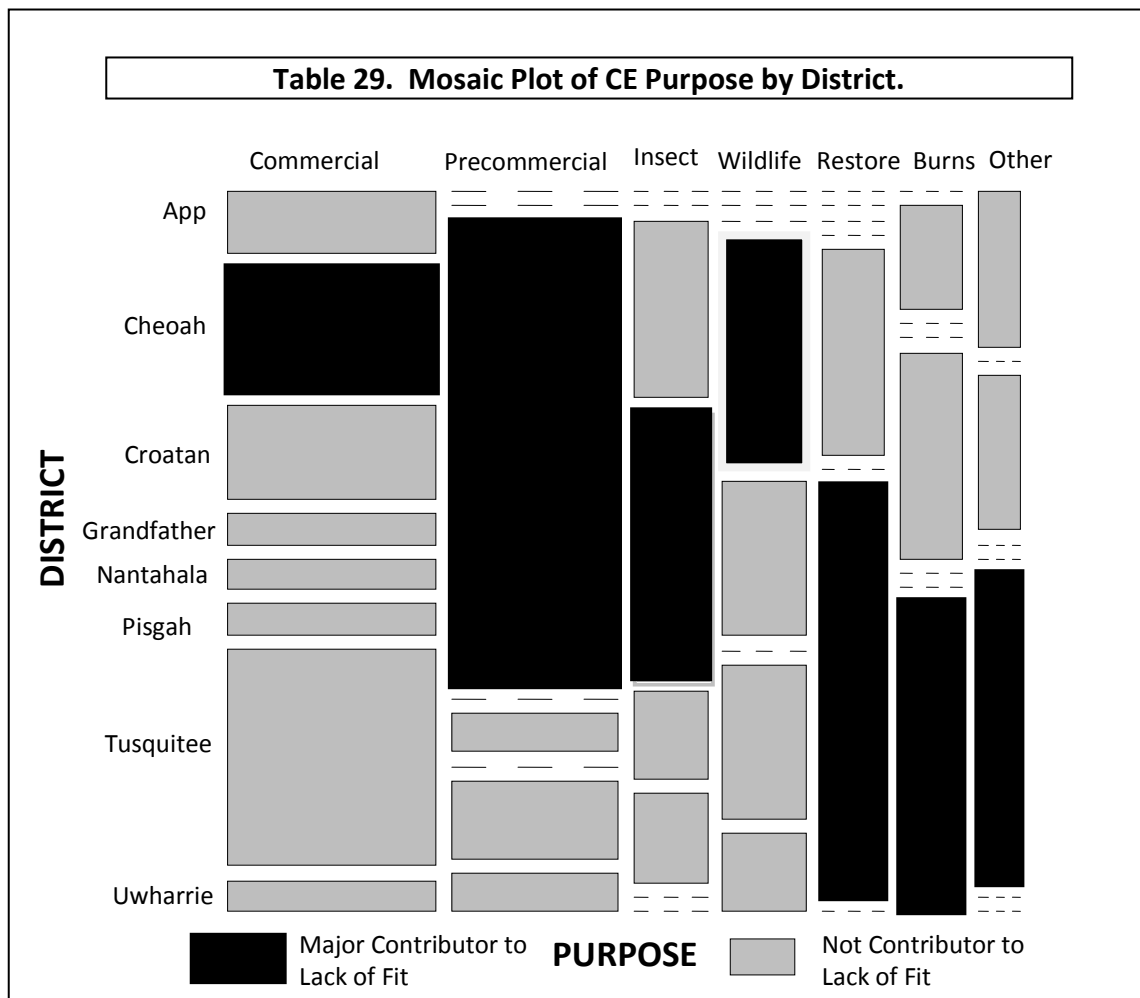
Additional analysis of the chi-square statistic is conducted using the standardized residuals to explore precisely which observations in the contingency tables deviated from expected frequencies and are, therefore, responsible for rejecting the independence model. A null hypothesis holds that the explanatory and response variable found in the data are completely independent and are therefore indistinguishable from a random pattern. If the chi-square test fails to uphold the independence model, standardized residuals are then used to determine which values are major contributors to rejecting the null hypothesis.

After creating a contingency table in Excel, they are run through the “R” software to produce a chi-square statistic. In addition to the chi-square statistic outputs, R can produce the residual outputs. If the chi-square statistic is significant, the residuals greater than 2.00 show the researcher which parts of the contingency table led to the significance. Finally, once the residual observations are identified, explanations are presented based on evidence in the project files to explain the significance found in the table. Tables 28 and 29 provide mosaic plots demonstrating the significant residuals analyzed in this section.

Hazardous Fuels Reduction Burns (CE 10) in the Uwharrie National Forest

Based on the ***where*** response variables (described above), the authorization of CE 10 for prescribed burning in the Uwharrie consistently contributed to the rejection of the null hypothesis of independences at regional, forest, and district levels. The number of prescribed burns authorized on the Uwharrie National Forest was more than three times the predicted levels. Among the different patterns and relationships tested

in this section, the use of CE 10 for prescribed burnings in the Uwharrie National Forest contributed most to rejecting the independence model. In short, the pattern of CE's proposed in the national forests in North Carolina is clearly not random, and the Hazardous Fuels CE proposed for the Uwharrie explained this dependence more than any other relationship. The mosaic plot from Table 29 shows the portion of burns on the Uwharrie National Forest (bottom-right) was significant.



Regardless of the potential benefits and harms from these projects, they are by definition “significant” simply by virtue of the extent of acreage treated and

concentrated in one distinct. In 2007, the U.S. Ninth Circuit of Appeals held in *Sierra v Bosworth* that the HFI CE 10 was illegal precisely because the agency had not considered cumulative effects of these large burns when proposing the rule changes in 2003 (510 F.3d 1016, 9th Cir. 2007). The Ninth Circuit held, “The Forest Service’s conclusion to the contrary was arbitrary and capricious because the Forest Service: a) did not analyze or address the cumulative effect of all of the projects to be covered; b) based the Fuels CE on an acreage limit despite its finding that there is no correlation between acreage and significant impacts; and c) based its review of impacts of nearly 80% of the projects in the data call solely on the subjective ‘personal observation’ of its employees” (510 F.3d 101). In November, 2008, the District Court formally enjoined the agency from using the HFI CE (Bosworth: 2008:1570).

Additionally, the court found the collaborative decision-making process (discussed in Chapter Six) showed the agency was following a case-by-case approach to implementing the projects, which is not legal for projects that theoretically fit in a predetermined category of actions (CE) that do not, individually or cumulatively, have significant effects. According to the Ninth Circuit, this approach is contrary to the laws governing CE’s exempted from NEPA’s requirements precisely because there should be no site-specific significant effects to deliberate about.

Pre-commercial Thinning in the Croatan National Forest

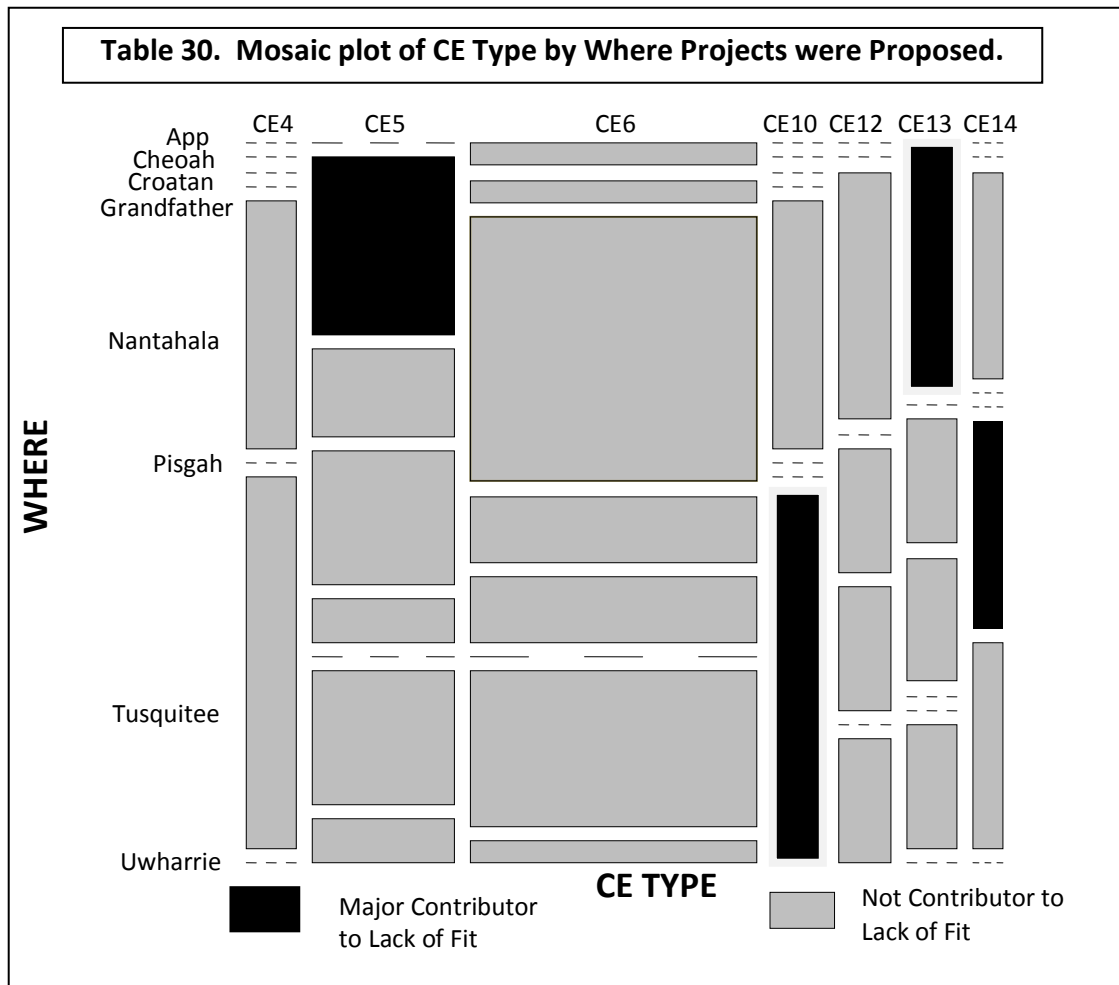
The next important finding relates to the disproportionate use of pre-commercial thinning in the Croatan National Forest compared to other regions identified in this study (see Table 29). In addition to the high ranking described in the

previous section, pre-commercial logging in the Croatan consistently contributed to the rejection of the null hypothesis of independence. The use of pre-commercial thinning on the Croatan occurred nearly three times the predicted values when compared to the other forests and districts in the state.

The Blue Ridge region also contributed to the rejection of the independence model based on the lack of pre-commercial thinning. With more than two times fewer occurrences than predicted, the forests in the Blue Ridge region had substantially less pre-commercial thinning when compared to the other regions in the state (see Table 29). One potential explanation for this low level of pre-commercial thinning in the Blue Ridge relates to the substantial history of commercial forestry on the Croatan compared to the Blue Ridge forests (Frost 2000).

Weather-related Commercial Logging on the Appalachian District

While the Blue Ridge had uncommonly few pre-commercial thinning projects, another important finding relates to the high occurrence of weather-related commercial logging projects (CE 13) on the Appalachian Ranger District in the Pisgah National Forest. In this case, the use of the new HFI CE (#13) was authorized over three times more frequently than predicted by a model of independence. The mosaic plot in Table 30 shows the portion of projects authorized under CE #13 for weather-related salvage commercial logging as significant (top right corner).



The Dillingham Salvage project on the Appalachian is one of the CE 13 projects contributing to the rejection of the independence model. In addition to being one of the most controversial commercial logging projects based on public participation (see Chapter Seven), the project also had four sensitive species representing extraordinary circumstances, which before the HFI would have prevented the agency from moving forward with the use of a CE for this project.

Insect-related Commercial Logging on the Grandfather District

Another important finding identified through the chi-square tests was the higher than predicted use of insect-related logging on the Grandfather Ranger District in the Pisgah National Forest. Based on independence models, the Forest Service authorized more than twice the predicted number of projects targeting southern pine beetles. The mosaic plot in Table 29 shows the levels of significance (middle of the plot) for Southern Pine Beetle projects authorized by the Grandfather Ranger District.

This finding is striking given the fact the Uwharrie and Croatan National Forests, not the Pisgah, have substantial pine forests compared to the Blue Ridge ecoregion. Despite this difference, the Grandfather issued as many projects targeting Southern Pine Beetles as the combined total from both other forests. In fact, 37 percent of all insect-related CE projects in North Carolina were issued by the Grandfather district. Additionally, the Pisgah National Forest issued more HFI CE's (#14) for insect related "sanitation" harvests than predicted, which contributed to the rejection of the interdependence model.

The Grandfather Ranger District also proposed more than twice the number of wildlife opening projects than predicted by a model of independence (see Table 29). This was one of the major contributors to the significant chi-square statistic (98.9244, p-value = 1.715e-06) (see Table 31). Although it is not possible to provide a definitive answer, given the available data, the potential relationship between the occurrence of wildlife openings and Southern Pine Beetle outbreaks in the Pisgah National Forest is interesting. Given the scientific consensus in the literature that artificial openings and

logging intensify pest outbreaks like Southern pine beetles, future research should explore the extent to which the disproportionately high level of wildlife openings on the Grandfather contributed to the substantial frequency of insect-related outbreaks occurring throughout the Pisgah National Forest.

Commercial Logging and Regeneration (CE 5) on the Cheoah Ranger District

Another significant finding from the Blue Ridge projects documented by the chi-square tests relates to the frequency of the regeneration CE (#5) and commercial logging on the Cheoah Ranger District (see Tables 29 and 30). According the project files, the Cheoah issued more than twice the number of commercial logging projects under the regeneration CE than predicted by a model of independence.

Interestingly, while the primary purpose for the project was commercial, many projects were designed for Southern Pine Beetle “prevention.” Unlike other insect-projects where the wood products were not commercialized, these activities were classified as commercial because the agency was logging merchantable softwoods over eight-inches in diameter. Regardless of whether the projects were effective in preventing or aggravating insect outbreaks, the commercial logging component of these projects is obvious. Moreover, the significance of these outbreaks, concentrated in small pockets of the mountains, begs the question about the appropriateness of authorizing the projects under CE’s. Whether or not commercial logging may address these problems, the results are significant either way, which under NEPA requires the agency to address through an environmental assessment and EIS (see Chapter Nine).

Watershed Restoration on the Tusquitee Ranger District

Finally, the last relationship contributing to the significant chi-square statistic in this section relates to the use of watershed restoration projects aimed at illegal-ORV driving in the Tusquitee. As discussed previously, ORV's are a major use authorized by the agency, and the difficulty in preventing illegal trails has been identified by the agency as one of the four threats to the forests by the Forest Service (Bosworth 2006). Although it is difficult to determine with the available data, given the high frequency of these water restoration projects used on the Nantahala National Forest (100 percent), the agency is either more proactive about ORV uses in Tusquitee district, or the other offices simply do not have the capacity or interest to address them through the CE process.

The Uwharrie National Forest has extensive ORV use and allows them on every trail in the forest "except for a small portion of the Dickey Bell Trail located west of SR 6584 which is suitable only for use by ATV's or motorcycles" (Forest Service website). If the Forest Service in the Uwharrie National Forest authorized watershed restoration projects targeting illegal ORV access, these projects were not conducted through the CE process.

Likewise, the Croatan National Forest also has over 36 miles of roads designated for ORV use, including two trails running adjacent to the Pocosin and Pond Pine Wilderness Areas. As the Forest Service explained in the *Forest Scale Roads Analysis* for the Forest Plans, "Unauthorized use is also occurring on over 70 miles of unclassified roads and trail corridors. Many of these routes occur in the southern portion of the CNF,

coinciding with the highest occurrence of rare plant and animal species... Continued use of these unauthorized, user-created routes will further degrade sensitive habitats and expand OHV use into currently unused areas” (2003:9).

Although the Croatan and Uwharrie National Forests have substantial legal and illegal ORV use, the Nantahala was the only part of the federal forest system in North Carolina that was implementing measures to address this threat. Additionally, given the conspicuously low level of objections by the public toward these measures to address illegal ORV use (described in Chapter Seven), the increased use of these projects is justified on ecological and democratic grounds (see Chapter Nine).

Summary Of Patterns: “What Forest Management Occurred Where?”

This section followed the description of the project characteristics (*what, where, and when*) in the data set with an analysis of the relationships between several variables of interest. This section compared where the different CE’s occurred based on eco-region, national forest, and district. The CE’s were defined by Type and Stated Purpose as described in previous section, including nine available CE’s (# 3, 4, 5, 6, 10, 11, 12, 13, and 14) and seven available reasons given by the agency for the projects (pre-commercial, commercial burns, restoration, wildlife, Southern Pine Beetles, and other). All of these relationships were statistically significant, or non-random, as explained in this section. Table 31 summarizes the results of the chi-square tests from this section.

Table 31. Chi-Squared Tests: CE Type And Purpose By Location.		
	Categorical Exclusion Type	Stated Purpose
Ecoregion	28.1502, p-value = 0.01359	41.7555, p-value = 3.661e-05
Forest	61.7661, p-value = 1.057e-06	61.7661, p-value = 2e-05
District	107.1683, p-value = 3.172e-06	98.9244, p-value = 1.715e-06

CONCLUSION

In conclusion, the policy and project characteristics discussed chapter documented several notable forest management trends occurring under the Healthy Forest Initiative in North Carolina from 2003 through 2008. Consistent with other studying in the management literature, the current study showed that the most common stated purpose for a CE project proposed in a North Carolina national forest was for commercial logging (29 percent of the time). To authorize this management, the Forest Service used a controversial CE for “timber stand improvement,” (TSI) which combined with pre-commercial thinning to account for over 38 percent of all projects.

The Tusquitee Ranger District in the Nantahala National Forest authorized the most commercial forestry projects relative to other ranger districts, while the Croatan National Forest authorized the pre-commercial thinning more frequently than any other. While the Uwharrie was the smallest national forest included in this study, the amount of acreage authorized for treatment (mostly using the HFI Hazardous Fuels CE #10) accounted for most substantial portion of management documented in this study. The Nantahala National Forest used the TSI CE most frequently, and, subsequently, the forests treated through this process included more federally listed and rare species than

any other district. Finally, two-thirds of all the projects authorized in the Appalachian Ranger District in the Pisgah National Forest relied on the new HFI CE's for Salvage logging and "Limited" commercial logging. These included the Dillingham Salvage Project and the Catpen Stewardship Project, two of the most controversial projects identified in this study.

The new HFI rules for extraordinary circumstances allowed the Forest Service to authorize 42 projects (63 percent) of projects with documented occurrences of federally listed Endangered, Threatened and Sensitive species. The presence of archeological resources, Inventoried Roadless Areas, and other extraordinary circumstances pushed to total number of projects influenced by this HFI rule change to at least 66% of all projects authorized in North Carolina. Other extraordinary circumstances (Native American cites, steel slopes, etc) were not included in this analysis, but would likely increase this percentage of projects authorized under the new HFI rule.

As explained in Chapter Seven, this dominance of commercial forestry management resulted in a substantial level participation by commenters with interests in ecological forestry. These participants overwhelmingly opposed Forest Service projects, and accounted for 80 percent of all critical comments received by the agency (see Primary Sources of Concern and Potential Effects section in Chapter Seven). Given this type of participation, it is not unsurprising the Forest Service substantially reduced the frequency of projects issued in North Carolina after federal courts reinstated the right for citizens to administratively appeal agency decisions.

The following chapter provides a summary of the forest management and decision-making processes occurring under the Healthy Forest Initiative in North Carolina. While the policy and project characteristics identified in this chapter explain whether ecological or commercial forestry best explains the forest management practices, the process and participant characteristics identified in Chapter Seven provides an understanding of the model of democratic theory that best describes the decision-making process occurring under the Healthy Forest Initiative. Finally, Chapter Nine briefly describes the policy implications emerging from these findings to best answer practical and theoretical questions about ecology, democratic theory, and U.S. National Forest management.

CHAPTER NINE: CONCLUSIONS AND POLICY IMPLICATIONS

What remains confusing and troubling to me is that the Forest Service seems to consider itself as our most important constituency. We are much more adept at being aware of and acting on the “best interests” of the Forest Service than we are the best interests of the public. This introversion hasn't served us well for the last 20 years and it won't in the future. We will never truly “serve people” until we have the courage to tell our own employees that we need to set our own precious views aside.

