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CONSERVATION OR PRESERVATION? A QUALITATIVE STUDY OF THE CONCEPTUAL FOUNDATIONS OF NATURAL RESOURCE MANAGEMENT

(Accepted in revised form January 7, 2007)

ABSTRACT. Few disputes in the annals of US environmentalism enjoy the pedigree of the conservation-preservation debate. Yet, although many scholars have written extensively on the meaning and history of conservation and preservation in American environmental thought and practice, the resonance of these concepts outside the academic literature has not been sufficiently examined. Given the significance of the ideals of conservation and preservation in the justification of environmental policy and management, however, we believe that a more detailed analysis of the real-world use and understanding of these ideas is needed. In this paper, we describe the results of a qualitative, semantic study of the concepts of conservation and preservation undertaken in the context of the Chattahoochee National Forest (CNF), located in northern Georgia (USA). Thirty in-depth interviews were conducted with scientists and north Georgia residents either interested or involved in the future management of the forest. Respondents were asked to define conservation and preservation in their own words and to indicate which approach they felt was more appropriate for the management of the CNF. Qualitative content analysis was used to elicit a set of recurring themes for each foundational concept. Taken together, these themes help to flesh out the meaning of conservation and preservation for citizens and scientists today, and illustrate the evolving nature of two of the more significant and venerable ideas animating US environmental policy and management.

KEY WORDS: Chattahoochee National Forest, conservation-preservation debate, national forest management, philosophy of resource management, public attitudes toward nature

In the spring of 2003, *The New York Times* reported on the circulation of a memorandum within the US Republican Party urging Republicans to employ “greener” language when addressing their constituents, an attempt to appeal more to suburban voters interested in national park and national forest protection (Lee, 2003). Interestingly, the memo, prepared by the political pollster Frank Luntz, made a point of distinguishing between the terms “conservation” and “preservation.” The rationale for doing so was (not surprisingly) thoroughly political. Republicans “should be ‘conservationists,’ not ‘preservationists,’” the memo instructed, because the former term possessed many more “positive connotations” than the latter (Luntz,

2003, p. 142). According to the memo, the word “conservationist” implied an appealingly “moderate, reasoned, common sense position between replenishing the earth’s natural resources and the human need to make use of those resources.” “Preservationist,” on the other hand, conveyed a far less attractive position, describing a person “who believes nature should remain untouched – preserving exactly what we have” (Luntz, 2003, p. 142).

Setting aside the document’s salacious aspects (it was apparently not intended for public consumption), the Luntz memo can be seen as simply the latest word in a century-long debate over the rhetorical and conceptual terrain of US natural resource policy and management. Often portrayed as a deep fissure in the philosophical bedrock of environmental concern, the conservation-preservation divide is almost always traced back to a single dramatic event: the infamous showdown between John Muir and Gifford Pinchot over the damming of the Hetch Hetchy valley in Yosemite National Park in the early part of the 20th century (e.g., Nash, 2001; Righter, 2005). In the standard telling, the preservationist Muir – founder of the Sierra Club and one of the nation’s great wilderness proponents – extolled the spiritual and aesthetic qualities of wild nature, adopting a take-no-prisoners defense of the Hetch Hetchy valley from the dam builders. The conservationist Pinchot, on the other hand – the first head of the US Forest Service and a steadfast advocate of the efficient and equitable development of natural resources – backed the damming of the valley as its “highest use.” The battle lines, in other words, were drawn, and the debate that unfurled over Hetch Hetchy would in time become a kind of environmentalist legend, one repeated to generations of students of conservation history and the human dimensions of environmental management (e.g., Fox, 1981; Cortner and Moote, 1999; Andrews 1999).

Although more than a few observers have suggested that the conservation-preservation debate has been rather exaggerated, and that the theoretical and policy lines drawn between the two approaches – and between Muir and Pinchot more specifically – were in fact never all that sharp (e.g., Norton, 1991; Reiger, 2001; Miller, 2001; Meine, 2004), the view that there is an unbridgeable philosophical gulf separating conservation and preservation remains widely held. Many environmental philosophers and political theorists, for example, interpret the terms as expressing mutually exclusive normative and perhaps even metaphysical commitments. In these discussions, conservation is said to rest upon human-centered or anthropocentric foundations, while preservation is justified by nonanthropocentric claims, such as the argument that nonhuman nature has inherent worth or intrinsic value (a good of its own) that should always be promoted, regardless of its

usefulness to humans (e.g., Passmore, 1974; Devall and Sessions, 1985; Paehlke, 1989; Katz, 1997; Brulle, 2000).