James Furnish
Departure memo

INTRODUCTION

Using records research, content analysis, and archival data, this dissertation documented and analyzed how the Healthy Forest Initiative influenced public participation and conservation for “Categorical Exclusion” projects in North Carolina’s national forests from 2003 through 2008. The overall purpose of this dissertation was to determine which democratic theory best explained the decision-making process present under the Healthy Forest Initiative (HFI) in the Croatan, Nantahala, Pisgah, and Uwharrie National Forests in North Carolina, and what environmental outcomes resulted under the prevailing processes and individual U.S. Forest Service (Forest Service) decisions. Evidence from Chapters Six, Seven, and Eight will be cited in this chapter to substantiate which democratic theory(s) best explains the decision-making

process under the HFI, what environmental outcomes were generated by those decisions, and what might be some of the policy implications of these findings.

To evaluate the prevailing decision-making processes present in national forest management in North Carolina, characteristics of different democratic theories were identified in the literature (see Chapter Two). This chapter begins with a design adapted from Steelman's study (1996), in which she used two categories (elite and participatory) to evaluate the democratic structures present in the Monongahela National Forest planning process. Building on this approach, the current study used characteristics in Table 1 to provide a framework for evaluating whether elite, pluralistic, deliberative, or agonistic democratic theories most adequately explained the processes for 67 HFI projects issued in North Carolina. Finally, additional evidence from statistical modeling was used to identify patterns in the data to further explain the democratic processes and forest management present in the Healthy Forest Initiative.

Table 1. Characteristics Of Elite, Pluralist, Deliberative, And Agonistic Democratic Theories *				
	ELITE	PLURALISTIC	DELIBERATIVE	AGONISTIC
ROLE OF THE PUBLIC	Limited/Passive	Represented by interest groups	Represented by stakeholders	Active Citizens
LOCUS OF POWER	Vested in Elite	Vested in interest groups	Stakeholder Collaboration	Vested in Individuals
VALUE OF DEMOCRACY	Instrumental; as a means	Instrumental	Intrinsic	Intrinsic
VIEW OF FOREST SERVICE	Idealistic. Trusting and competent	Moderates the Political Arena	Devolved	Skeptical
PRIMARY CONCERN	Efficiency and stability	Political Accountability	Conflict resolution	Growth of Individual
LOCUS OF PARTICIPATION	Voting, ratifying leadership	Interest group negotiations	Consensus driven Local deliberation	Local participation, Dissent-based negotiation, argumentation
VIEW OF THE PUBLIC	Disinterested Skeptical, Malleable, Apathetic, Uneducated	Disinterested Skeptical, Malleable, Apathetic	Legitimate, Knowledgeable	Legitimate, Knowledgeable, Diverse, Active
* Adapted from Steelman (1996)				

The process and participant characteristics were evaluated using categories outlined in the conceptual framework from Chapter Three and analyzed in Chapter Seven (Figure 2). These characteristics were evaluated to determine whether elite, pluralistic, deliberative, or agonistic theories were confirmed.

Figure 2. Conceptual Framework For Research Design: Decision-Making Process.		
Decision-making process = f (Process Characteristics + Participant Characteristics)		
Decision-Making Process	Process Characteristics	Participant Characteristics
Elite Aggregative Pluralistic Deliberative Democracy Agonistic	Scoping Comments HFI Appeals Rule Collaboration	Who participated What they said How they said it

Following the discussion on the HFI's democratic traits, this chapter includes a discussion of forest management authorized under the Healthy Forest Initiative in North Carolina. The environmental outcomes were evaluated using policy and project characteristics explained in Chapter Eight to identify the prevailing forest management approach. Figure Two outlines the conceptual framework outlined in Chapter Three and analyzed in Chapter Eight.

Figure 3. Conceptual Framework for Research Design: Forest Management.		
Forest Management = f (Policy Characteristics + Project Characteristics)		
Forest Management	Policy Characteristics	Project Characteristics
Commodity forestry Ecological forestry	Extraordinary Circumstances Categorical Exclusions	Where project occurred What occurred When project occurred

DEMOCRATIC THEORY AND THE HEALTHY FOREST INITIATIVE

PROCESS CHARACTERISTICS

This first section discusses the process rules governing public participation under the Healthy Forest Initiative (see Chapter Six). The three specific opportunities for

public involvement analyzed in this dissertation (not including lawsuits) were pre-decisional scoping, administrative appeals, and collaborative decision-making. These process characteristics are discussed briefly here before addressing the specific participation characteristics below. Table 32 summarizes the findings based on the democratic model that most adequately described the process characteristics identified in this study.

Table 32. Model of Democratic Theory Supported by HFI Process Characteristics.				
	Elite	Pluralistic	Deliberative	Agonistic
Scoping	Partial Support	Support	No Support	Support
Administrative Appeals	Support	No Support	No Support	Partial Support
Collaboration	Support	No Support	No Support	No Support

Scoping

The scoping process is required by the National Environmental Policy Act (NEPA) to provide the public an opportunity to participate in determining whether significant issues are present in the proposed management area that would require the Forest Service to conduct an Environmental Assessment (EA) or an Environmental Impact Statement (EIS) (FSH 36 CFR 220.6(c)). The public is allowed to participate in scoping for all Forest Service actions, including those “categorically excluded” (CE) from NEPA’s EA process. Even for projects the agency considers routine (CE), a citizen could raise issues relating to extraordinary circumstances (discussed below), which required, before the HFI policy changes, the Forest Service to conduct an EA or EIS. This automatic trigger of

an EA by an extraordinary circumstance was eliminated by the Bush Administration as part of the first rule change under the HFI (see Chapter Five, Eight, and below).

In addition to announcing the call for scoping in the Schedule of Proposed Actions (SOPA) published online (see Chapter Three), the Forest Service is required to mail letters to citizens who have expressed interest in Forest Service management in the past. The agency is also required to publish a notice in one of the local newspapers.

Although this level of public involvement represents the least substantial form of participation (Germain 2001:115), the Healthy Forest Initiative did not restrict the opportunity for public scoping. In fact, there was evidence of 171 scoping level comments available in the projects files obtained for this study. This level of participation was substantial given the relatively obscure nature of CE projects and the expedited process through which they are approved.

The HFI did authorize, however, substantially more expedited management projects under the HFI through the CE process (discussed below), which limits the time and information available upon which the public is expected to comment. In fact, in a 2007 Oversight Hearing entitled “Management by Exclusion” by the House Subcommittee on National Parks, Forests and Public Lands, the Chair explained, “by categorically excluding forest plans and projects from NEPA, the Forest Service is excluding the ability of the public to be involved in the management of their publicly owned national forests”(Grijalva 2007:1).

In addition, the HFI authorized the Forest Service to approve more projects in sensitive forest areas where extraordinary circumstances were present, which were

previously off-limits to active management without substantially more environmental review (EA's). Furthermore, the HFI required the public to submit "substantive" comments with site-specific, relevant information about concerns over project designs to earn standing (or the right to appeal the projects). Given these new authorities, the Forest Service was authorized to propose projects in sensitive ecosystems, without complete documentation under an EA process, while requiring the public to submit substantive comments during the limited scoping process.

In short, the scoping process is generally supported by more participatory models of democratic theory. This is evident in the substantial level of public comments the Forest Service received through this process (n=171). The value of the scoping process was limited, however, by the cumulative effect of the HFI categorical exclusion, substantive comment, and extraordinary circumstances rules.

Appeals Rule

In addition to "pre-decisional" scoping-level comment periods, for over a century the public has had "the right to object" (Coulombe 2004) to Forest Service decisions by submitting administrative appeals challenging plans for forest-wide and site-specific, project-level activity. As Herbert Kaufman discovered in his seminal study of the Forest Service (1960:78), "It is accepted as one of the hardships of doing public business in a democratic government and is not ordinarily treated as a discredit, even if a field officer is eventually overruled." Under the HFI, however, the administrative appeals process was eliminated for CE projects by the "Appeals Rule" (see Chapters Six and Seven).

This HFI rule was active for less than three years before federal district and appeals courts severed it from the regulations (*Earth Island v Ruthenbeck*). During the three years the HFI rule was valid, the agency proposed 49 projects in North Carolina (not subject to appeal). After the Forest Service was enjoined from using the Appeals Rule, the agency authorized 18 projects over the next three years.

After *Earth Island v Ruthenbeck* (2005), the public was again allowed to appeal decisions, although appellants could only gain standing to appeal if they followed another HFI rule requiring “substantive” comments during the scoping process. Four years after it was established, the HFI substantive comment rule was invalidated in *Wilderness Society v Rey II* (2006) (See Chapter Five). During this window, the Forest Service was able to waive six of the 18 projects from appeal challenges if the agency determined the comments were not “substantial.” Of the final 12 projects open to appeal without substantive comment thresholds, only one project was appealed.

Under the HFI, the public participation process (administrative appeals) was substantially reduced before the federal courts invalidated the restrictions. Given the reduction in citizen participation rights under the HFI’s Appeals Rule and Substantive Comment processes, these processes of the HFI are best described by elite models of democratic theory that emphasize the need to restrict direct participation by the public. Furthermore, the lack of appeals filed after the courts reestablished these rules also supports more elite democratic views about the “view of the public” (discussed below), which considers the public apathetic and incapable of more sophisticated participation.

Collaboration

The HFI also included new requirements for collaborative decision-making for the Hazardous Fuels Reduction CE's and "Goods for Services" (GFS) contracts (see Chapter Five). According to the literature and the Forest Service Handbook, collaborative management processes are supposed to include deliberative negotiation, face-to-face involvement of key stakeholders, and consensus-based decision-making to resolve conflict (see discussion in Chapter Two). Of the eight projects authorized and implemented in North Carolina under rules requiring collaborative management, none exhibited any evidence of processes supporting deliberative models of democratic theory. Instead, Chapter Seven documented evidence in the project files supporting elite democratic theory and traditional commercial forest management.

One of the new HFI regulations with collaborative management requirements was the "Hazardous Fuels" CE #10, which was a procedure for expediting up to 1,000 acres of logging and 4,500 acres of prescribed burning. After being used by the Forest Service for four years, this CE was invalidated by the Forth Circuit Court of Appeals (*Sierra v Bosworth 2007*).

This expedited CE process, with theoretically no significant effect on the environment, was required by the HFI to be identified through a "collaborative framework" consistent with the agency's guidelines outlined in the *Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment – Ten-Year Comprehensive Strategy: Implementation Plan* (USDA & USDI 2002). Based on the evidence in the project files, none of the five HFI Hazardous Fuels Reduction projects

authorized in North Carolina had any evidence of collaborative decision-making of any kind.

Additionally, three other categorical exclusion projects requiring collaboration were authorized under the new Healthy Forest Initiative “Goods for Services” commercial forestry contract system. While creating new authorizes for the Forest Service to pay contractors with merchantable trees, the Forest Service was directed to establish a collaborative decision-making process to “involve States, counties, local communities, and interested stakeholders in a public process to provide input on implementation of stewardship contract projects” (FSH 61.12).

The Forest Service Handbook directs the agency “to involve a diversity of local interests and engage key stakeholders in collaboration throughout the life of the project, from project design through implementation and monitoring” (FSH 61.12). Although the Forest Service did claim to use collaborative decision-making in one of the projects, there was no evidence supporting deliberative models of democratic theory for any of the three Goods for Services HFI projects in North Carolina.

This lack of compliance with federal regulations can be partially blamed on the inherent tension between apparently incompatible management goals: expediting “insignificant” management projects while requiring time-intensive public deliberations for projects as big as 5,500 acres. Regardless of the reason, this lack of formal collaboration confirms the presence of elite models of democratic theory in these projects due to the lack of public participation or the Forest Service’s disregard for the opinions documented in the comments submitted (See Chapter Seven).

PARTICIPANT CHARACTERISTICS

The next section described the participant characteristics based on comments submitted to the Forest Service during the process characteristics (described above). The results from these two sections are used to define the HFI decision-making process according to alternate models of democratic theory.

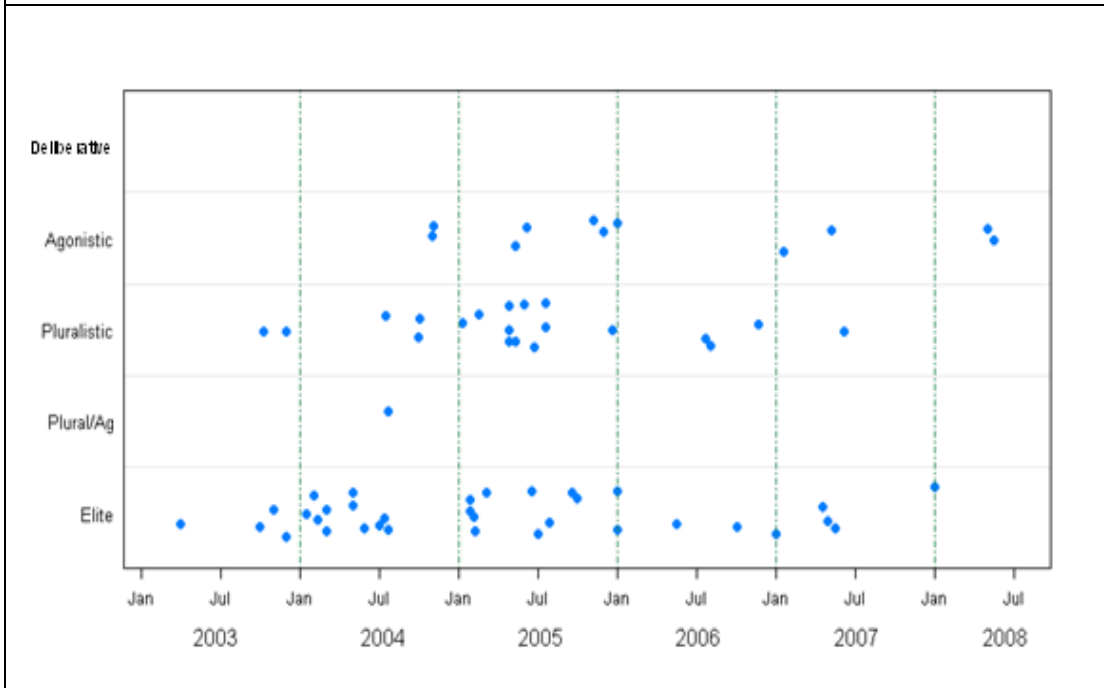
Role for the Public

The first participant characteristic addressed was “role for the public.” Elite theorists envision citizen involvement as passive (except for voting), while other participatory theorists advocate a process fostering more active involvement from the public. More participatory democratic models call for interest group representation (pluralistic), stakeholder negotiations (deliberative), or direct, “radical” involvement by active, independent citizens (agonistic). “Participation theorists state that the public will take advantage of the opportunities to participate, while elite theorists claim that the public is apathetic and uninterested in exercising its participatory right” (Steelman 1996:239). The analysis in this section determined which role the Forest Service prescribed for citizen participation.

In developing an understanding of the HFI decision-making process, the distribution of projects, based on the “role of the public,” offers one of the more useful methods for evaluating where projects fit according to their respective democratic theory (see Chapter Two). Figure 7 offers a visualization of the projects (based on the

corresponding democratic theory) over time, with jittered points to minimize overlap using a statistical package (Sing et al. 2007) from the CRAN site.

Figure 8. Dates of projects classified by model of democratic theory.



Evidence suggests that the presence of the elite model is supported in nearly half of the projects involving no public participation. The records research shows, of 67 projects proposed by the Forest Service between 2003 through 2008, the agency received no public comments in nearly 42 percent (n=28). In some cases, this lack of participation can be explained by the expedited nature of the categorical exclusion process, which was limited to scoping-level participation except in the 18 projects that included an appeals process. One project, for example, called the Tusquitee Hazard Tree Removal was apparently not scoped or announced to the public and included logging in areas along the original Cherokee Trail of Tears. In short, the lack of public

participation suggests the process fostered a passive role for citizens and interest groups in a substantial portion of the proposed projects.

The elite democratic theory was also supported by five additional projects where the public comments were either only from government agencies or they were completely supportive of Forest Service proposal. Comments from wildlife commissions or state forestry agencies are consistent with an elite democratic theory that suggests professional administrators from related government agencies, not the general public, should guide decisions. Comments lacking any form of opposition from the general public are also consistent with elite democratic theory's description of public trusts in agency decisions (discussed below). Given this level of participation by the public in Healthy Forest Initiative projects proposed by the Forest Service between 2003 through 2008, the evidence from these participant characteristics (Role of the Public) suggests that over 50 percent of the projects (n=34) support the presence of an elite model of democratic theory.

Evidence in the public comments supports the pluralistic model for approximately 32 percent (n=22) of the projects proposed in North Carolina under the Healthy Forest Initiative (see Table 32). Fourteen Non-Governmental Organization (NGO) participated in this process, providing a third of all public comments (n=57) identified in Chapter Seven. There was also a substantial level of opposition by interest groups, which contributed to the significant chi-square statistic identified in Chapter Seven. Although this participation supports the pluralist model, there was little

evidence that NGO's had an influence on the outcomes of the projects 22 projects in which it participated (discussed below).

Participation by unaffiliated individuals was most active in nearly 15 percent (n=10) of the Healthy Forest Initiative projects proposed by the Forest Service. As documented in Chapter Seven, nearly 17% (n=29) of all the comments received by the agency (n=171) were submitted by unaffiliated individuals (with one individual commenting on three projects). Furthermore, the substantial level of objections raised by individual citizens contributed significantly to the chi-square statistic (discussed in Chapter Seven.) This level of direct involvement supports a participatory, agonistic theory of democracy given the focus on "radical" (Mouffe 1999) direct participation by citizens (see Chapter Two). In short, this significant level of participation from individuals (often with ecological forestry interests) suggests theories about direct, dissent-based conservation (Peterson 2004) are supported by these 10 projects. As the next section demonstrates, the level of conflict (by individuals and interest groups) also upholds another feature of agonistic models of democratic theory: conflict and confrontation.

Finally, there was no evidence of any collaborative decision-making, as defined by deliberative democratic theory or the Forest Service Handbook. Although eight projects were authorized under policies that required or recommended collaborative management, Chapter Seven demonstrated that none of these projects conform to deliberative, collaborative models. Instead, these projects followed the conventional

scoping-level participation, which is considered by theorists (Germain 2001) as the least substantial form of participation.

While the Forest Service claimed it was fostering collaborative decision-making processes in the Fires Creek Stewardship Project, the project file contained no evidence of any pre-decisional meetings, consensus-based negotiations, or any other evidence of collaboration. In short, there was no evidence of collaborative decision-making in North Carolina from 2003 through 2008 under Healthy Forest Initiative, despite the substantial emphasis placed on this approach by the Bush Administration (see Chapter Six).

Based on the “role of the public” participation characteristics, the Healthy Forest Initiative explains the processes occurring in nearly 48 percent of the projects, while pluralist theory offers a description of nearly 32 percent (n=22) of the projects. Individual, direct participation (agonistic) was present in over 16 percent of the projects. Deliberative theory, and operational management (collaboration), was not present, based on the participant characteristics explored through this “role of the public” evaluation. Table 33 provides a summary of the “role for the public” results for the project types based on elite, pluralistic, deliberative, or agonistic democratic models.

Table 33. Overview of the Number of Project Types for “Role of the Public” Based on Participation Characteristics.					
	Elite	Pluralistic	Deliberative	Agonistic	Plural/Ag
Projects	50.75%	32.84%	0.00%	14.93%	1.49%
n=67	34	22	0	10	1

Role of Conflict

In addition to the specific representation of the participant characteristics, another level of analysis involved developing an understanding of the role of conflict or contestation initiated by commenters. In this case, the number of critical comments represented 57 percent of those received by the agency, while over 42 percent of the comments were either neutral or supportive. These critical comments were present in 34 projects, while the other 33 projects were either unopposed by the public or received no participation whatsoever. On the other hand, given that there was no record of consensus-driven, collaborative decision-making, none of the project files contained evidence of participant characteristics supporting deliberative models of democratic theory.

As Table 34 demonstrates, the “Role of Conflict” under the HFI was best explained elite, pluralist, and agonistic democratic theories. In addition to the direct role of individual participation (described above), agonistic theory also places substantial emphasis on conflict and the nature of confrontation. While agonism acknowledges the intractability of conflict, pluralist theorists also believe public scrutiny in politically accountable forums is a necessary condition of modern democratic governance.