Dissenting from this deep moral and metaphysical reading of conservation and preservation, the philosopher Bryan Norton (1986, 1991) has argued for understanding the two terms not as statements about the fundamental value or ontological status of nonhuman nature, but rather as more pragmatic expressions of conceptually distinct, but complementary (and often overlapping) management approaches. In other words, Norton claims that conservation and preservation do not refer so much to foundational moral positions and motivations (i.e., anthropocentrism and non-anthropocentrism, respectively) as they describe alternative sets of activities within a larger framework of environmental management. Conservation, Norton suggests, can be understood as referring to the prudent use of natural resources, with an eye to the maintenance of future availability and productivity. Preservation, on the other hand, denotes the protection of an ecosystem or resource base from resource production (Norton, 1986, p. 200). Thus translated as practical philosophies of environmental management rather than competing value positions in environmental ethics, conservation and preservation become simply alternative resource management regimes. They are models of management action that can be driven by a variety of underlying interests, from human consumptive and non-consumptive values (e.g., resource extraction, recreation) to non-anthropocentric claims (i.e., the intrinsic value of nature) (Norton, 1986, pp. 212–213).

While we know much about how environmental historians and philosophers have construed the meaning of conservation and preservation as moral constructs and/or as compact statements of alternative suites of environmental management methods and techniques, we know comparatively little about how these terms are understood outside of these particular communities, and outside of the walls of the academy more generally. In particular, we do not have a strong sense of how conservation and preservation are defined today by citizens, nor do we know how they are interpreted by those individuals whose work is perhaps most relevant to the shaping and application of conservation and preservation principles on the ground – i.e., environmental scientists.

Given the longstanding significance of these ideas for the shaping of environmental policy and management, we feel that a more detailed study of their currency and reception among citizens and environmental scientists is necessary. Accordingly, we decided to use the occasion of the development of a new USDA Forest Service management plan for the Chattahoochee National Forest in northern Georgia to conduct a detailed case study of how a key group of citizens and forest scientists define the concepts of

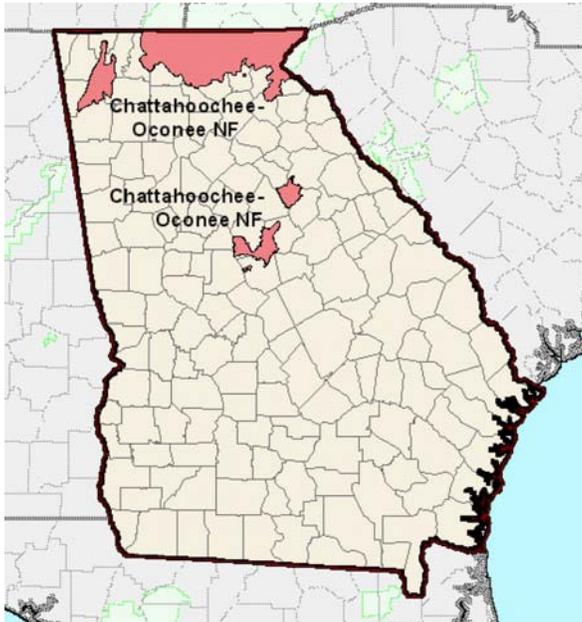


Figure 1. Map of Georgia and Chattahoochee – Oconee national forests in the state of Georgia, USA.

conservation and preservation today, and how those definitions shape their attitudes toward the management of this popular southeastern national forest.

Our study is, therefore, driven by several interlocking questions. Of these, the most important question concerns how the two terms – conservation and preservation – are characterized and understood by citizens and scientists, and how they are applied within a particular resource management context. Specifically, what underlying ideas or themes emerge in our respondents' discussion of these concepts? Do they, for example, describe conservation and preservation as entailing different moral orientations toward nature (i.e., as conveying anthropocentric or nonanthropocentric stances), or are these terms defined primarily as different types of management activities (as Norton might have it)? Do the various types of individuals we interviewed (citizens, academic scientists, agency scientists, etc.) think of conservation and preservation any differently? Finally, which approach – conservation, preservation, or a mixture of both – is viewed by the study respondents as a more appropriate management philosophy for Georgia's Chattahoochee National Forest, and why?

1. THE CASE STUDY

In this study, we hope to fill a gap in the literature in conservation studies and the philosophy of natural resource management by examining how the notions of conservation and preservation are viewed by citizens and scientists linked by interest, expertise, or employment to a specific unit of the US Public Land system: the Chattahoochee National Forest (CNF). The CNF currently spans 18 counties in North Georgia (see Figure 1).

The Chattahoochee and the Oconee National Forest (both located in Georgia) are administered by the USDA Forest Service (USFS), with both forests managed locally by the USFS Supervisor's office in Gainesville, Georgia. In Figure 1, both the Chattahoochee and the Oconee National Forests are shown.

The Chattahoochee is the northern-most shaded area on the map and the Oconee is the southern-most shaded area on the map. The smaller Oconee National Forest is made up of 115,000 acres of forest land located in the Piedmont hills of Middle Georgia. The CNF is one of the largest national forests in the East; its nearly 750,000 acres are spread across the rugged high peaks of North Georgia's mountains. Within the Chattahoochee and Oconee National Forests, there are ten federally designated wilderness areas amounting to 114,537 acres, or roughly 14% of the state's total national forest holdings (Seabrook, 2004).