Although the level of participation by unaffiliated individuals is rejected by pluralist and elite theorists, opposition from unaffiliated individuals was present in 11 of the projects, which supports more participatory, agonistic interpretations of democracy. Given that the majority of the individual comments were oppositional, and were not part of a deliberative decision-making process, these projects support agonistic

democracy's "radical" form of direct participation. Additionally, the presence of opposition from non-government organizations and interest groups upholds both the pluralist and agonistic models of democratic theory in approximately 22 of the projects.

This level of conflict is noteworthy given the statements by proponents of the HFI who argued policy changes were required to address highly contentious federal land decision-making processes. Instead, the conflict-resolution goals of the HFI themselves appeared to have triggered and intensified existing controversy over national forest decisions. Furthermore, while many in the resource literature have advanced collaboration (Wondolleck & Yaffee 2000; Leach 2006) or "cooperative conservation" (Bush 2004) as an alternative to the conflict-driven contemporary approach, the evidence from North Carolina shows collaboration was not possible under the categorical exclusion process (see policy implications below).

Table 34. Overview of the Number of Project Types for "Role of Conflict" Based on Participation Characteristic.				
	Elite	Deliberative	Pluralist/Agonistic	Agonistic
Projects	50.75%	00.0%	32.83%	16.41%
n=67	34	0	22	11

Locus of Decision-Making Power

The next characteristics addressed where the power of decision-making authority lay. As Steelman explained, "Elite theorist's state that decision-making power should rest with the bureaucratic or technical expert, while shared power in decision-making denotes a participatory process" (1996:237). Of the 67 projects identified

during records research, only four had evidence of public influence in modifying the final decision. Project files for the 63 other projects contained no evidence of any modifications to the projects based on the public participation process.

Four project files contained some evidence relating to a shared locus of decision-making power. In the Fire Creek Stewardship Project, the Forest Service dropped 15 acres of logging from an Inventoried Roadless Area (Cheoah Bald Roadless) after individuals and interest groups objected. Another project, the Pekin Wildlife Openings, appeared to be modified by public comments from individuals and groups, including an administrative appeal filed by the WildLaw law firm based in Asheville. One Longleaf Restoration Project on the Croatan National Forest appeared to be partially modified after an individual raised concerns relating to the retention of native pond pine. Finally, the pre-commercial thinning for Southern Pine Beetle Prevention was apparently modified after members of the NC Department of Environment and Natural Resources identified a population of *Solidago verna* (Spring-flowing goldenrod), a federal species of concern and a state threatened plant species.

Given that most projects were driven by commercial forestry management (see below), it is not surprising most of the opposition was based on criticism of the Forest Service's proposed commercial logging and pre-commercial thinning. The substantial lack of modifications of these commercial projects can be explained by the Forest Service's traditional bias toward commercial forestry over ecological interests (Twight & Lyden 1989; Twight et al. 1990). As Robbins explained in *Lumberjacks and Legislators* (1982) and *American Forestry* (1985), there has been a longstanding "highly congenial

relationship between the Forest Service and the commercial interests consuming national forest outputs.” In *Timber and the Forest Service*, former Forest Service historian David Clary documented a strong timber production bias based on the agency’s historical goal of maximum commercial logging (1986: 199).

The evidence based on “Locus of Decision-making Power” upholds the elite theory, given the Forest Service’s longstanding affinity with resource extraction interests to the exclusion of ecological forestry (Hirt 1994, Hays 2007). Table 35 summarizes the data supporting the elite models with regard to the locus of decision-making power in the process.

Table 35. Overview Of Locus Of Decision-Making Power In The Process For 67 Healthy Forest Initiative Projects In North Carolina From 2003 Through 2008.				
	Elite	Pluralistic	Deliberative	Agonistic
Decision-Making Power	94.03%	4.48%	00.0%	1.49%
n=67	63	3	0	1

View of the Forest Service

The trust placed in agencies by the public provides another criterion to describe the characteristics of the democratic process present under the Healthy Forest Initiative. While elite theorists would predict little opposition or skepticism about the proposed management projects, more participatory models would hold a less trusting attitude toward the agency. Unlike elite models, scholars with pluralist, deliberative, and agonistic models of democratic theory “believe the public should not be trusting of bureaucratic experts to protect their interests. They are skeptical of the bureaucrat’s

ability to infer preferences” (Steelman 1996:235). Studies of public attitudes show participants expect their contributions to have quantifiable effects on the final decisions (Knopp and Caldbeck 1990; Brown & Harris 1992), and that “dissatisfaction with the overall process” can trigger further confrontation when participants perceive the process was unfair, ineffective, or inefficient (Germain 2001:119)

Based on the evidence obtained through content analysis in Chapter Seven, nearly 58 percent (n=99) of all comments contained objections, while over 42 percent (n=72) of the comments were supportive or neutral toward the Forest Service’s 67 projects proposed from 2003 through 2008. Of the 801 specific issues addressed in the comments, nearly 84 percent (n=669) were oppositional, while 16 percent (n=132) were supportive. Additionally, concerns about the process combined to account for nearly 19 percent of all specific issues identified, including concerns about information disclosure (6 percent), documentation (3 percent), forest plan compliance (3 percent), and expedited comment periods (one percent). These findings demonstrate a healthy level of distrust and concern among commenters with the Forest Service, which supports more participatory models of democratic theory that emphasize public skepticism toward bureaucracies.

The lack of participation by commercial forestry interests also contributed to the significant chi-square statistic identified in Chapter Seven. As discussed, this trust in the agency by those with commercial forestry interests explains the relatively low level of formal participation by individuals with commercial forestry interests (less than 7 percent), the lack of formal participation by commercial forestry NGO’s (1 percent of all

comments), and the absence of any documented process concerns identified by commercial forestry groups. This is consistent with Steelman’s finding of low participation by commercial forestry interests who “did not participate in the public comment period. They felt their interests would be safeguarded by the Forest Service” (1996:235). This level of participation by commercial forestry interests further supports elite theorists who believe the public is trusting of the agency’s ability to make choices that benefit their interests.

This opposition from the public to the Forest Service was concentrated in over 50 percent (n=34) of the projects identified in the study, with objections from both unaffiliated individuals and interest groups as major contributors to the significant chi-square statistic found in Chapter Seven. Another 28 projects received no comments, four projects received public comments without any objections, and one oppositional project was filed by a government agency. In other words, over 87 percent (n=34) of the projects with comments (n=39) were opposed by the public. Table 36 summarizes the projects supporting democratic models by view of the Forest Service.

Table 36. Overview of Projects By View of the Forest Service.					
	Elite	Pluralistic	Deliberative	Agonistic	Pluralist/Agonistic
View of the Forest Service	47.76%	34.32%	0%	16.41%	1.49%
n=67	33	22	0	11	1

Therefore, these findings are consistent with both elite and participatory models of democratic theory, based on evidence that a substantial portion of the objections and

mistrust within public comments for over half of all projects. The other half of the projects received no objections or skepticism whatsoever. Given the large portion of critical comments filed by the public, these findings are consistent with the discussion of the “Role of the Public,” discussed previously showing similar results (See Table 32).

Locus of Participation

This section explores where participation originated, based on local (in-state) or non-local (out-of-state) participation. Deliberative and direct participation theorists believe citizen involvement is most democratic when it originates at the local level. Elite and pluralistic democratic theorists, on the other hand, argue democracy is best understood during voting or ratification to select leadership represented by elected legislators, appointed officials, or interest groups, regardless of location. As Steelman explained, participatory theorists believe citizen input “is most effective, and therefore most likely, at the local level, for that is where the individual receives the most potential benefit from her involvement and where the costs of individual participation are lowest” (1996:241).

The relationship between local and democratic citizen participation, however, is commonly debated in the literature (see Chapter Two). While many scholars argue local participation in federal land management produces better decisions (Wondolleck & Yaffee 2000), others warn against an uncritical move toward devolution and deregulation that can be controlled by powerful commercial interests that commonly dominate agency decisions (Kaufman 1960; Twight & Lyden 1989; Coggins 1999; Abel & Stephan 2000; McCarthy 2005). Abel and Stephan question whether “mechanisms for

participation that are nominally participatory may instead be more conducive to elite or pluralistic participation” (2000:618). In short, while local participation does not automatically translate into more democratic control by independent citizens instead of powerful commercial interests, this analysis can be cautiously used to assess the form of participation.

Commenters in this study had local residency 95 percent (n=162) of the time, while out-of-state comments came from fewer than five percent (n=8) of the participants. Local comments were concentrated in 32 projects, with interest groups dominating 20 projects, and local individuals providing a substantial portion of participation 12 projects. The remaining 35 projects received no participation (28 projects), were dominated government employees, or were non-local commenters. There was no participation by stakeholders, local or otherwise, that would conform to deliberative democratic theory. Table 37 summarizes the data for “Locus of Participation” described in this section.

Table 37. Overview of Participation Democratic Theory by Locus of Participation.					
	Elite	Plural	Deliberative	Agonistic	Pluralist/Agonist
Locus of Participation	52.24%	29.85%	0.00%	11.94%	5.97%
	35	20	0	8	4

This substantial level of local participation helps explain the number of comments from individuals and NGO’s, which combined to share over 50 percent of the total comments. Sirianni and Friedland have argued this amount of direct participation is common at the local level (1995), and Abel and Stephan claim independent citizens

become involved in local issues due to the proximity of “direct impacts on their neighborhoods and families” (2000:617).

View of the Public

The final participant characteristic evaluated in this chapter is the “View of the public.” While elite theorists describe the general public as uneducated, irrational, and a destabilizing force on governance, participatory models of democratic theory consider individuals as legitimate, knowledgeable, and informed contributors to agency decision-making. Like elite theorists, “who view the public as apathetic, irrational and easily manipulated participants,” (Steelman 1996:243), pluralists also consider direct participation by independent citizens as inefficient and unstable (Dahl and Lindblom 1953, 1956, 1961). More participatory models of democratic theory, however, “envision the public as a capable, discerning and knowledgeable participant (Steelman 1996:243).

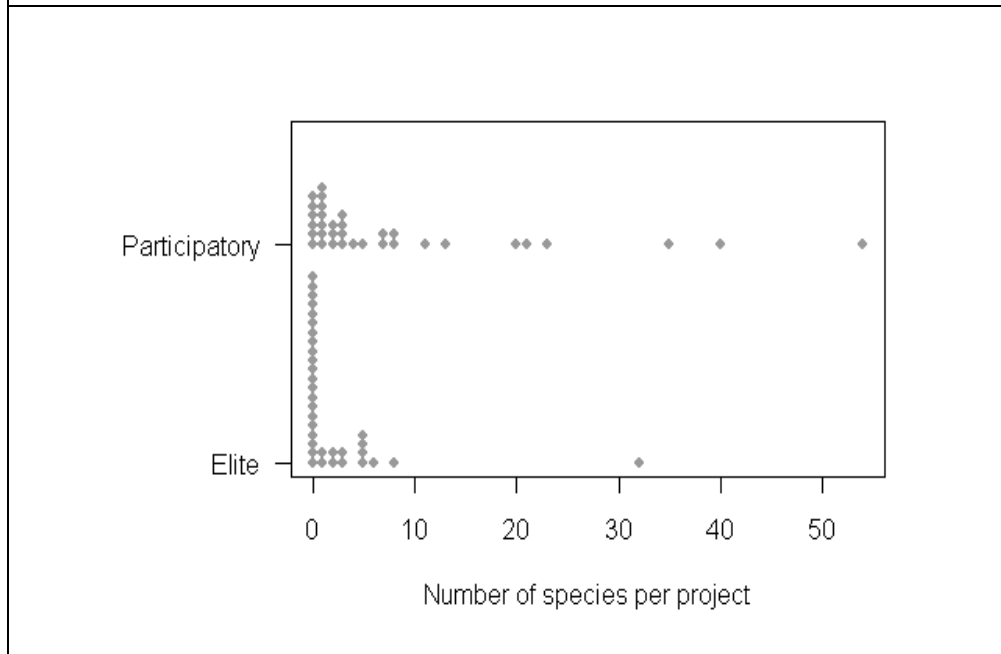
Evidence from Chapter Seven demonstrated the lack of any public participation in over 28 Healthy Forest Initiative projects proposed by the Forest Service from 2003 through 2008. This confirms elite descriptions of the public as disinterested in these management decisions, and is consistent with traditional resource management approaches that are overrepresented by client interests (Stewart 1975; Twight & Lyden 1989) and unlikely to benefit the common interest (Steelman & DuMond 2009). Within the remaining 39 projects with public comments, 41 percent equaled, or were less than, one page in length, while a majority, however, wrote more. This explains why the most

comments contained greater levels of detail about specific project issues (70 percent) than those with little or no discussion (30 percent).

Looking at the substance of participant's comments, however, reveals a substantial level of local knowledge about species occurrences. As Chapter Seven discussed, the public expressed concern with ecological forestry issues in over 46 percent of the comments, and nearly half of all commenters identified with ecological forestry interests. This is noteworthy, given that the public was more likely to participate in projects where endangered, threatened, and locally rare species were present.

As figure 5 showed, the relative number of species found in each project were greater for projects that attracting more participation (participatory), while the projects without participation or with comments from predominantly government agencies (elite) showed fewer number of species. The elite category showed a greater concentration of projects (dots) with fewer numbers of species present (x-axis) compared to the participatory project, which accounted for virtually every project with the largest concentrations of species except for one outlier. In fact, when combined with acreage, the presence of species could successfully predict public participation 81 percent of the time (see Chapter Seven).

Figure 5. Distribution of log(#acres) by project type (the log is essentially the exponent of the acreage number).

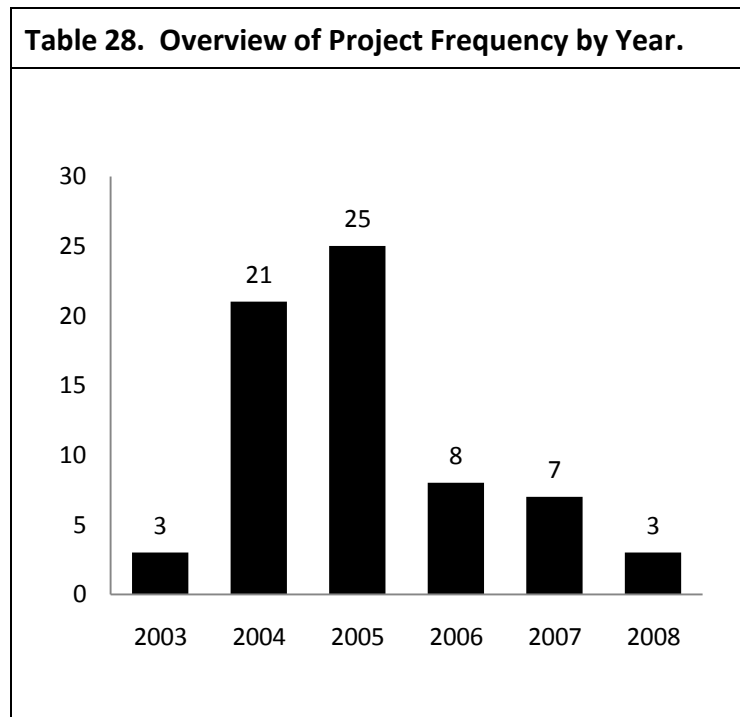


Moreover, the Forest Service does not release results from species surveys for Categorical Exclusion projects until after the decision has been announced in a Decision Memo (DM). This indicates the public had access to other sources of local knowledge about these species beyond the information documented by the Forest Service. This level of local knowledge confirms more participatory models of democratic theory, and rejects the claim made by elite scholars that the public is apathetic and disinterested in governance.

Additionally, Chapter Eight documented a drop in frequency in project occurrence after the public was granted more substantial participation rights after the federal courts invalidated the HFI “Appeals Rule” (*Earth Island v Ruthenbeck* 2005). The evidence found in this North Carolina case study (see Chapter Eight), as well as in a

national study (GAO 2007), supports more participatory models of democratic theory.

Table 28 summarizes the changing rate of projects proposed over the six years analyzed in this study.



Once participation rights were increased (administrative appeals), the Forest Service substantially reduced the frequency of proposed projects. This can be explained by the agency's fear that the public might potentially discover issues supporting an administrative appeal based unlawful management practices or on flawed project designs. If the public was apathetic, irrational, and easily manipulated, it is unlikely that the Forest Service would have substantially reduced the frequency of projects proposed after administrative appeal rights were reinstated by the federal courts.

This reaction by the agency demonstrates it did not consider the public as incapable, disinterested, or easily manipulated participants. Therefore, the

participatory models of democratic theory that embrace involvement by independent, dissenting citizens (agonistic) is supported over other interpretations of democracy that consider the public as uneducated (elite and pluralistic) and requiring conflict-avoidance, consensus-based negotiations (deliberative democracy).

SUMMARY HEALTHY FOREST INITIATIVE DECISION-MAKING PROCESS

In conclusion, the HFI decision-making process is most supported by elite models of democratic theory, while there is also some evidence supporting pluralist and agonistic democratic theory. For the majority of the projects, the Forest Service received no comments (Role of the Public), and when the public participated, the agency maintained control over the decisions (Locus of Decision-making Power). The public was far less trusting in the agency (View of the Forest Service) than would be predicted under elite models, while more participatory models provide better explanations for the substantial level of objections delivered by the public. Moreover, this opposition was primarily driven by local participants, which confirms the presence of more participatory models of democratic theory. Finally, the knowledgeable and active level of participation by the public (View of the Public), demonstrates the public was not an apathetic, impressionable body of automatons, as would be predicted by elite democratic theory. Instead, the public was most likely to participate when their interests (especially ecological) were at stake, and this participation substantially reduced the frequency of projects proposed by the agency.

Based on these findings, the HFI is best described as a decision-making process that conforms to elite models of democratic theory. This study demonstrates that the elite model was most present in the majority of the projects identified, while pluralist and agonistic models are also present, albeit not as substantially as the elite model. Finally, the deliberative model of democracy theory is not supported by any of the projects identified in this study. Table 38 summarizes the findings of the four categories used to describe the model of democratic theory present in the HFI in North Carolina from 2003 through 2008.

Table 38. Summary of the support for democratic models from projects authorized by the Healthy Forest Initiative in North Carolina from 2003 through 2008.					
	ELITE	PLURALIST	DELIBERATIVE	AGONISTIC	MIXED
Role of the Public	32	23	0	11	1
Role of Conflict	34	0	0	11	22
Locus of Decision-Making Power	63	3	0	1	0
View of Forest Service	33	22	0	11	1
Locus of Participation	35	20	0	8	4
Total Score n=335	197	68	0	42	28

The reaction by the public to the HFI, however, also shows support for some participatory theories (pluralist and agonist), while failing to uphold others (elite and deliberative democracy). As described previously, Table 38 includes the “View of the Public,” providing evidence based on local knowledge and the inverse relationship between project frequency and participation, which undermines support for traditional elite theories of democracy that consider the public as ignorant, apathetic, and

impressionable. Table 39 summarizes the decision-making process for projects authorized by the Healthy Forest Initiative in national forests in North Carolina from 2003 through 2008.

Table 39. Summary of democratic characteristic of Healthy Forest Initiative Projects in National Forests in North Carolina.				
	ELITE	PLURALISTIC	DELIBERATIVE	AGONISTIC
Role of the Public	Support	No Support	No Support	No Support
Role of Conflict	Support	Partial Support	No Support	Partial Support
Locus of Decision-Making Power	Support	Partial Support	No Support	Partial Support
View of Forest Service	Partial Support	Support	No Support	Support
Locus of Participation	Partial Support	Support	No Support	Support
View Of The Public	No Support	Support	No Support	Support
Total	3 support; 2 partial 1 No Support	3 support 2 partial 1 No Support	6 No Support	3 support 2 partial 1 No Support

FOREST MANAGEMENT AND THE HEALTHY FOREST INITIATIVE

In Chapter Eight, this dissertation documented and analyzed policy and project characteristics of the Healthy Forest Initiative to determine whether commercial or ecological models of forest management were confirmed by the data. Although a few projects exhibited characteristics consistent with ecological forestry (watershed restoration), this next section describes how the major policy changes, as well as the

vast majority of projects implemented under those policies, followed the traditional Forest Service support for commercial forestry.

This is consistent with the substantial body of research in the policy and conservation literature documenting a longstanding “highly congenial relationship between the Forest Service and the commercial interests consuming national forest outputs” (Robbins 1982). As former Forest Service historian, David Clary, documented, there is a strong timber production bias based on the Forest Service’s historical goal of maximum commercial logging; “The wood chopper’s voice will remain important, but someday it just might cease to be the dominant one in the Forest Service” (1986:199). Despite this prediction, the following section describes how, under the Bush Administration’s Healthy Forest Initiative, commercial forestry remained the dominant management model used for national forest management.

POLICY CHARACTERIZES

This section summarizes the overarching policy dimensions of the Healthy Forest Initiative by addressing two regulations promulgated by the Bush Administration. These policies are evaluated based on the evidence in the policy and conservation literature described in Chapter Four and Five. Table 40 summarizes the findings of the policy characteristics authorized under the Bush Administration’s Healthy Forest Initiative from 2003 through 2008.

Table 40. Model of Forest Management supported by the HFI Policy Characteristics.		
	Commercial Forestry	Ecological Forestry
HFI Categorical Exclusion	Support	No Support
Extraordinary Circumstances	Support	No Support

Categorical Exclusions

Statutory laws governing the Forest Service under the National Environmental Policy Act of 1970 (NEPA) require three processes of review for site-specific, project-level management. The Council of Environmental Quality (CEQ), the federal body responsible for implementing NEPA, requires, 1) an EIS for all projects that may significantly affect the quality of the environment; 2) an EA that documents a “Finding of No Significant Impact” (FONSI) or a notice to prepare an EIS; and, 3) in limited circumstances, undocumented review where the action fits into a previously defined categorical exclusion (CE). If the Forest Service determines that specific classes of management have no significant effect, individually or cumulatively, on the quality of the environment, regulations implementing NEPA allow the Forest Service to establish categories of management that are excluded from both the EIS and EA requirements (40 C.F.R. §§ 1507.3(b)(2)(ii); 1508.4.)

Under new provisions established by the Healthy Forest Initiative, the Forest Service authorized five new CE’s for Hazardous Fuels Reduction, Post-Fire Rehabilitation, “Limited” commercial logging, and weather and insect-related salvage logging. These regulations represent a net increase in forest management authorized by the Forest

Service without substantial environmental analysis or documentation. In addition, the specific management authorized under the new HFI CE's is also inconsistent with ecological forestry as described in Chapter Four. Table 5 summarizes the five new HFI categorical exclusion processes established by the Bush Administration in 2003.

Table 5. Five New Categorical Exclusions Created by the Healthy Forest Initiative.			
CE #	Name of HFI CE	Management Characteristics	Forest Management
10	Hazardous Fuels Reduction	4,500 acres of prescribed burns and 1,000 acres of commercial logging;	Commercial Forestry
11	Post-Fire Rehabilitation	4,200 acres of tree planting, fence replacement, habitat restoration, heritage site restoration, repair of roads and trails, and repair of damage to minor facilities such as campgrounds.	Commercial Forestry
12	"Limited" Commercial Logging	70-acres of "small scale" commercial logging; Less than one-half mile of road construction	Commercial Forestry
13	Weather-Related Salvage Logging	250 acres of commercial logging in areas with recent weather-related disturbance; less than one-half mile of road construction	Commercial Forestry
14	Insect-Related "Sanitation" Salvage Logging	250 acres of commercial logging for "sanitation harvests" in areas with recent or pending insect outbreaks; less than one-half mile of road construction	Commercial Forestry

Although prescribed burning on fire-adapted ecosystems is supported by ecological forestry, federal courts severed the hazardous fuels reduction CE from the regulations (*Sierra Club v Bosworth* 2007), holding the Bush Administration failed to address the cumulative impacts of individual 4,500 acre burns and 1,000 acre logging projects across the landscape. Unlike commercial logging, prescribed burning is supported by ecological forestry, yet CE 10 authorized the agency to conduct large

burning projects without substantial environmental review required by the National Environmental Policy Act (1970). Given the scale and potentially adverse environmental effects of the hazardous fuels reduction CE, this HFI rule is inconsistent with ecological forestry principles, and instead supports models of commercial forestry management.

While the Post-Fire Rehabilitation CE (#11) was not used in North Carolina during 2003 through 2008, the merits of such management following natural wildfire events are not supported in the ecological forestry literature. On August 1, 2006, for example, nearly 600 leading scientists signed a letter opposing the Bush Administration's post-fire activities, writing: "When we, as scientists, see policies being developed that run counter to the lessons of science, we feel compelled to speak up. Proposed post-disturbance legislation... crafted as a response to recent fires and other disturbances, is misguided because it distorts or ignores recent scientific advances. Under the labels of 'recovery' and 'restoration', these bills would speed up logging and replanting after natural disturbances... such activity would actually slow the natural recovery of forests and of streams and the creatures within them... no substantive evidence supports the idea that fire-adapted forests might be improved" (in Hanson et al. 2009).

Additionally, as recently as February 2, 2010, scientists at the University of California at Davis released a report that claims to "debunk the myths" of post-fire management as designed by the Forest Service. These scientists argue, "It may seem counterintuitive, but the scientific evidence is telling us that some of the very best and richest wildlife habitat in western U.S. forests occurs where fire kills most or all of the

trees. These areas are relatively rare on the landscape, and the many wildlife species that depend upon the habitat created by high-intensity fire are threatened by fire suppression and post-fire logging” (Hansen et al. 2009). Given this criticism from ecological foresters, the Post-Fire Rehabilitation CE is most consistent with models of forest management that support planting merchantable stands of trees in naturally regenerating ecosystems for commercial purposes.

Furthermore, three of the CE’s were specifically established for commercial forestry purposes. The Limited Logging CE, for example, was created to allow the agency to expedite “small” 70-acre logging projects with up to one-half mile of roads for the “removal of individual trees for sawlogs, specialty products, or fuelwood, and commercial thinning of overstocked stands to achieve the desired stocking level to increase health and vigor” (FSH 1909.15 ch. 30). By definition, this CE is most supported by commercial forestry management. Weather related salvage logging (CE #13) is also designed for commercial, not ecological, forestry. Salvage logging is rejected by ecological forestry given the lack of any redeeming environmental value (Lindenmayer & Noss 2006; Lindenmayer et al. 2010). In fact, salvage logging actually intensifies forest health problems (Ingalsbee 1997).

Insect-related logging is also not supported by ecological forest science. The HFI “Sanitation Harvest” CE (#14) was designed to address insects like Southern Pine Beetles, which are native to the Southeast. In fact, outbreaks are linked to past commercial forestry practices, including fire suppression, monoculture plantation forestry, road construction, and seed spore dispersal (Heinselman 1981, 1983; Kilgore

1981; Abrams 1992; Spies & Turner 1999, Aber et al. 2000). Dense even-aged pine plantations, for example, are more susceptible to infestations, and corridors provided by extensive logging roads substantially contribute to the spread of pests and pathogens in many ecosystems (Aber et al. 2000:6). Additionally, the buffers between commercial pine plantations and native forests create an “edge” effect that spreads species like Southern Pine Beetles into forest interiors (Roland 1993). Instead of reducing SPB infestations, thinning and logging can intensify severe outbreaks by creating breeding habitat and food sources in “slash,” which is made up of left over logs, slash, and stumps (Massey & Parker 1981).

Consensus among ecological forestry scientists shows natural, undisturbed ecosystems are more likely to be resistant to insect outbreaks and disease (Aber et al. 2000). Native forests have evolved with insects that play important roles in the nutrient cycling, natural disturbance, food chains, productivity, and biotic diversity (Clancy 1993:363). In fact, insect outbreaks can have a beneficial ecological effect of creating large-diameter snags and critical foraging habitat for woodpeckers and nesting habitat for cavity-nesting birds and mammals (Veblen et al. 1991). They also produce complex forest structure preferred by denning mammals (Koehler and Brittell 1990). Given this large body of work in the literature, the “Sanitation Harvest” HFI CE for insect related salvage logging is not supported by ecological forestry. In fact, Black et al. recently released a report demonstrating that logging to reduce insect outbreaks may intensify forest health problems. “The best available science indicates that such treatments are not likely to reduce forest susceptibility to outbreaks or reduce the risk

of "res, especially the risk of "res to communities. Furthermore, such silvicultural treatments could have substantial short- and significant long-term ecological costs when carried out in national forest roadless areas" (Black et al. 2010:1). Instead, like the other HFI CE's, this management approach is more consistent with principles of commercial forestry.

Extraordinary Circumstance

The first rule established by the Healthy Forest Initiative was the "Clarification of Extraordinary Circumstances" (67 Fed. Reg. 54,622, 54,622), which revised the Forest Service Handbook (1909.15 Chapter 30) by changing the previously existing automatic trigger an EA when extraordinary circumstances are present. Instead, the HFI replaced the existing rule with discretionary language authorizing agency to consider whether "resource conditions" determine extraordinary circumstances were present (Huber 2005). "Previously, the presence of these 'resource conditions' were themselves defined as extraordinary circumstances, but the Forest Service changed the Handbook to make what was a mandatory duty into a discretionary act" (Vaughan 2006).

Prior to the HFI, NEPA required the Forest Service to conduct an EA for all management except "routine actions that have no extraordinary circumstances" (57 Fed. Reg. 43180 (September 18, 1992). Extraordinary circumstances include a list of environmental and cultural issues that, if present in the proposed activity area, originally required the Forest Service to conduct a full EA for any national forest management. Normally, for example, the Forest Service could not use a CE if there are

steep slopes, endangered or threatened species, wilderness or wilderness study areas, and if the project occurs in an “Inventories Roadless Area”(1909.15 §30.3(2)).

Under the “clarification of extraordinary circumstances” HFI policy change, the Forest Service was allowed to authorize CE projects with occurrences of federally listed Endangered and Threatened species. Chapter Eight provided evidence based on available data that documents species occurrences in nearly 40 percent (n=26) of all CE vegetation management projects approved in North Carolina, while Forest Service Sensitive Species (another extraordinary circumstance category) were present in 63 percent (n=42) of all projects. Cumulatively, these species occurrences contributed to presence of extraordinary circumstances in 43 projects, while the presence of archeological resources, Inventoried Roadless Areas, and other issues increased the number of these projects with to nearly 66%. Table 23 provides a summary of the extraordinary circumstances present in vegetation management in North Carolina’s national forests that would have previously required public documentation of potential environmental impacts in an EA.

Table 23. Overview of Extraordinary Circumstances* Occurring in 67 Categorical Exclusion Vegetation Management Projects in National Forests in North Carolina.	
Type of Extraordinary Circumstance	Total
Federally Listed Endangered & Threatened Species	36
Forest Service Sensitive Species**	187
Inventoried Roadless Areas	2
Archeological Resources***	17
<p>*Other Extraordinary Circumstances not analyzed for this study include steep slopes, flood plains, wetlands, municipal watersheds, Congressionally designated areas, Research Natural Areas; and American Indian cultural sites.</p> <p>** Sensitive Species were added to the list of Extraordinary Circumstances by the Forest Service in 2003</p> <p>*** Archeological surveys for projects were not included in the FOIA. Evidence of presence of archeological resources is based on Forest Service correspondence available in the project files.</p>	

The extraordinary circumstances rule applied to the new HFI CE's promulgated in the summer of 2003 as well as to existing CE's established by the Forest Service that exempted vegetation management from NEPA analysis, including road rehabilitation, special uses, regeneration, and "timber-stand improvements." By definition, the "clarification" of rules protecting federally listed and rare species, intact roadless forests, watersheds, and environmental resources is inconsistent with ecological models of forest management. As such, the extraordinary circumstances rule established by the Bush Administration's HFI in 2002 supports commercial forestry management.

PROJECT CHARACTERISTICS

The next section discusses specific management characteristics for 67 projects approved and implemented through the categorical exclusion process in North Carolina from 2003 through 2008. In addition to the broad policy considerations discussed above, this section provides a summary of evidence documented in Chapter Eight to determine whether specific projects authorized under the Healthy Forest Initiative confirmed commercial or ecological models of forest management.

Watershed Restoration

Among the ecologically justified management projects proposed by the Forest Service during the scope of this study, there were six watershed restoration approved in the Blue Ridge ecoregion for the purpose of reducing the adverse effects of illegal off-road vehicles in the national forests. These management activities accounted for nearly nine percent (n=6) of all management activity, and less than one percent of all acreage treated.

This use of ORV's in U.S. National Forests has raised concern among the Forest Service nationally (Bosworth 2006) and in North Carolina (Croatan Management Plan) due to the propensity of ORV users to stray from designated trails into illegal sensitive areas. In fact, the Forest Service believes "impacts from off-highway vehicles represent one of four key threats facing the nation's forests and grasslands" (USDA 2005). The agency has identified several ecological problems arising from ORV's, including "impacts to cultural and historic sites, violation of sites sacred to American Indians, severe soil erosion, spread of invasive weeds, disturbance to wildlife, destruction of fragile soils and

vegetation” ” (USDA 2004). The watershed restoration projects in North Carolina identified in this study targeted illegal ORV use and the subsequent “soil erosion and sedimentation into area creeks” and “local waterbodies” (Vann 2005:2, on file with author).

While ORV’s pose a serious challenge to agency rangers who attempt to block illegal access, the agency received overwhelming support for this work. Most strikingly, of 18 comments received by the Forest Service in response to these projects, only one was opposed (see Chapter Seven). In other words, these projects garnered the greatest proportion of support among all proposed actions by the agency. While ORV associations are often very public with their support of legal trails, the conspicuous absence of opposition to these road-closures demonstrates to future potential for this work. In short, there is substantial agreement between the public and the agency towards preventing illegal ORV use in the national forests.

Given these benefits of watershed restoration, and support for such activities in the conservation literature (Hays 2007), this management approved by the Forest Service supports models of ecological forestry. As discussed below, the overwhelming support for this management, in addition to the ecological forestry benefits, demonstrates the potential positive policy implications for future Forest Service management (discussed below).

Pre-commercial and Commercial Logging

The most common purpose identified for all CE projects issued in North Carolina in 2003 through 2008 related to commercial logging, which was evident 29 percent of

the time. The most common CE type was for “timber-stand improvement” (CE #6), which is a commercial forestry management approach used for maintaining and logging merchantable crops of trees (discussed in Chapter Eight). When combined with pre-commercial thinning, the agency approved commercial forestry projects over 38 percent of the time. This dominance of commercial forestry management also explains the substantial opposition by commenters with a primary interest in ecological forestry, which accounting for 80 percent of all critical comments received by the agency (see Chapter Seven). By definition, the use of commercial logging and precommercial thinning confirms the substantial support for commercial forestry by the Forest Service, which is consistent with other findings (Twight 1989; Twight & Lyden 1990).

Prescribed Burns

The use of prescribed burns is supported by the ecological literature when it is applied to native forests in fire-dependent ecosystems. On the other hand, burning can be applied as a commercial forestry technique to reduce competition and threats to merchantable trees. Although this study did not include non-HFI prescribed burns (see Chapter Three), the Forest Service did authorize five Hazardous Fuels Reduction projects (CE 10). Three were approved in the Uwharrie National Forest and two in the Highlands District (now managed by the Nantahala District in the Nantahala National Forest).

Based on the available evidence, the Uwharrie projects were used for maintaining non-native pine monocultures, while the burns in the Highlands District were applied to ecosystems that are not fire-adapted. Furthermore, the significance of 15,997 acres of burning raises policy questions about the use of CE’s for projects with

substantial acreage. Anecdotal evidence of an additional non-HFI prescribed burn in the Cheoah Ranger District included a 606-acre burn in the non-fire dependent Cheoah Bald Inventoried Roadless Area (extraordinary circumstance) and along the Appalachian and Bartram Trails. Although mountain balds are often maintained by controlled burns, the Cheoah project apparently targeted ecosystems that are not fire-adapted (Thomas 2005, on file with author). Regardless of the ecological merit of this project, however, few would argue it is “insignificant” as defined by NEPA (see discussion below).

Consequently, CE 10 was invalidated in the *Sierra v Bosworth* (2007) ruling because the Forest Service failed to demonstrate the application of individual 4,500 acre burning and 1,000 acre logging projects would not have significant cumulative impacts. In fact, one of the projects on the Uwharrie National Forest called the “Fuel Reduction Wildlife Prescribed Burns” authorized 7,118 acres of burns and logging, in violation of the HFI’s 5,500-acre cap on hazardous fuels reduction projects.

Southern Pine Beetles

The Forest Service also authorized eight projects covering 1,516 acres with the primary purpose of addressing outbreaks of Southern Pine Beetles (SPB). Additionally, eleven other projects included treatments for Southern Pine Beetles, but were designed primarily for pre-commercial or commercial logging purposes. As discussed above, “sanitation” or salvage logging following tree-mortality from insect outbreaks is inconsistent with the principles of ecological forestry.

While thinning treatments, done correctly, can reduce the rate of spread of SPB infestations and can potentially preserve native pine communities, including Shortleaf,

Pitch, and Table Mountain Pine, this approach only addresses the symptom of the problem. Instead of reducing SPB infestations, thinning and logging can actually intensify the severity of outbreaks (Massey & Parker 1981). Furthermore, given the substantial portion of precommercial and commercial logging described above, the agency may be intensifying problems related to insect outbreaks in parts of the national forest while acting to reduce them in others. This conflict in management objectives is discussed in the policy implications section at the end of this chapter.

Wildlife Openings

In addition to commercial forestry, the Forest Service's management agenda includes the creation of "early successional habitat" in the national forests. The agency claims cleared areas and the first 'succeeding' generations of recovering forests provide wildlife openings in the natural forest that benefits game species and some native birds.

Chapter Eight documented and analyzed evidence of eight projects proposed for this purpose in North Carolina from 2003 through 2008. With the exception of one project in the piedmont's Uwharrie National Forest, all were conducted in the Blue Ridge ecoregion. According to the North Carolina Wildlife Resources Commission, "Early-successional forest openings add habitat diversity and provide an important habitat component for a number of game and non-game wildlife species" (McHenry 2005:1). In contrast, ecological forestry advocates warn against wildlife openings because "artificial openings have ecological problems" that outweigh potential environmental benefits (Schafele 2005:1, on file with author).

Most strikingly, there were documented occurrences of rare species (based on Forest Service biological surveys) in half of the wildlife openings identified in this study, including one population of federally listed endangered bats (Indiana Bat), as well as 13 other protected “sensitive” species tracked by the agency. In addition to the direct effect on identified endangered and sensitive species, it is also likely these wildlife openings and early-successional habitat serve as vectors for Southern Pine Beetles and invasive species. This apparent conflict between agency directives for creating wildlife openings while also protecting rare species and preventing SPB outbreaks demonstrates some of the problematic incompatibilities within the agency’s multiple-use mandate. In short, wildlife openings approved under the Healthy Forest Initiative in North Carolina from 2003 through 2008 support the commercial forestry management paradigm.

In conclusion, the vast majority of projects authorized by the Forest Service using Healthy Forest Initiative policies were consistent with commercial forestry descriptions of forest management (see Table 41). Over a third of the projects were described by the Forest Service as commercial, while a substantial portion of other projects under other titles confirm the dominance of commercial forestry under the Healthy Forest Initiative. The notable exceptions were the six watershed restoration projects authorized in the Blue Ridge and Piedmont eco-regions. Except for these projects, the forest management authorized by the Forest Service under the Healthy Forest Initiative from 2003 through 2008 support commercial forestry models of public land management.

Table 41. Management Description Of CE Vegetation Projects Issued In North Carolina National Forests Under The Healthy Forest Initiative From 2003 Through 2008.		
Number (n=67)	Primary Project Purpose	Forest Management
16	Pre-Commercial Thinning	Commercial Forestry
19	Commercial Logging	Commercial Forestry
6	Prescribed Burns	Commercial Forestry
6	Watershed Restoration	Ecological Forestry
8	Wildlife Openings	Mixed
8	Southern Pine Beetle	Commercial Forestry
4	Other	Mixed

POLICY IMPLICATIONS

This case study of decision-making and forest management processes under the Healthy Forest Initiative in North Carolina provides several implications for policies addressing U.S. National Forests. Before presenting policy recommendations, it is important to reemphasize the limits of this study (see Chapter Three). This dissertation focused on only four classes of Healthy Forest Initiative policies (appeals rule, categorical exclusions, extraordinary circumstances, and goods for services) in the Croatan, Nantahala, Pisgah, and Uwharrie National Forests in North Carolina. These findings are therefore not immediately generalizable to other decision-making processes or national forests in other regions. Although the North Carolina case was chosen for its important forest and management history (see Chapter Three), this selection also limits the general applicability to other forests given the state's unique status.

Despite these tradeoffs, several important policy findings have direct relevance to federal policies and other national forest regions. The final section explores the

policy implications based on the findings documented in this dissertation. As Table 42 describes, these recommendations address the appropriate use of categorical exclusions, the difficulty in implementing collaborative management, watershed restoration, the “forest health vortex,” “bullet-proofing” environmental analysis, Critical Habitat loopholes, and the case for a “conservation democracy” theory of environmental decision-making.

Table 42. Overview of policy implications emerging from the case study of Healthy Forest Initiative projects in North Carolina.			
#	Topic	Recommendation	Timeline
1	Appropriate Use Of Categorical Exclusions	Restrict use of categorical exclusions to original management without extraordinary circumstances.	Short term
2	Collaborative Management Implementation	Avoid collaborative decision-making for controversial, expedited management projects.	Short term
3	Watershed Restoration	Increase implementation of non-controversial, ecologically justified management.	Short term
4	“Bullet-Proofing” Environmental Analysis	Expect strong public participation and opposition when projects are proposed in sensitive forest ecosystems.	Mid term
5	Critical Habitat Loopholes	Increase designation of critical habitat for endangered species, as required by the Endangered Species Act.	Mid term
6	The “Forest Health Vortex”	Avoid conflicting commercial logging and forest health management objectives.	Mid term
7	“Conservation Democracy”	To Increase ecological forestry, increase public participation.	Long Term

1. Appropriate Use of Categorical Exclusions

CE projects are not appropriate for controversial projects with significant environmental effects or potential public participation. Categorical exclusions were originally created for “routine” actions with insignificant environmental effects. Today, the management approach accounts for over 70 percent of all agency activity, including over half the acreage treated in the National Forests (GAO 2007). Although it is possible the agency conducted insignificant forest management 70 percent of the time, the more likely explanation is that much of the management approved as CE’s approved should have been documented through the environmental assessment process as originally intended under the National Environmental Policy Act.

Regardless of whether the management is commercially or ecologically justified, the expectation of the Forest Service is that these actions will significantly modify the environment. This is precisely the kind of management the agency should review through the environmental assessments process under NEPA. Given the Bush Administration and commercial forestry interest’s call for urgency and alarm when introducing the Healthy Forest Initiative (see Chapter Six), the five CE’s exemplify inconsistencies with claims about the necessity of expedited management directives while simultaneously arguing the actions have no significant effects.

Additionally, given the use of CE’s to authorize projects that significantly modify the environment, documentation in an environmental assessment would not only comply with the original intent of NEPA, it would also provide the public with more

analysis and a more reasonable opportunity to participate. In fact, the CEQ released guidance on the use of CE's on February 18, 2010, specifically addressing how "An inappropriate reliance on categorical exclusions may thwart the purposes of NEPA, compromising the quality and transparency of agency decision-making as well as the opportunity for meaningful public participation and review" (Sutley 2010). As this directive recommends, the restriction of the agency's use of categorical exclusions to routine actions instead of significant forest management activities may have important immediate positive environmental and administrative policy implications for U.S. National Forests.

2. Collaborative Management Implementation

The success of collaborative decision-making is unlikely as long as the agency relies on the approach for controversial and/or expedited management projects. The policy and conservation literature includes several papers that caution against the use of collaborative management for publicly held resources (Coggins 1999; McCloskey 2003; McCarthy 2005; Cheng & Mattor 2006). These issues include the intractability of conflict (Mouffe 1999), the lack of interest or inability of the public to participate (Stankey), and the tendency for cooptation of collaborative meetings by powerful, commercial interests (Abel & Stephan 2000; McCarthy 2005). (See Chapter Two)

In this study, although the Forest Service was expected to support collaborative designs for eight CE projects in North Carolina, the citizen involvement for these projects was instead identical to conventional scoping processes (see Chapter Eight).

One reason for this lack of deliberative decision-making can be explained by the expedited process of categorical exclusions. It is unlikely the agency will be able to develop meaningful collaboration for CE projects that are exempted from the environmental assessment process and approved in a substantially shorter period of time (30-days).

Additionally, this exemption from documentation in an EA limits the amount of data citizens have to support informed collaboration. Although the agency is required to document surveys in a project file with a discussion of potential extraordinary circumstances, these findings are not presented to the public until after the decision has been made by the agency. In short, the CE process significantly lacks the level of environmental analysis that the public could be expected to use to meaningfully deliberate.

Assuming the environmental effects of the CE projects are indeed insignificant (positive or negative), it is not surprising to find a lack of interest given the absence of management that would commonly inspire greater levels of public participation. Like other studies documenting a reluctance by the public to participate in collaboration for national forest management (Cheng & Mattor 2006; Knoop & Thomas 2006), the expedited and so-called “insignificant” nature of the CE management process is unlikely to be compatible with collaborative management.

In this North Carolina case study, however, several projects requiring collaboration were indeed controversial, inspired substantial levels of scoping comments, and included documented extraordinary circumstances. There was sizeable

participation, for example, in the Fires Creek Stewardship Project, a controversial project that included logging in the Tusquitee Bald Roadless Area. The Forest Service, however, neglected to initiate formal collaboration for this or any other HFI CE project approved by the Forest Service from 2003 through 2008.

These hurdles to collaboration for CE management projects can be avoided most easily by restricting the use of this decision-making approach to traditional EA or EIS processes that require sophisticated environmental analysis. The CE process, on the other hand, does not lend itself to this type of management, and, by definition, it is intended for projects that do already fit into a predetermined category of actions (CE's).

In fact, the CE for Hazardous Fuels Reduction—the only HFI CE specifically requiring collaborative decision-making— was invalidated in federal court (*Sierra v Bosworth*) because, among other reasons, the Forest Service was not authorized to determine the “significance” of extraordinary circumstances on a case-by-case basis. Assuming that stakeholder deliberations would have provided some level of site-specific issues relating to the projects (as the process is designed to do), collaborative negotiations are therefore inappropriate and not allowed under NEPA (40 C.F.R. § 1508.4). As the plaintiffs in *Sierra v Bosworth* argued, “The Fuels CE is also invalid because it does not fully identify what actions it authorizes and, through its provision for a subsequent collaborative process and ‘extraordinary circumstances’ review, it establishes a ‘case-by-case’ categorical exclusion” (Huber et al. 2007).

While the Forest Service was enjoined by federal courts against using the hazardous fuels reduction CE, the agency can still use the HFI “Stewardship” Goods for

Service contracting system established by the Bush Administration that also requires collaborative decision-making, albeit not with the force of law. In fact, the Obama Administration's 2011 budget for the Forest Service shifts emphasis from traditional timber sales to the GFS contracts (Reis 2010). The success of this and other Forest Service "cooperative conservation" (Bush 2006) strategies is doubtful if, among other reasons, the agency authorizes the forest management under the CE process.

3. Watershed Restoration

The use of Watershed Restoration provides a non-controversial, ecologically justified alternative the agency should use more frequently in the future. Among the few ecologically supported CE activities approved by the Forest Service and documented in this dissertation (see Chapter Eight), the evidence suggests there is great potential in watershed restoration activities aimed at correcting and preventing damage from illegal off-road vehicle activities in the national forests. As described above, watershed restoration was clearly the least controversial, and the most ecologically justified management authorized by the Forest Service in North Carolina.

The Uwharrie National Forest , for example, has extensive ORV use on nearly every trail in the forest "except for a small portion of the Dickey Bell Trail located west of SR 6584 which is suitable only for use by ATV's or motorcycles" (Forest Service website). Likewise, the Croatan National Forest also has "unauthorized use is also occurring on over 70 miles of unclassified roads and trail corridors. Many of these routes occur in the

southern portion of the CNF, coinciding with the highest occurrence of rare plant and animal species” (2003:9).

Although the Croatan and Uwharrie National Forests have substantial illegal ORV use, the Nantahala was the only part of the federal forest system in North Carolina that implemented measures to address this threat through the CE process. Additionally, given the conspicuously low level of objections by the public toward these projects, and the clear ecological support for authorizing them, watershed restoration of this nature shows the best potential for meeting goals for ecological forestry, as well as participatory models of democratic theory. Expanding this approach from targeting illegal ORV use to other watershed restoration work like, for example, removing deteriorating logging roads, may offer similar benefits for the agency, the public, and the ecological systems of concern.

4. *“Bullet-Proofing” Environmental Analysis*

The agency should expect to “bulletproof” environmental analysis if it continues to authorize controversial large commercial forestry projects in ecologically sensitive areas given the likelihood of increased public participation in these projects. According to authors in the resource management literature (Bosworth 2002:36), one of the so-called problems with public participation (especially administrative appeals) is that it forces the Forest Service to produce more carefully constructed, “bullet-proof” environmental analysis out of fear projects will be challenged by public based on imperfect agency documentation and review. As the Forest Service Chief during the

Bush Administration argued, “some groups have successfully used appeals to obstruct timber sales, and Forest Service employees therefore treat almost every ground-disturbing project as a potential target. They spend a tremendous amount of time trying to ‘bullet-proof’ project planning against appeals and litigation” (Bosworth 2002:37).

On the other hand, Tiech et al. argue that “the additional time spent on document preparation (‘bulletproofing’) cuts several ways. It may indeed prolong the process, but efforts to avert appeals can also prompt the agency to build a stronger scientific or economic justification for its decisions and be more sensitive to public objections to proposed projects” (2004:18). Indeed, as Kaufman documented in his seminal study on Forest Service administration, *The Forest Ranger* (1960), this threat of administrative appeal was specifically established for this purpose of forcing compliance of field officers with agency directives.

Whether or not this bulletproofing effect is ecologically or procedurally beneficial, the evidence documented in Chapter Seven show the agency can predict increased public participation for large projects proposed in ecologically sensitive areas with rare species habitat. Arguing about the agency’s extra time spent preparing environmental analysis misses the point that the Forest Service could avoid lengthy environmental review processes by discontinuing large controversial projects in ecologically imperiled native systems. This pattern in the data, relating to the predictive power of large projects with rare species, is even more striking considering the public did not have direct access to the Forest Service surveys.

This local knowledge about forest conditions could be harnessed by the agency to improve ecologically justified management. On the other hand, increased management in sensitive habitats will continue to force the agency to undergo controversial, costly procedures in the attempt to approve commercial forestry projects. Considering this tension between ecological and commercial forestry has been a part of the agency since the “classic conservation conflict” (Callicott 1999) dividing Pinchot and Muir (see Chapter Four), it is unclear whether the agency will drastically change course toward ecological forestry (Hays 2007). Until it does, however, the Forest Service can expect controversial projects to get entangled in conflict-driven, dissent-based participation by citizens and non-governmental organizations with ecologically based interests. The necessity for bulletproofing is, therefore, unlikely to go away any time soon.

Furthermore, the frequency of CE projects proposed by the agency in North Carolina’s national forests dropped significantly after the right of administrative appeal was reinstated by the *Earth Island v Ruthenbeck* (2005) ruling in federal court (See Chapter Eight). In short, if the bulletproofing effect had consequences for forest management, they were generally ecologically beneficial based on the reduction of the frequency of CE projects proposed, and the likelihood those projects would have adverse effects on sensitive species.

5. Critical Habitat Loophole

The lack of designated Critical Habitat creates a loophole for the Forest Service to use the HFI extraordinary circumstances rule to approve management in habitat for federally listed threatened and endangered species. When species are added to the Endangered Species Act's federal endangered or threatened list, the U.S. Fish and Wildlife Service is required, except in rare cases, to designate critical habitat for the species (7 U.S.C. § 136, 16 U.S.C. § 1531). Once critical habitat has been established, federal agencies are not permitted to authorize or encourage any "adverse modification" to the habitat. One recent study of the Fish and Wildlife Service's data shows that species with critical habitat protected are twice as likely to recover as those without critical habitat. Of the nearly 1900 endangered and threatened species listed in the United States, the U.S. Fish and Wildlife Service had failed to designate critical habitat for over 83 percent of them (Parenteau 2005).

Given the new extraordinary circumstances rule authorized by the Bush Administration, critical habitat could provide a layer of protection for endangered and threatened species. In Chapter Eight, this case study demonstrated that endangered and threatened species' critical habitat could have provided additional safeguards in nearly 40 percent (n=26) of all CE vegetation management projects approved in national forests in North Carolina.

The ESA defines critical habitat as "the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of this Act, on which are found those physical or

biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of this Act, upon a determination by the Secretary that such areas are essential for the conservation of the species.” Section Four requires “The Secretary, by regulation promulgated in accordance with subsection (b) and to the maximum extent prudent and determinable— A) shall, concurrently with making a determination under paragraph (1) that a species is an endangered species or a threatened species, designate any habitat of such species which is then considered to be critical habitat” (7 U.S.C. § 136, 16 U.S.C. § 1531 et seq.).

In October 1999, the U.S. Fish and Wildlife Service announced a settlement with the Southern Appalachian Biodiversity Project (now WildSouth), in which it agreed to designate critical habitat for four species in North Carolina. This was the first time the agency designated habitat since 1988, despite listing 25 species. Under the Bush Administration, the agency designated less critical habitat than any other administration since the creation of the ESA (CBD et al. 2010). “The Bush administration is the only presidency not to have designated a single critical habitat except under court order (CBD et al. 2010)

The HFI extraordinary circumstance provisions allowed the Forest Service to approve commercial forestry and other management in sensitive areas that may have been protected from adverse modification if the U.S. Fish and Wildlife

Service had not failed to designate critical habitat. Furthermore, the Forest Service's use of categorical exclusions to expedite project implementation would have instead required an EA or EIS, which provide for substantially more environmental analysis and public review of the scientific merits of the management. Until the critical habitat loophole is closed, agencies like the Forest Service can authorize projects with adverse modifications to habitats for species that are listed under the Endangered Species Act yet receive few protections other than being on a federal list.

6. *Forest Healthy Vortex*

The Forest Service should address conflicting commercial forestry and forest health directives to avoid an unecological cycle for national forests management. As identified in Chapter Eight, forest management projects authorized by the Forest Service in North Carolina included traditional commercial logging as well as projects aimed at addressing insect-outbreaks, hazardous fuels reduction, invasive species, and other 'forest health' issues. Ecological forestry science, however, has found that commercial logging, early-successional openings (clearcuts), and logging roads are the single greatest human causes of wildfires (Ingalsbee 1997) and the spread of invasive and pest species (Black et al. 2010). These conflicting management directives contribute to a forest health vortex, or a cycle perpetuated when industrial logging and wildlife openings intensify the spread of Southern Pine Beetles and invasive pests, which

triggers a response by the agency for “Healthy Forest” management relying on logging and road-building.

One of findings of the chi-square tests in Chapter Eight, for example, identified a substantial use of insect-related logging on the Grandfather Ranger District in the Pisgah National Forest, including more than twice the number of projects targeting Southern Pine Beetles in this district than would be predicted by a model of independence.

Although the Uwharrie and Croatan National Forests have more native pine forests than the Blue Ridge ecoregion, the Grandfather Ranger District issued as many projects targeting southern pine beetles as the two other national forests combined. In fact, 37 percent of all insect-related CE projects in North Carolina originated in the Grandfather district, while the Pisgah National Forest authorized more HFI CE’s (#14) for insect related “sanitation” harvests than predicted.

While the Forest Service worked to address the Southern Pine Beetles outbreak in one part of the forest, that work was undermined by conflicting management directives evident in the creation of wildlife openings, or “early successional habitat,” which serves as vectors for Southern Pine Beetles and invasive species. The Grandfather Ranger District proposed more than twice the number of wildlife opening projects than predicted by a model of independence, which was one of the major contributors to the significant chi-square statistic (98.9244, p-value = 1.715e-06) discussed in Chapter Eight. This potential relationship between the occurrence of wildlife openings and Southern Pine Beetle outbreaks in the Pisgah National Forest is evocative. Given scientific consensus in the conservation literature that artificial

openings and logging intensify invasive and pest outbreaks (Aber et al. 2000), questions emerge about a correlation between the disproportionately high level of wildlife openings on the Grandfather and the substantial frequency of insect-related outbreaks occurring throughout the Pisgah National Forest.

Furthermore, there were documented occurrences of rare species (based on Forest Service biological surveys) in half wildlife openings identified in this study. On its face, creating wildlife openings with early successional clearcuts defeats the stated purpose if logging displaces rare wildlife already occurring in the project area.

These apparent conflicts in agency directives between wildlife openings (not to mention commercial logging and road-building) while claiming to protect rare wildlife and prevent SPB outbreaks demonstrates a problem best described as a forest health vortex. Incompatibilities within the agency's multiple-use mandate continue to a vicious cycle of mismanagement aimed at addressing previous mismanagement. Until the Forest Service accepts the ecological science relating to the impacts of commercial logging and road-building, it is unlikely it will successfully address forest health issues. "Commercial logging in national forests is the problem, not the solution" (George 2004).

7. Conservation Democracy

Findings from this dissertation support a theory of Conservation Democracy to most adequately explain public participation and environmental decision-making processes occurring in national forests, as well as possible solutions to other current and future environmental controversies. On August 22, 2008, the National Research Council

released findings from one of the most comprehensive studies of the effects of public participation showing that, when done correctly, public involvement usually leads to better environmental decision-making. The NRC report, ironically announced on the sixth anniversary of the Bush Administration's Healthy Forest Initiative, is confirmed by findings outlined in this dissertation relating to the potential value of improved public participation in supporting ecological outcomes (National Research Council 2008).

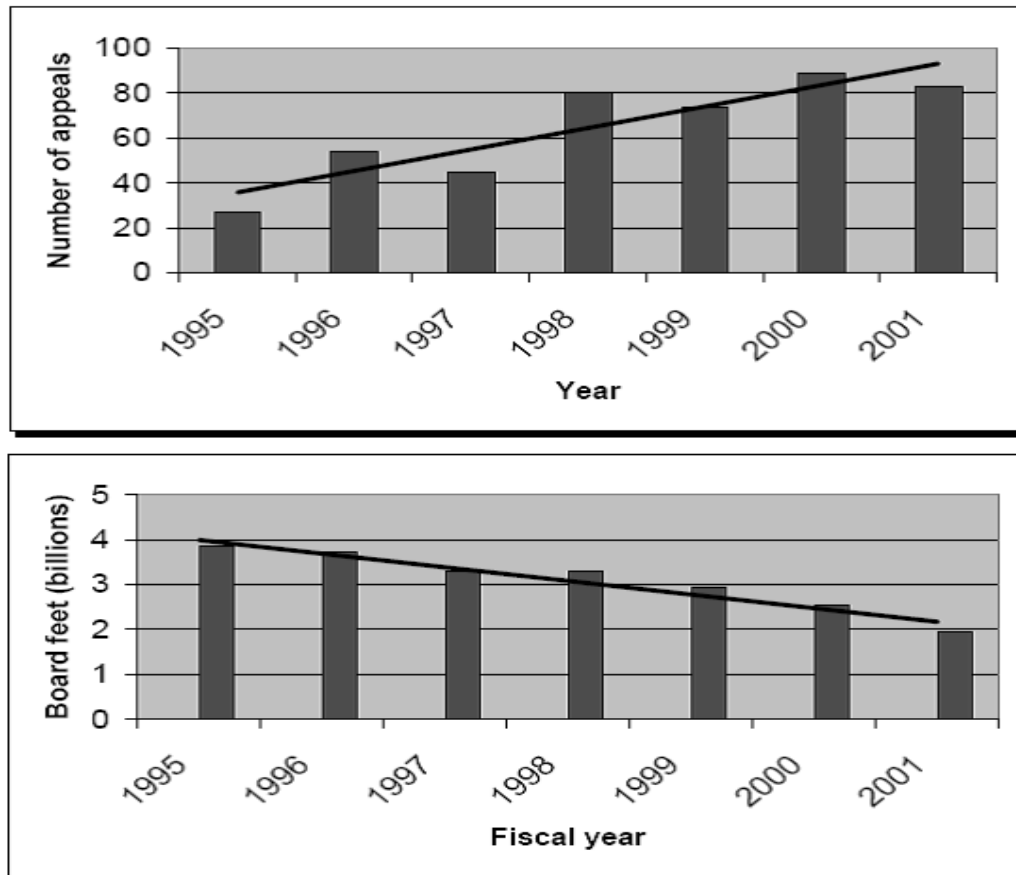
In Chapter Seven, evidence was presented showing substantial support among most commenters for environmental interests, while Chapters Six and Eight underscored the role of the Healthy Forest Initiative in expediting commercial forestry, often in sensitive ecosystems with extraordinary circumstance. While there was little evidence of public influence in modifying designs of specific projects (supporting an elite model for the HFI), the frequency of projects proposed by the Forest Service dropped substantially after public participation was increased by federal courts (supporting more participatory models of democracy).

Although not the cause of this decrease in frequency of agency proposals, public processes established a "minimum condition" (Cox 2010) for the public to participate, even though citizens may choose to avoid the process, as seen in the appeals process documented in this study (see Chapter Seven). This basic guarantee of "the right to object," (Coulombe 2004), serves as a deterrent to agency planners who may otherwise propose controversial projects if the public cannot challenge decisions through formal administrative processes (Kaufman 1961). This finding is consistent with the frequency

of projects issued in North Carolina (see Chapter Eight), as well as in the national study by the GAO (2007, see Appendix F).

As explained in Chapter Five, the historical evidence shows environmental analysis and complex scientific questions were the primary reasons why the Forest Service was “paralyzed” (GAO 1989) and unable to increase the frequency of commercial forestry projects. Furthermore, as Chief Bosworth admitted in his “process predicament” paper (2002:36), “some groups have successfully used appeals to obstruct timber sales, and Forest Service employees therefore treat almost every ground-disturbing project as a potential target.” Fig. 9 provides the chart from “The Process Predicament” (Bosworth 2002), which asserts an inverse relationship exists between public participation rights and the frequency of commercial forestry projects proposed by the agency.

Figure 9. Forest Service data showing the rising number of appeals filed since 1995 (top), while the volume of commercial logging fell (Bosworth 2002).



This inverse relationship between citizen access and commercially-driven HFI management proposals underscores the potential for securing increased ecological protections by securing the “minimum conditions” (Cox 2010) for decision-making processes for national forests and other resources. Moreover, on March 4, 2010, the GAO released a new report (GAO-10-337) confirming that public challenges to Forest Service projects most often target commercial forestry practices, while hazardous fuel

reduction projects go forward without challenge by administrative appeal (82 percent of the time), or lawsuits (98 percent of the time) (GAO 2010). In short, the public uses the participation process to challenge commercial forestry, while ecological forestry and wildfire protection projects go forward mostly unchallenged.

Based on the evidence in Chapter Seven and Eight, pluralist and agonistic theories were confirmed in projects (based on the type of participation in the decision-making process), with the majority of commenters objecting to agency commercial forestry proposals. On the other hand, the evidence suggests elite democratic theory and traditional commercial forestry management were both ascendant under the Bush Administration. The antidote to this trend is likely increased public access to agency decisions and scientific analysis to support ecological forestry management in U.S. federal public land.

Additionally, while the participation process could be overwhelmed by input from commercial use interests, as described by Coggin's (2001) in his article entitled "Californicators, Quislings, and Crazies," this is not common in federal lands decision-making processes (Hibbard & Madsen 2003). Instead, the opposite seems to be the case in North Carolina (see Chapter Eight), as well as other studies (Steelman 1996; Tiech et al. 2004), which show the processes were largely unused by the "wise use" commercial forestry interests. These processes are overwhelmingly used by citizens and non-governmental groups with ecological forestry interests.

Given the sizable level of direct participation by unaffiliated individuals, most of whom filed objections to agency decisions, the pluralistic theory fails to explain this type

of direct participation. More participatory models offer better explanations for the substantial level of individual participation in nearly 17 percent of the projects issued in North Carolina. Additionally, conflict-driven (Mouffe 1999) dissent-based participation (Peterson 2004) was evident in over 57 percent of the projects (see Table 11).

Like “dissent-based conservation,” (Peterson MN et al. 2006:576) conservation democracy is the operationalization of participatory models of democratic theory that are most appropriate for conflict-ridden (agnostic) environmental management decisions. Given the innate conflict in western liberal democracies between the liberty of minority interests and the will of popular sovereignty, commonly described as the democratic paradox, conservation democracy provides a framework for avoiding process traps that are currently undermining collaborative management established for contentious federal lands decisions.

In addition to this attention to the democratic paradox, conservation democracy emphasizes the role of individual, unaffiliated citizens in decision-making processes supported by more participatory “radical” models of democratic theory (Mouffe 1999). This attention to direct citizen participation, combined with principles of dissent-based negotiations (see Chapter Two), provides the most ecologically promising approach toward federal forest management over contentious environmental decisions. In short, the role of public processes, open to direct citizen participation, is likely to decrease the frequency that federal agencies will propose projects, either because of the bullet-proofing effect (described above) or otherwise.

Like the goal of conservation biology, “to provide principles and tools for preserving biological diversity” (Soule 1985), conservation democracy holds that increased and improved democratic processes for decision-making can provide for improved environmental outcomes (National Research Council 2008). In setting the stage for a new application of social sciences to conservation problems, this approach challenges practitioners and theorists to develop more participatory models of democratic decision-making. Like the core function of conservation biology, “providing reliable and useful scientific information on biological diversity *and* its conservation” (Meine, Soulé & Noss 2006:646, emphasis added), conservation democracy is tasked with the goal of finding reliable and useful ways to bring diverse populations into participatory processes to improve environmental decisions.

Beyond national forest planning, conservation democracy theorizes increased participation as a potential way to improve a variety of current and imminent environmental concerns operating at different spatial and temporal scales. If the Forest Service, or the U.S. more broadly, reasonably expects to adapt to on-going and intensifying problems of climate change, for example, it would be wise to pay attention to participatory approaches to environmental decision-making. Conservation democracy provides a more adequate understanding of environmental democratic processes that emphasize direct, dissent-based participation by individual citizens and non-governmental groups, especially from diverse populations, in confronting the most urgent ecological issues.

Given the dimensions of this task, as well as the vigorous empirical study required to advance it, this dissertation provided one example of an interdisciplinary approach to field-induced problem-solving to explore questions about the ecological consequences of different democratic theories. Conservation democracy requires a grounding in policy and conservation literatures, a mission-driven orientation, and a recognition that potential solutions to environmental problems are interconnected with social structures and governance.

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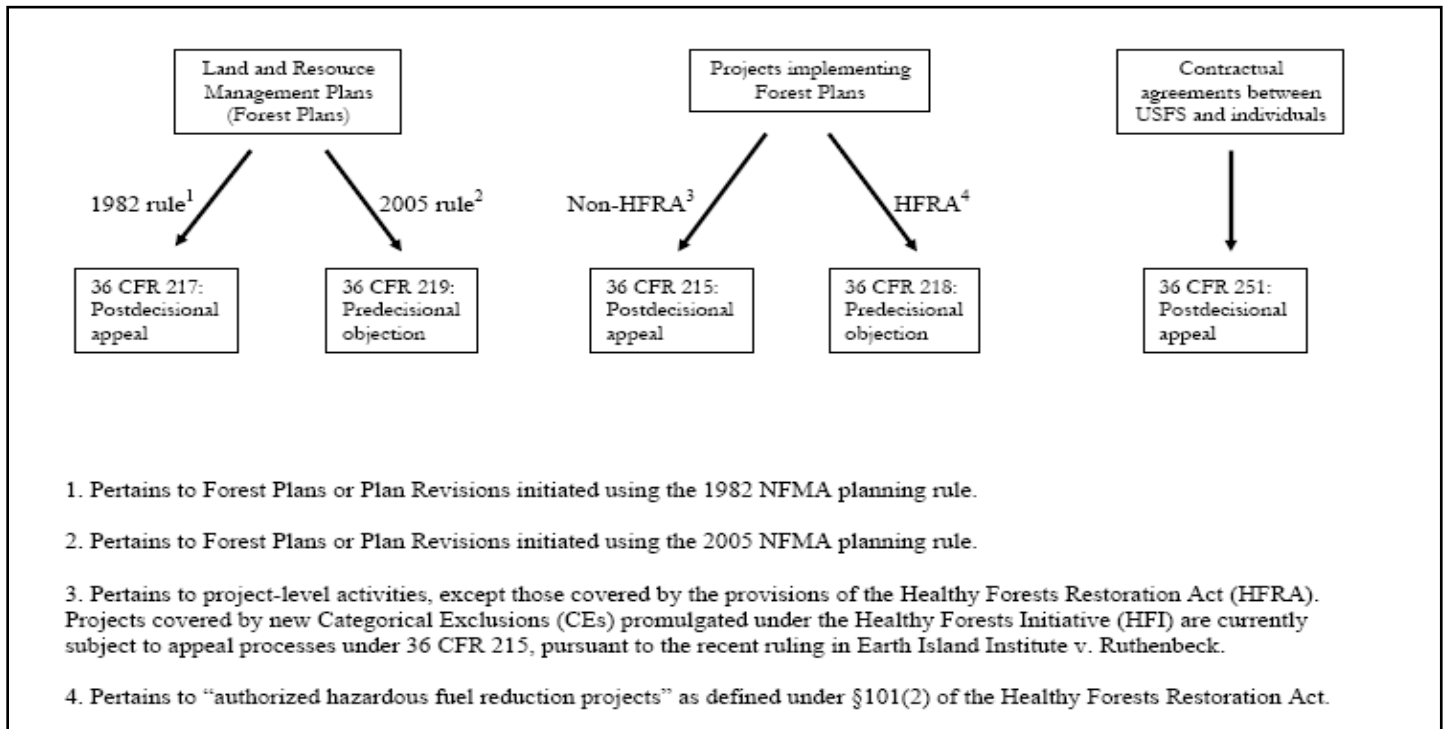
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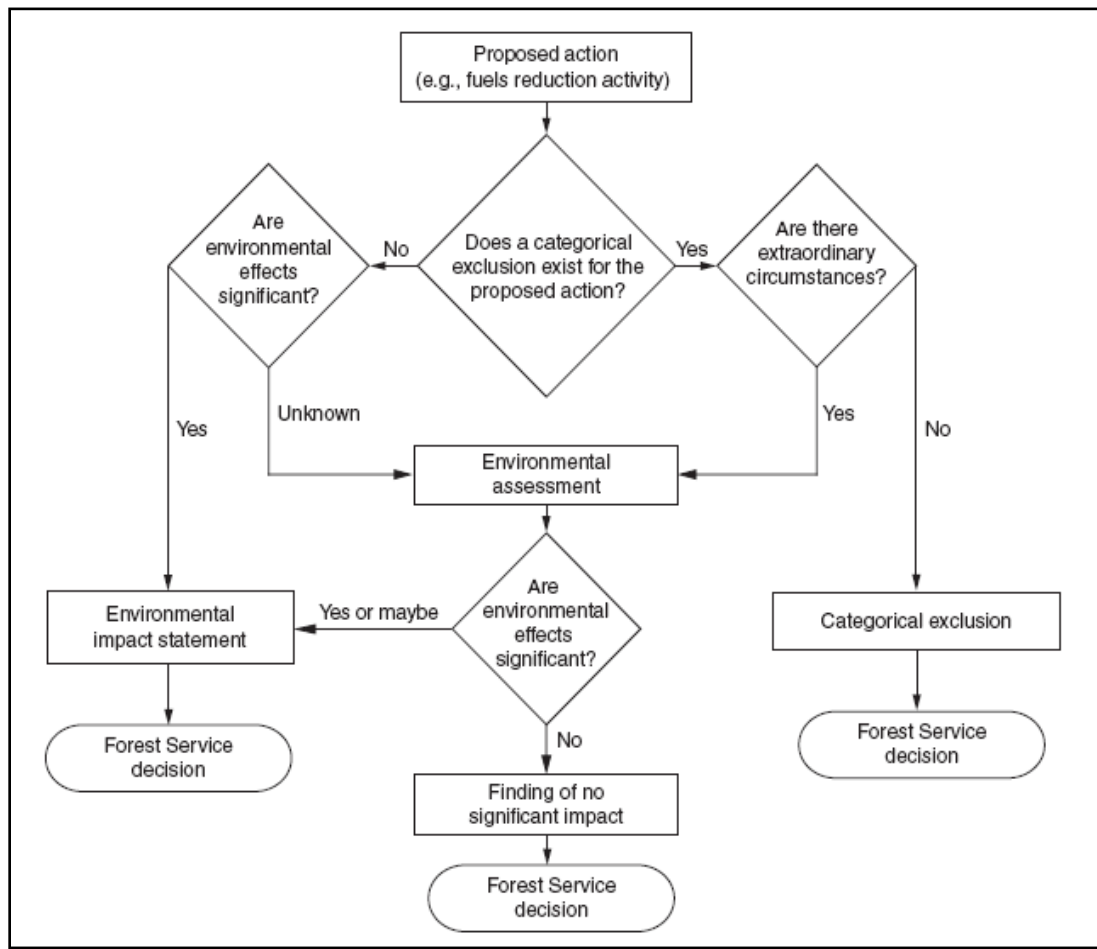
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APPENDIX A: DIAGRAM OF APPEALS PROCESS



Source: Abrams, J. “Policy Context for Appeals of Forest Service Decisions” ERI, NAU

APPENDIX B: FOREST SERVICE PROJECT-LEVEL NEPA PROCESS



Source: GAO 2006

APPENDIX C: PROJECTS

Project	Year	Name	Forest	Acres	CE
1	2003	Wildlife Brush Openings Lower Winespring	Nantahala	50	6
2	2003	Abner Southern Pine Beetle Salvage	Nantahala	1	14
3	2003	FY 04 Fuel Reduction Wildlife Prescribed Burns	Uwharrie	1708	10
4	2004	Grass Forbs Habitat Creation	Pisgah	10	6
5	2004	Early Successional Habitat Creation Comp	Pisgah	7	6
6	2004	Site Preparation And Restoration Of SPB Infested Areas	Nantahala	113	5
7	2004	Office Oak Demo	Nantahala	4	12
8	2004	Dukes Marina Forest Health Project	Nantahala	22	6
9	2004	Create And Maintain Grass Forbs Wildlife Habitat	Nantahala	10	6
10	2004	Site Preparation And Reforestation In SPB Infested Areas	Nantahala	112	5
11	2004	Ruffed Grouse Brood Habitat Improvement	Nantahala	10	6
12	2004	Restoration Treatment For Sands Of SPB Killed Trees	Nantahala	87	5
13	2004	Lake Powhatan Improvements	Pisgah	128	3
14	2004	John Green Bend Wildlife Opening	Nantahala	10	6
15	2004	Mechanical Southern Pine Beetle Prevention Treatment	Croatan	75	6
16	2004	Mechanical Southern Pine Beetle Prevention Treatment	Croatan	60	12
17	2004	Buck Creek Botanical Habitat Restoration	Nantahala	374	6
18	2004	Ogreeta Southern Pine Beetle Site Preparation	Nantahala	16	5
19	2004	Fires Creek Stewardship Project Buckhorn Stewardship Project	Nantahala	217	6
20	2004	Fuel Reduction Burn	Nantahala	2271	6
21	2004	Dillingham Salvage	Pisgah	250	13
22	2004	Southern Pine Beetle Slash Down Release	Pisgah	136	5
23	2004	FY05/06 Fuel Reduction Wildlife Prescribed Burns	Uwharrie	7118	10
24	2004	Wolf Mountain Prescribed Burns	Nantahala	200	10
25	2005	Tusquitee Hazard Tree Removal	Nantahala	1	13
26	2005	Compartment 36 Stand 29 Croptree Release	Nantahala	40	6
27	2005	Carteret Craven Electric Row	Croatan	1	12
28	2005	Compartments 96 And 97 Croptree Release	Nantahala	182	6
29	2005	Catpen Stewardship	Pisgah	22	6
30	2005	Longleaf Restoration	Croatan	407	6
31	2005	Big Mosquito RCW Habitat Improvement Project	Croatan	777	6
32	2005	Big Mosquito 2	Croatan	244	6
33	2005	Bald Mountain Steels Creek Salvage	Pisgah	250	13
34	2005	Brice Creek Stewardship	Croatan	70	6
35	2005	FY 05/06 Southern Pine Beetle Restoration Project	Nantahala	367	5
36	2005	Green Mountain Wildlife Field	Pisgah	3	6
37	2005	Murray Branch Hazard Tree Removal	Pisgah	2	13
38	2005	FY 05 Watershed Improvements	Nantahala	1	4

39	2005	Pre-Commercial Thinning For Southern Pine Beetle Prevention	Croatan	131	6
40	2005	Pre-Commercial Thinning For Long Term Soil Productivity Study	Croatan	42	6
41	2005	English White Pine	Pisgah	51	14
42	2005	NC Arboretum Canopy Walk	Pisgah	4	12
43	2005	Southern Pine Beetle Restoration	Pisgah	42	5
44	2005	Evans Creek Evan's Creek Soil And Water	Nantahala	1	4
45	2005	Fall Flight Project	Croatan	111	14
46	2005	Short Pine Project	Croatan	416	6
47	2005	Southern Pine Beetle Prevention	Croatan	52	6
48	2005	Pekin Wildlife Openings	Uwharrie	10	6
49	2005	Buster Vinson Sugar Creek Prescribed	Nantahala	200	10
50	2006	Lime Project	Croatan	1673	6
51	2006	Cherry Springs Watershed Project	Nantahala	1	4
52	2006	Soil And Water 06	Nantahala	6	4
53	2006	FY 06 Southern Pine Beetle Restoration	Pisgah	126	5
54	2006	FY 07 Southern Pine Beetle Restoration Project	Nantahala	66	5
55	2006	Hazardous Fuel Reduction And Wildlife Habitat Improvement	Uwharrie	4500	10
56	2006	Schenck White Pine	Pisgah	3	3
57	2006	FY 07 Watershed Improvement Project	Nantahala	1	4
58	2007	Bender Beetle	Croatan	156	6
59	2007	Pine Progeny Test Pine Precommercial Thinning	Nantahala	6	6
60	2007	Big Creek Thinning	Uwharrie	53	12
61	2007	Row Pine	Croatan	284	6
62	2007	Southern Pine Beetle Restoration	Nantahala	33	5
63	2007	Cottonmouth	Croatan	499	5
64	2007	Crown Touch And Release	Uwharrie	1160	5
65	2008	2008 Watershed Project Copper Creek Project	Nantahala	1	5
66	2008	Drum Chopping Plantations	Croatan	225	5
67	2008	Twister Salvage Project	Croatan	200	13

APPENDIX D: CODING SHEET

Style	Vehicle	Rep	Affiliation	Interest Identification	Locus
1Handwritten	1Letter	1Indv	1Individual	1Hunter/Angler	Zip
2Typed	2Verbal	2NGO	2TroutUnlimited	2Environmental/Conservation/Preservation	
3Form Letter	3Other	3Gov	3NWTF	3Recreationalist	
4Other			4RuffedG	4Consumptive User/Developers/Business	
			5WNCA	5Professional/Scientific/Historical	
			6SAFC	7State	
			7SABP	8Federal	
			8NCWRC	9(other)	
			9NCDCR		
			10DWQ		
			11HotSprings Mountain Club		
			12App Trail Conf		
			13WildlawNC		
			14MtHighHikers		
			15NCSNaturalHeritageProgram		
			16SAMUC		
			17USFWS		
			18EBCherokee		
			19SClub chapter		
			20NCFS		
			21TNC		
			22NRCS		
			23NC DCM		
			24ATR		

Length	Detail	Attitude	Cause	Effect
0-150 words (.5)	1 No Detail	1Support	1Road Construction	1Ecological Forestry
150-250 (1 pg)	2Support/Oppose	2Oppose	2Precommercial Thinning	2Aesthetics
250-500 (2 pgs)	3 1-2 topics	3Mixed	3Commercial Logging	3Recreation
500+ (3+ pgs)	4 3-4 topics	4Neutral	4Burning	4Scientific
	5 5+ topics		5Other	5Other
			6None Mentioned	6None Mentioned

APPENDIX E: STATISTICAL TESTS

Notes from Chapter Six: Predictors of Public Participation

By fitting a sequence of logistic regression models, the participation type is used as the binary response to determine which combination of variables is the best predictor of participation type. These consider the physical size of the project, both raw and log-transformed, number of species in the project, both raw and log-transformed, and these two variables in combination.

Table 1. AIC values of fitted logistic regression models

#acres	84.54
log(#acres)	79.01
#species	91.03
log(#species + 0.5)	86.14
log(#acres) + #species	79.14
log(#acres) + log(#species + 0.5)	76.82

The best models use log-transformations of the predictors. A model that includes both log(#acres) and log(#species + 0.5) yields a small improvement over a model with only log(#acres).

Table 2 Parameter estimates from the AIC-best two-predictor model

Intercept	-1.9691	0.6216	-3.1677	0.0015
log(#acres)	0.4389	0.1452	3.0232	0.0025
log(#species + 0.5)	0.4765	0.2421	1.9682	0.0490

The coefficients of both regressors are statistically significant but the coefficient of $\log(\text{\#species} + 0.5)$ is just barely so.

Visualizing the One-Variable Models

With two variables in the final model, it is difficult to visualize the predicted model graphically. It is however easy to visualize the one-predictor models. To do this, an R function is used (**plot.logi.hist**) published in the *Bulletin of the ESA* (de la Cruz Rot, 2005; <http://www.esapubs.org/bulletin/backissues/086-1/bulletinjan2005.htm#et>).

Figs. 3 and 4 were obtained using this function. They are graphical summaries of two of the single predictor models listed in Chapter Seven. Fig. 3 is the logistic regression model containing $\log(\text{\#acres})$ and Fig. 5 is the logistic regression model containing $\log(\text{\#species} + 0.5)$. The red curve is the estimated logistic curve for that model. At the top and bottom margins are dit plots and box plots of the distribution of the model regressor done separately by project type. The notch in each box plot estimates a 95% confidence interval for the displayed median.

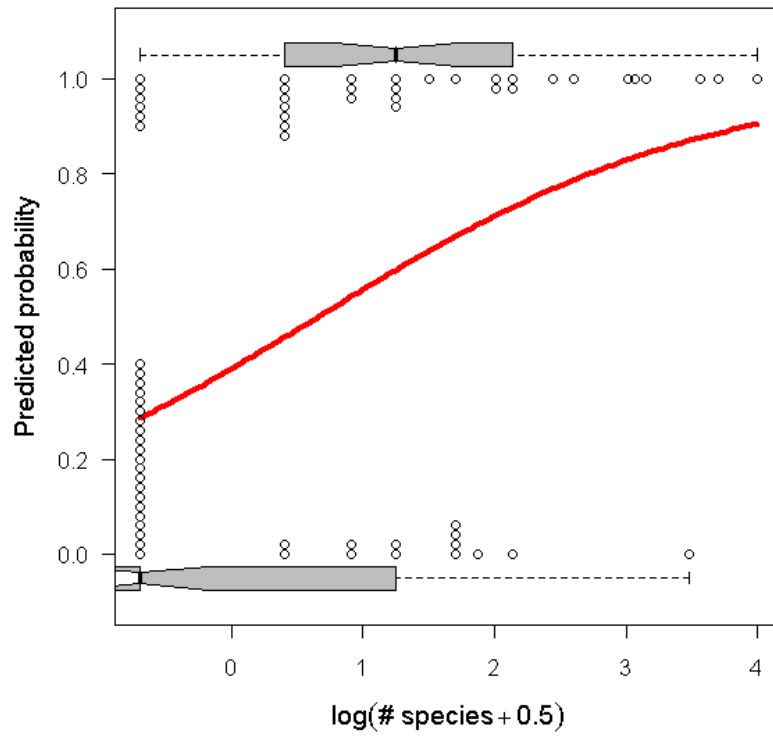


Fig. 3 Fitted logistic regression model with $\log(\# \text{ species} + 0.5)$ as the regressor

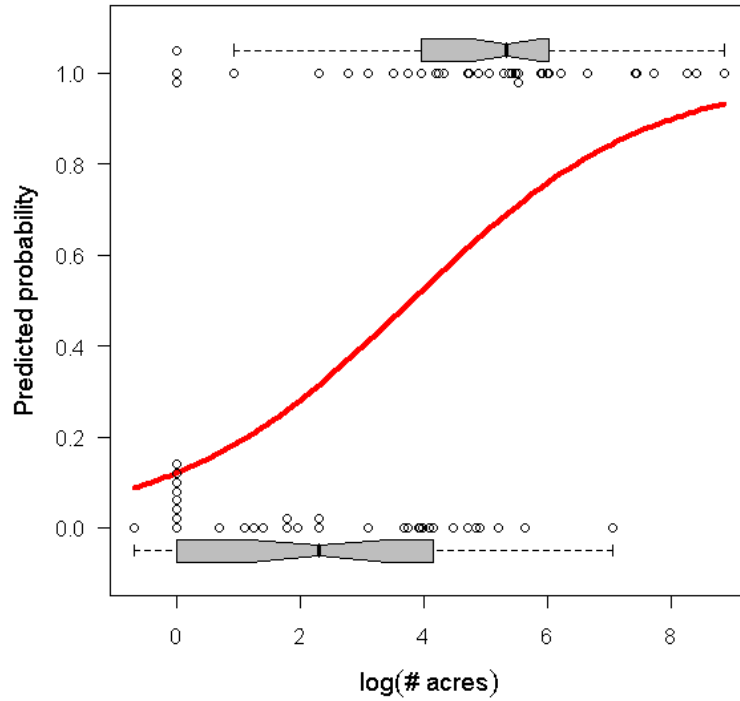


Fig. 4 Fitted logistic regression model with $\log(\# \text{ acres})$ as the regressor

The two plots suggest that $\log(\# \text{ acres})$ alone is a better indicator of participation type than is $\log(\# \text{ species} + 0.5)$ alone. The distribution of $\log(\# \text{ acres})$ clearly shows better separation by project type.

Confusion Matrices and ROC Curves

In order to understand how the two variables act in concert in the same model the predicted probabilities, $\hat{\pi}$, for various predictor combinations can be used to classify an observation's participation type as either "elite" (Type = 0) or "participatory" (Type = 1). To do this we choose a cut-off c such that when $\hat{\pi}_i > c$ we classify observation i as Type = 1, otherwise we classify it as Type = 0. A so-called confusion matrix is then used to describe the accuracy of the classification rule (Table 1). The two diagonal entries of the confusion matrix give the number of observations that were correctly classified by the model. The two off-diagonal entries record the number of observations that were incorrectly classified.

Table 1 The confusion matrix for a classification rule

		Observed	
		$Y = 0$	$Y = 1$
Predicted	$\hat{Y} = 0$	True Negatives	False Negatives
	$\hat{Y} = 1$	False Positives	True Positives

One reasonable choice for the cut-off is $c = 0.5$. Table 2 shows the confusion matrices obtained using a cut-off of $c = 0.5$ for three different models. The column

categories of the matrix are the observed values of the response while the row categories are the model predictions (just as in Table 3).

TABLE 2. Confusion matrices using $c = 0.5$ as the cut-off for three logistic regression models with different predictors. Row categories are the predictions; columns are the observed values.			
Model predictors	$\log(\# \text{acres})$	$\log(\# \text{species} + 0.5)$	$\log(\# \text{acres}) + \log(\# \text{species} + 0.5)$
Confusion matrix	0 1	0 1	0 1
	0 21 8	0 23 13	0 25 10
	1 13 26	1 11 21	1 9 24

As Table 2 reveals, there are trade-offs when choosing a classification model.

Although the model that uses both predictors did produce the smallest number of false positives, it did not yield the smallest number of false negatives. The model that contains only $\log(\# \text{acres})$ earns that distinction.

Receiver Operation Characteristics

Another strategy compared models using a range of possible values for c . This is traditionally done with a receiver operating characteristic (ROC) curve. Given the way entries in the confusion matrix respond to changes in c , it is not necessary to plot c directly. Instead, this section plotted the true positive rate (TPR) against the false positive rate (FPR). These two rates are obtained by dividing the number of true positives and false positives in the confusion matrix by the total observed number of positives and negatives, respectively. TPR is also called sensitivity while FPR is referred to as $1 - \text{specificity}$. Fig. 6 displays the ROC curves for the three models whose confusion matrices are given in Table 5. The **ROCR** package (Therneau et al. 2007) from the CRAN site was used for these calculations.

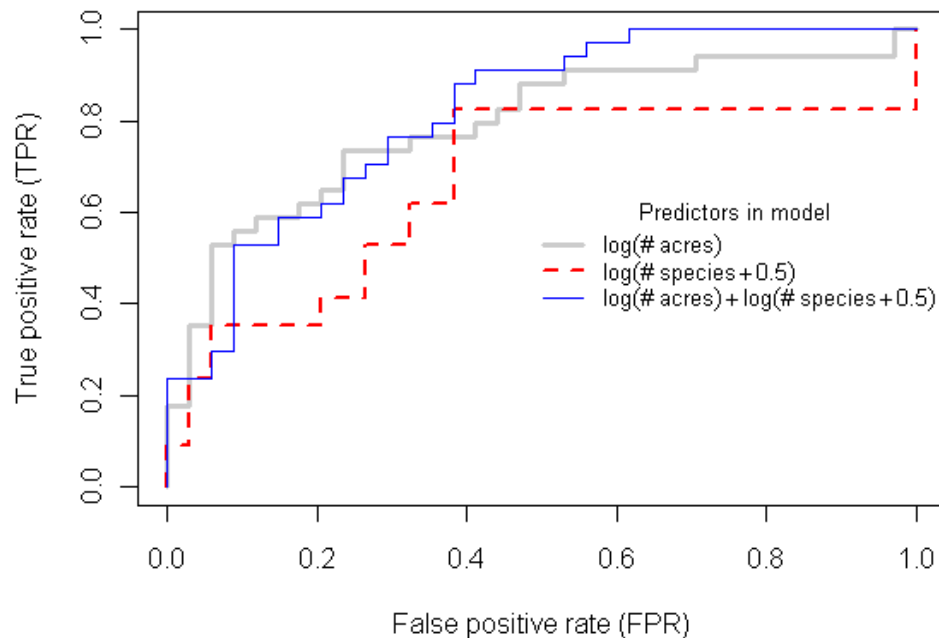


Fig. 5 ROC curves for the logistic regression models of Table 4

When $c = 1$ everything is classified as Type = 0 so the TPR and FPR are both 0.

When $c = 0$ everything is classified as Type = 1 so both the TPR and FPR are 1.

Consequently as c is reduced from 1 to 0 we move from the bottom left corner, (0, 0), to the top right corner, (1, 1), of the graph. If a model is any good, the TPR should grow faster than the FPR as c is decreased from 1. If the discrimination is perfect, as c is decreased from 1 to 0 it immediately jumps vertically from (0, 0) to (0, 1) and then head straight across along the top margin to (1, 1). In the typical scenario, assuming better than random discrimination, the ROC curve would be a continuous curve that connects (0, 0) to (1, 1) and also lies entirely above the line $y = x$.

When comparing two models (e.g. models 1 and 2), the ideal scenario for the ROC curve of model 1 would be that it is entirely above the ROC curve for model 2. In this case, model 1 is the better model. In practice, things are seldom this clear-cut. For

instance, in Fig. 3 the ranking of the three models is unclear because all of the ROC curves cross each other at some point. Still, the red curve, corresponding to the model with the single predictor $\log(\text{\#species} + 0.5)$, is seen to lie almost entirely below the other curves. It does manage to exceed each of the others very briefly, but for most values of c the red curve lies below the ROC curves of the other two models and hence should be deemed the inferior model. On the other hand, the blue and grey ROC curves cross each other repeatedly.

One way to produce an unambiguous ranking of models based on ROC curves is to calculate the area under the ROC curve (AUC). An AUC of 0.5 indicates that the model has no discriminatory ability at all (essentially yielding a ROC curve that is the line $y = x$). Values of AUC close to 1 are to be preferred. Thus for any set of related models the one with the highest AUC should be deemed the best model. Table 5 displays the AUC values for the three models whose ROC curves are plotted in Fig. 5. The model with the largest AUC value is the one that uses both variables.

Table 3 AUC values of fitted models

Predictors in model	AUC
$\log(\text{\#acres})$	0.80
$\log(\text{\#species} + 0.5)$	0.73
$\log(\text{\#acres}) + \log(\text{\#species} + 0.5)$	0.82

AUC has a second more mechanistic interpretation because it can be shown to be equal to a statistic known as the concordance index. One approach took the raw data and repeatedly paired up each Type = 1 observation with each Type = 0 observation and

compared all possible ways (using each observation multiple times). Next, the model is used to calculate $\hat{\pi}$, the probability of classifying the observation to be Type = 1, separately for each member of each 0-1 pair. If the model assigns a higher probability to the Type = 1 observation than it does to the Type = 0 observation in that pair, the model and the observation pair are in concordance. The fraction of times this occurs among all the possible pairs of zeros and ones is called the concordance index. Thus according to this interpretation, an AUC of 0.82 for the best model of Table 5 means that 82% of the possible 0-1 pairs that one could construct from the raw data would be ordered correctly by the model.

Notes from Chapter Seven: Frequency of Project Occurrence

A number of formal tests are available to explore a constant accumulation rate. A shortcoming of all these tests is that they are designed to test for very specific departures from a constant rate. For instance the Laplace test (Cox and Lewis, 1978, p. 47) is a test for monotonicity. The test statistic compares the mean inter-arrival time, \bar{T} , against the midpoint of the observation period of length L . If the mean is either much smaller or much larger than the midpoint, that is evidence for a decreasing or increasing trend over time. The test statistic is

$$U = \frac{\bar{T} - \frac{L}{2}}{L\sqrt{\frac{1}{12n}}}$$

which has an approximately standard normal distribution. If we take L to begin at the first event so that there are $n = 66$ inter-arrival times, $U = -1.895$ which just fails to be statistically significant ($p = 0.058$).

The Laplace test is a test of monotonicity and is insensitive to other possibilities, for instance a bimodal pattern in which a high rate of event occurrence period is followed by a low rate of occurrence period. Because bimodality is the primary pattern of interest, tests of monotonicity are of limited value. An alternative tack is to fit models in which the rate of event occurrence follows a prescribed pattern and then assess how well these models fit the data. One groups the events into intervals and models the counts per interval over time, while a second approach examines how the waiting times between events have changed over time.

Poisson models that were fit to the data include a **linear model, quadratic model, segmented regression model, and a breakpoint regression model**. The last two are piecewise linear models that differ in how the pieces relate to each other. A segmented regression model is continuous in that the two linear pieces are forced to meet at a common point, while a breakpoint regression model can be discontinuous. Because the results could be sensitive to the manner in which the data are partitioned, the models were fit three times using different numbers of intervals for grouping the observations: 15, 20, and 25 intervals. Figs. 7-8 display the results.

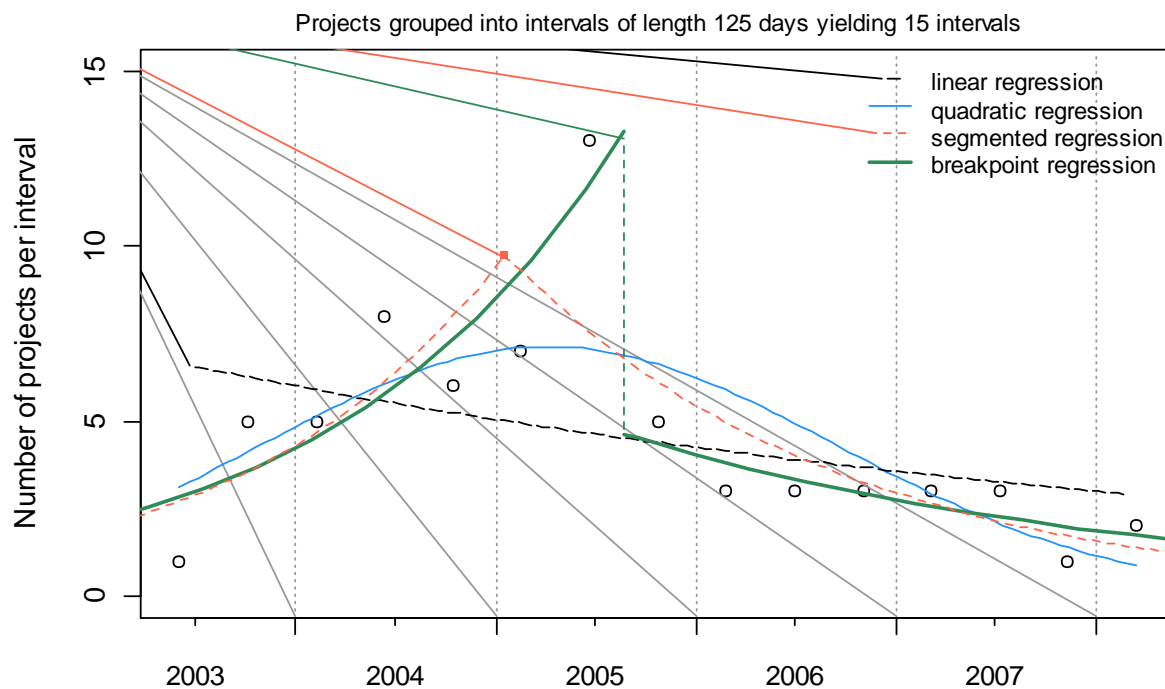


Fig. 6 Number of projects per time interval when grouped into intervals of length 125 days yielding a total of 15 intervals. The predicted means obtained from four different models are displayed.

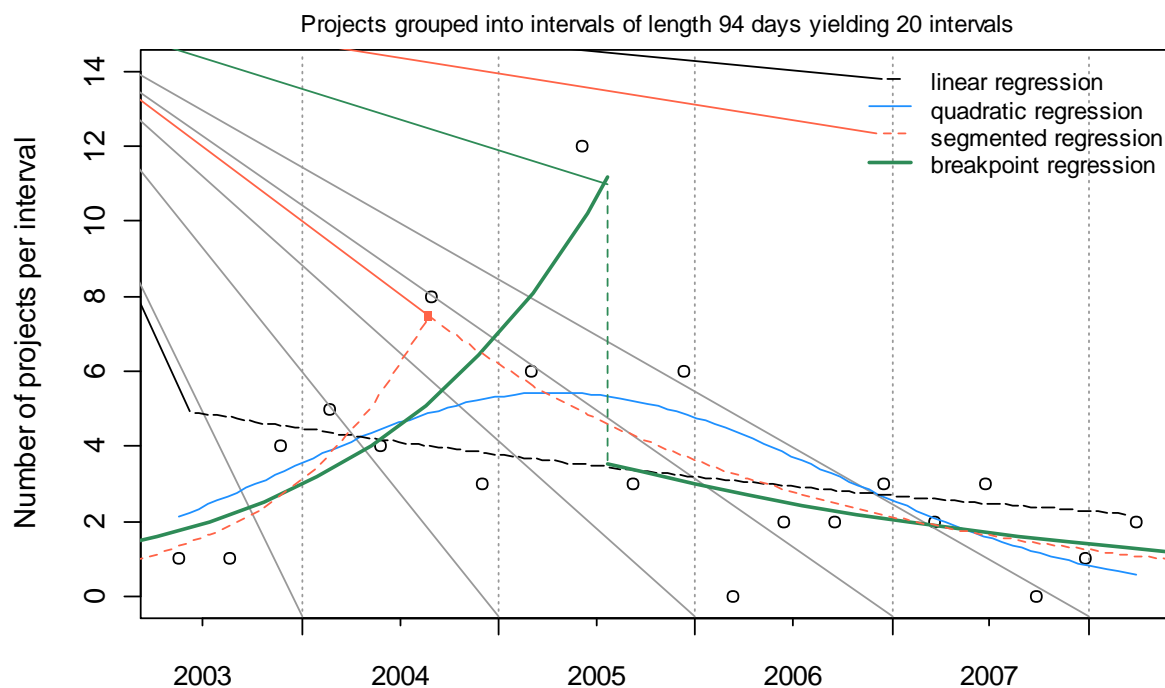


Fig. 7 Number of projects per time interval when grouped into intervals of length 94 days yielding a total of 20 intervals. The predicted means obtained from four different models are displayed.

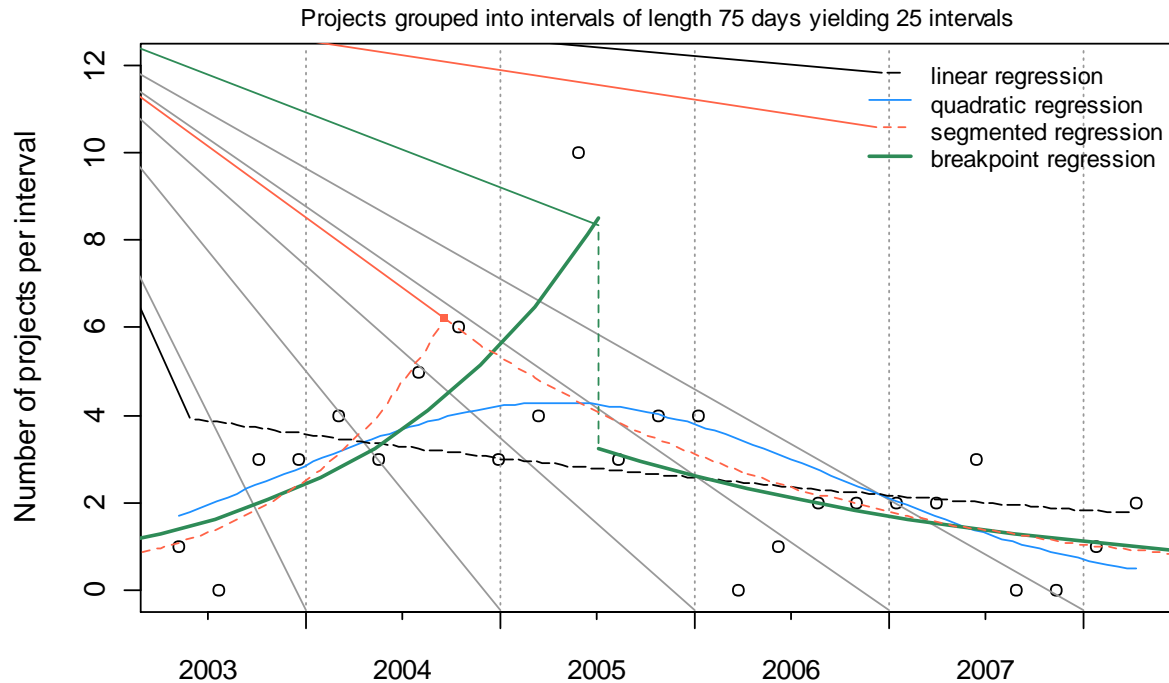


Fig. 8 Number of projects per time interval when grouped into intervals of length 75 days yielding a total of 25 intervals. The predicted means obtained from four different models are displayed.

As the number of intervals is increased, the counts naturally become sparser so much so that for $n = 25$ the pattern on the right hand side of the graph becomes rather noisy (Fig. 8). Table 5 compares individual models using AIC and AICc. (AICc is preferred over AIC for model selection when the ratio of the number of observations to the number of parameters is low as it is here.) The table is partitioned into three sections because the model results obtained when using different numbers of intervals are not comparable.

Model	logLik	#parms	n	AIC	AICc
linear	-35.3255	2	15	74.6509	75.6509
quadratic	-29.7255	3	15	65.4511	67.6329
segmented	-28.5593	4	15	65.1186	69.1186
breakpoint	-26.4733	5	15	62.9467	69.6133
linear	-47.5231	2	20	99.0463	99.7522
quadratic	-41.3759	3	20	88.7517	90.2517
segmented	-39.3241	4	20	86.6482	89.3149
breakpoint	-36.8474	5	20	83.6948	87.9805
linear	-51.3423	2	25	106.6846	107.2301
quadratic	-45.5765	3	25	97.1531	98.2959
segmented	-43.4122	4	25	94.8243	96.8243
breakpoint	-41.8213	5	25	93.6426	96.8005

Table 5 A comparison of Poisson regression models fit to counts in intervals

The quadratic, segmented, and breakpoint regression models are competitive in all cases, while the linear model never provides evidence that project intensity has changed over time. The pattern appears to be bimodal consisting of an increasing intensity followed by a decreasing one. The location of the change point varies depending on the model and the number of intervals used in fitting the model. For the breakpoint regression models fit using 20 and 25 intervals, the change points occur on **July 23, 2005 and July 3, 2005**, respectively. For the quadratic model that was fit with 15 time intervals the change point occurs on **April 5, 2005**.

Analyzing the Waiting Times between Events

Events that occur at irregularly spaced intervals over time, such as the initiation dates of individual projects considered here, define a point process. Analyzing the total number of events that have occurred at any time (t) is called a counting process. The time spans between individual events are referred to as waiting times. If the waiting

times are independent they define another kind of stochastic process called a renewal process. Waiting times are typically modeled using asymmetric probability distributions with positive support. Examples include the exponential, Weibull, lognormal, and log-logistic distributions. The area of statistics that deals with fitting models to duration data is known as survival analysis, also called event history analysis.

Probability distributions are characterized by a density function, $f(t)$, and/or a distribution function, $F(t)$. Formally, $F(t) = P(T \leq t) = \int_0^t f(u)du$. For a renewal process, $F(t)$ is the probability that an event occurs in t units of time or less. Typically survival analysis requires using the survival function, $S(t)$, defined as $S(t) = 1 - F(t)$. Thus $S(t)$ is the probability that it takes greater than t units of time for an event to occur. Another quantity of interest is the intensity of the process, also called the hazard rate, $h(t)$. Informally the hazard is the probabilistic rate at which events occur in any given instant of time. More precisely, the hazard rate is the probability that an event occurs in the next small interval of time given that it has not occurred so far, divided by the length of that time interval. (Technically it is limit of this ratio as the length of the time interval goes to zero.)

Loosely speaking the hazard rate is a conditional probability rate per unit time. In the language of survival analysis, asking whether projects arose at different rates in different years is equivalent to asking whether or not the hazard function is constant over time. Because the project waiting times can be ordered by calendar date we can further investigate whether the change in the hazard rate is influenced by calendar date.

In the project data set a number of projects are listed as occurring on the same day. This means there is a waiting time of zero between those projects. Zero is not a legal value for the probability distribution, so when projects occurred on the same day the ties were arbitrarily broken by evenly spacing out the starting times of those projects on those days.

The survival package of R (Therneau and Lumley, 2008) can be used to fit models to time duration data. It allows the exponential, Weibull, lognormal, or log-logistic distributions to be used as probability models. Each of these distributions was fit to the between project waiting times and AIC was used to select the best one (Table 6).

Table 6 A comparison of waiting time distributions

Model	logLik	AIC
Weibull	-282.46	568.93
lognormal	-284.84	573.68
log-logistic	-285.77	575.55
exponential	-290.11	582.23

The AIC-best model is a Weibull distribution. Its estimated hazard function is shown in Fig. 9. In this case, the hazard is a decreasing function of time.

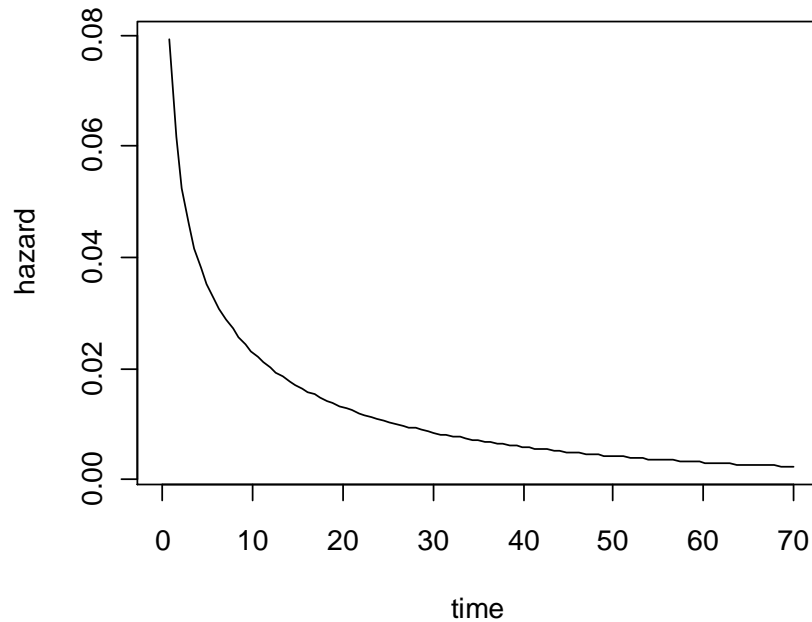


Fig. 10 Hazard function of a Weibull distribution fit to the between-project waiting times

Because the Weibull hazard varies over time, it is possible to check if it also varies with respect to calendar time. Five polynomial functions of calendar time—constant, linear, quadratic, cubic, quartic—and two piecewise linear regression models, models constructed from two linear components that have different slopes. The linear components can be connected to yield a continuous curve (segmented regression), or not, yielding a discontinuous curve (break point regression). The transition point from one linear segment to the other is called a knot or change point. Separate candidate models were fit using each of the event times as possible knot locations and the knot location that maximized the log-likelihood was used for the final model. One additional change point model was considered: a piecewise constant (step) model, a model that is constant with respect to calendar time except that this constant changes to a new value when the date exceeds the value of the knot. The optimal knot location was chosen just as it was for the piecewise linear models. Table 7 summarizes the results. Models were

fit using all four probability models, but because the Weibull always ranked best only the Weibull results are displayed.

Table 7 A comparison of Weibull models with calendar date as a predictor

Model	logLik	AIC
constant	−282.46	568.93
piecewise constant (step)	−278.95	563.90
linear	−280.43	566.86
quadratic	−277.27	562.54
cubic	−275.82	561.64
quartic	−275.60	563.21
segmented	−276.02	560.04
breakpoint	−274.94	561.87

These models with a calendar date performed better than a model that ignores calendar date (constant). The model that used a linear function of calendar date (linear) was the second worst model. The remaining models are all very close in terms of AIC. The quartic model can be rejected for being overly complicated. It's AIC actually increased relative to the simpler cubic model suggesting that the additional term is not justified. Although the cubic model ranked second best and yielded a lower AIC than the simpler quadratic model, the cubic term itself was not statistically significant ($p = 0.08$). The cubic model just beats the breakpoint regression model. The segmented regression model ranks best in terms of AIC.

A Weibull distribution is fully specified with two parameters referred to as the scale and the shape parameter. R's `survreg` function models the logarithm of the scale parameter as a linear function of regressors. So in `survreg` a regression model with a single predictor x would be the following.

$$\log(\text{scale}) = \beta_0 + \beta_1 x$$

This results in the following parameterization of the Weibull survival function in R.

$$S(t) = \exp[-(\text{scale})^{-\alpha} t^{\alpha}] = \exp[-\exp(\beta_0 + \beta_1 x)^{-\alpha} t^{\alpha}]$$

Here α is the shape parameter. The corresponding hazard function is

$$h(t) = \alpha(\text{scale})^{-\alpha} t^{\alpha-1} = \alpha \exp(\beta_0 + \beta_1 x)^{-\alpha} t^{\alpha-1}.$$

The survreg function of R returns the reciprocal of the true shape parameter and labels it in the output as the scale parameter. The estimated hazard functions for six of the models in Table 7 are shown in Fig. 11.

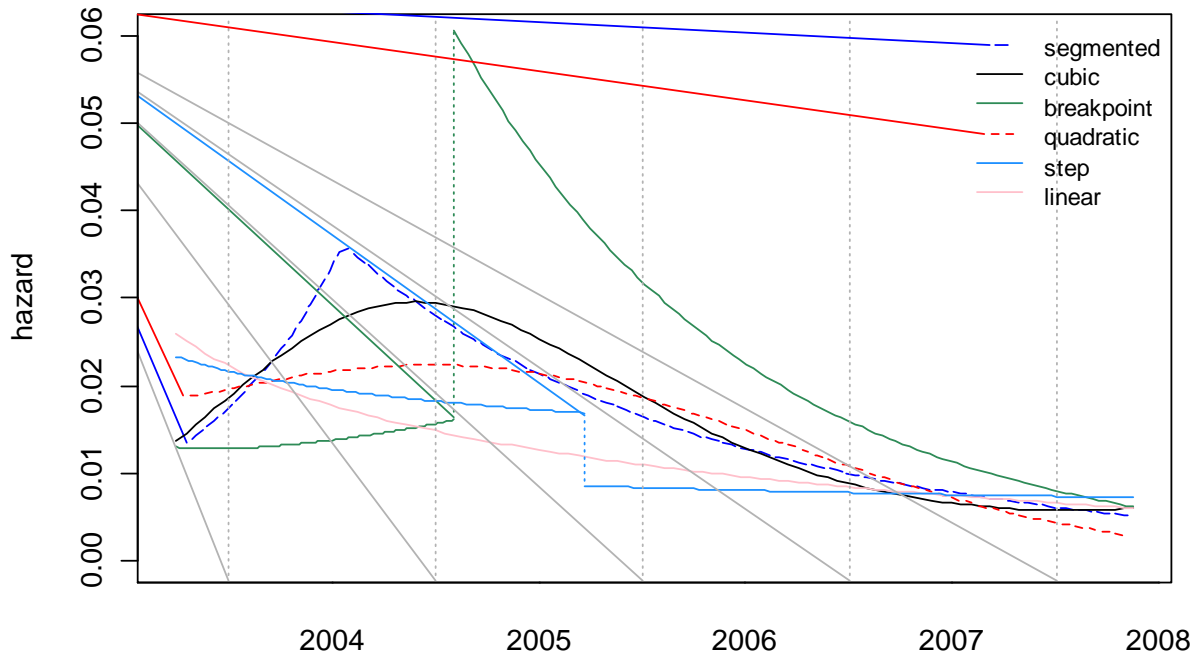


Fig. 11 Hazard rate (intensity) is plotted as a function of calendar date for various Weibull models. The legend lists models in their AIC-best order: best (top) to worst (bottom)

Excluding the step and linear models, the intensity (hazard) of the renewal process is seen to increase up until a point, a point that varies between mid-2004 to early 2005 depending on the model, after which the intensity decreases. According to

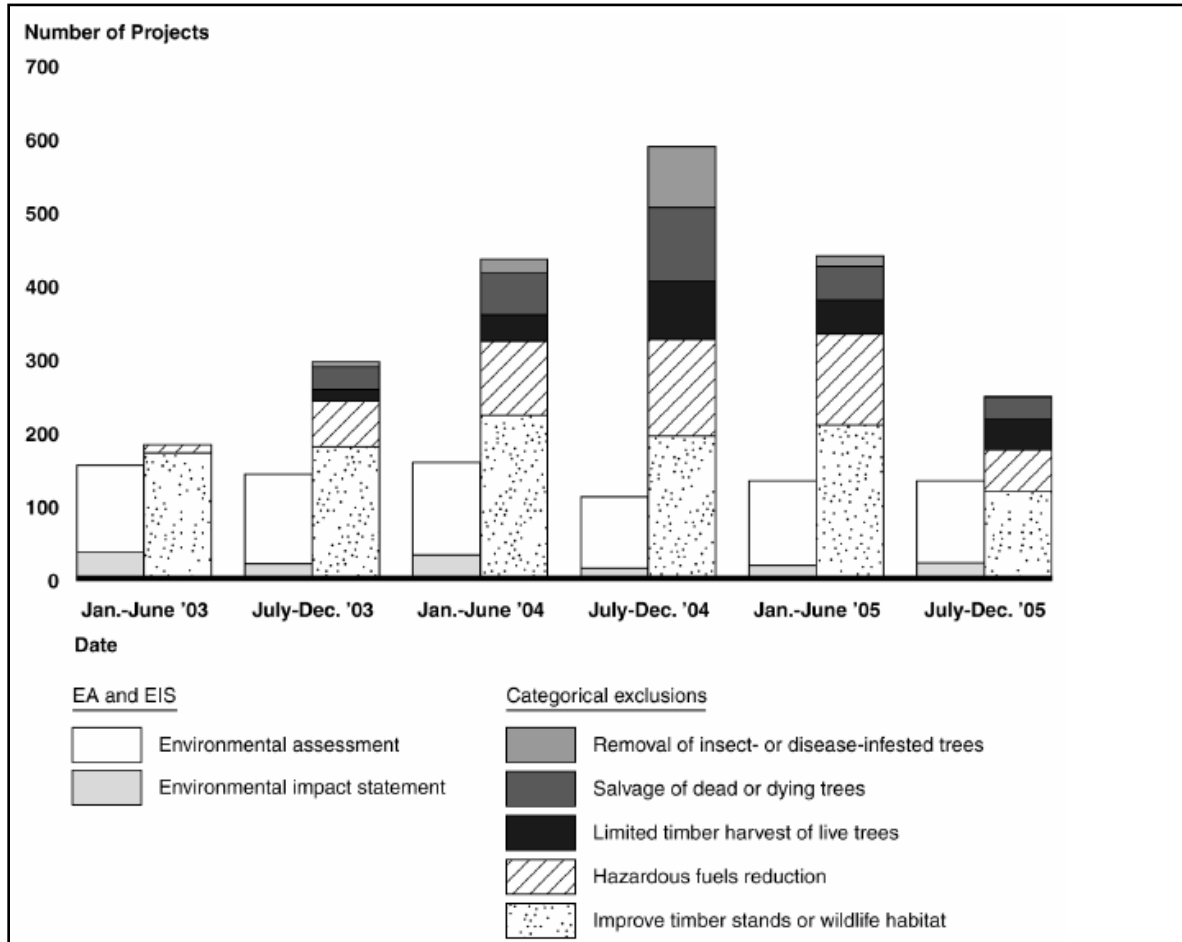
these models the projects initially increase in their frequency after which they occur less frequently.

The models differ dramatically in the estimated location of the change point (Table 8). The form of the model, continuous versus discontinuous, appears to influence this somewhat. The less constrained discontinuous models typically have later estimated change points (Feb 3, 2005 for the breakpoint model and September 19, 2005 for the piecewise constant model). The segmented regression model places the change point at July 25, 2004 while the peaks of the cubic and quadratic models occur on January 9, 2005 and April 17, 2005 respectively. (This parallels the behavior of the segmented regression model for grouped data as seen in Figs. 6-8.) Furthermore, the log-likelihoods of the segmented regression models that differ only in their knot locations were all very similar. Therefore, although the data clearly indicate that the monotonicity of the hazard did change at some point (switching from an increasing hazard to a decreasing hazard), the location of that change point varies from model to model (Table 8).

Table 8. Location of change points

Model	Change point
constant	none
piecewise constant (step)	September 19, 2005
linear	none
quadratic	April 17, 2005
cubic	January 9, 2005
quartic	not evaluated
segmented	July 25, 2004
breakpoint	February 3, 2005

APPENDIX F: GAO 2007 GRAPH



GAO graph of vegetation management projects approved by the Forest Service using an EA, EIS, and CE from 2003 through 2005.

APPENDIX G: RECORDS REQUEST TO GAO

2/24/2009 3:33 PM

Chief Quality Officer
U.S. Government Accountability Office
Room 6K17Q
441 G Street NW
Washington, DC 20548
FAX: (202) 512-4844
EMAIL: RecordsRequest@gao.gov

Dear Patricia Stokes and Karen Y Holliday,

I am writing about the GAO's Natural Resources & Environment report (GAO-07-99) published October 2006, entitled "FOREST SERVICE: Use of Categorical Exclusions for Vegetation Management Projects, Calendar Years 2003 through 2005". I am a doctoral student at UNC Chapel Hill, and my dissertation prospectus requires that I obtain data available in the GAO's October 2006 study, written by David Bixler, Matthew Reinhart, and others.

I am seeking electronic copies of the spreadsheets created for this report relating to USFS Region Eight data for *North Carolina EIS, EA, and CE projects.

Please let me know if there is anything else I need to do for this request.

Thank you for your help.

Best regards,

Andrew George
andrewg@unc.edu
Doctoral Candidate/Lecturer
Ecology
UNC Chapel Hill
Phone: 828 280 6956

APPENDIX H: FOIA REQUEST

Freedom of Information Act Request to US Forest Service

July 1, 2009

Marisue Hilliard
National Forests in North Carolina
160A Zillicoa Street
Asheville, NC 28801

Re: Freedom of Information Act Request

Dear Forest Supervisor:

Under the Freedom of Information Act, I am requesting copies of project files for USFS projects listed on the attached form. I am a graduate student researching North Carolina's national forest categorical exclusion projects from 2003-2008. As a doctoral candidate at the University of North Carolina at Chapel Hill's Curriculum for the Environment and Ecology, I represent an educational institution and I would like to request a fee waiver for any copying and mailing costs in order to fulfill this request.

We further request that any fees associated with this request be waived because disclosure of the records is "likely to contribute significantly to public understanding of the operations or activities of government and is not primarily in the commercial interest of the requester." 5 U.S.C. 552(a)(4)(A)(iii). This request satisfies all of the requirements for a fee waiver.

I have no commercial interest in the records sought. My interest lies in using the requested information to advance my own understanding, as well as that of other members of the public, into the activities of the USFS regarding its operations and purposes. In sum, application of the statute to this request compels the conclusion that a fee waiver is appropriate.

If there are any fees charged for searching or copying the records that are not waived, please let me know before you fill my request. If you deny any part of this request, please cite each specific reason that you think justifies your refusal to release the information. Please notify me of appeal procedures available under the law.

I would also like to thank your assistant forest planner and others NEPA field officers for their help and time spent educating me about this process. If you have any questions processing this request, you may contact me at the following telephone number 828 *** **.*.

Sincerely,

Andrew George
Curriculum for the Environment and Ecology
209 Coates Building CB# 3275
223 E. Franklin Street
UNC Chapel Hill
Chapel Hill NC, 27514

CC: Lisa Harper, Forest FOIA coordinator
CC: Heather Luczak, Assistant Forest Planner