The Chattooga River, one of the last free-flowing rivers in the Southeast, runs through the Chattahoochee National Forest. Designated a Wild and Scenic River by Congress in 1974, both it and the forest as a whole are popular recreation destinations for many north Georgia and metropolitan Atlanta residents (e.g., there are more than 1,000 camp and picnic sites on the Chattahoochee and Oconee National Forests). As of 2004, fifteen federally listed Threatened or Endangered Species were known to exist on the Chattahoochee and Oconee, including the Red-cockaded woodpecker and the gray bat (<http://www.fs.fed.us/conf/2004-fact-sheet.pdf>). Tree growth within the CNF is mostly an Appalachian-oak forest type, and the forest is the primary provider of quality hardwood timber in the state. Almost without exception, the federal and private forests of the Southeast are the results of multiple disturbances and land use changes, with almost every forested acre in the South having been harvested at least once in the last two centuries (Wear and Greis, 2002).

We chose the CNF as a case study for this research for two reasons. First, we believe that exploring the meaning of conservation and preservation in the context of a popular US National Forest is interesting, especially given the strong association of the national forests with the historical formulation and application of the American conservation idea (Hays, 1959;

Williams, 1989). The forests have long been an intellectual and geographic battleground of alternative environmental policies and management philosophies, and the conservation-preservation dispute has hovered over countless debates about the proper mix of uses on the national forests, including protracted fights over timber harvesting, grazing, wilderness protection, wildlife conservation, and recreation, among other issues (Clary, 1986; Hirt, 1994; Steen, 2004).

In addition to the strong historical association of the national forests with the conservation-preservation debate, we decided to focus on the CNF in particular because it received a considerable amount of media attention during the summer of 2001 – i.e., when the data for this project were being collected. During that time, the USFS was developing its next long-term management plan for the forest, and was, therefore, actively involved in engaging the public in discussions about different future management scenarios (including elements of commodity production and environmental protection) for the CNF. This high level of media coverage ensured that the management plan for the CNF was salient for scientists and citizens during the data collection period, and that practices and goals reflective of conservationist and preservationist views were on the minds of those we interviewed for this study.

As an eastern “urban forest,” the Chattahoochee lacks the sheer size and resource base that would attract the degree of controversy typical of earlier battles in the Pacific Northwest (or in western forests more generally). Despite this, the management of the national forests, whether in Washington or Vermont, California or Georgia, always seems to attract public attention, and often generates a degree of social conflict. In the CNF, contentious issues such as road building, the recreational use of All-Terrain Vehicles (ATVs), and the size and quantity of timber sales have and continue to divide forest stakeholders, resulting in various forms of public protest and legal challenges by conservation organizations (Seabrook, 2001, 2004). Even if they are not at the same scale of their western analogues, disputes over the management of eastern national forests like the Chattahoochee regularly inflame public opinion and consequently pose a real challenge for forest land managers and administrators before, during, and after the planning process.

2. DATA COLLECTION AND ANALYSIS

The primary method of data collection for this research consists of thirty in-depth interviews conducted with environmental scientists and citizens. Although there are limitations to qualitative data collection (such as small

sample sizes and lack of generalizable results), this research is focused on eliciting rich descriptions that cannot be fully captured by a quantitative study. Vining and Tyler (1999) and Tindall (2003) explain the limitations of using quantitative approaches to elicit public perceptions and environmental values. Other scholars within the related field of environmental risk have similarly embraced the use of in-depth interviews to compare the perceptions of scientists with non-scientists (e.g., Brown et al., 2002; McCormick et al., 2003; Zavestoski et al., 2002). We feel that our study's focus on actual citizen and scientist discourse about conservation and preservation strategies and goals allows us to delve more deeply into the semantic context of environmental management and the specific justifications stakeholders employ when describing their personal views of desirable forest policy and planning efforts (Elands and Wiersum, 2001).

The first set of interviews was conducted with fifteen designated scientists who had an educational background or experience with forestry and had worked on topics related to the CNF. Seven of the scientists were professors of either forestry or ecology at the University of Georgia (hereafter "university"). Each of the professors had completed research on the CNF. Of the eight non-university scientists, one was employed by a Georgia state agency that focuses on forestry issues. Four of the scientists were Forest Service employees who were involved in the development of the new management plan for the CNF. The remaining three scientists were employed by non-governmental, environmental organizations that were involved in conservation efforts in the region, including the CNF. The interviews with the scientists lasted between 30 and 90 minutes each – and all of the interviews were conducted in the participants' offices.

The purpose of selecting a variety of scientists was to bring together knowledge held by practitioners and scholars. It was expected that the scholars would be more likely to discuss their research in the forest and the implications of that research for future management in the forest. On the other hand, it was expected that forest planners would be more likely to discuss details of on-the-ground management in the forest, as well as how stakeholder values were typically included (or not) in the forest planning process. State level officials and scientists at environmental non-governmental organizations (NGOs) were also interviewed to gain another perspective that was linked more explicitly to the public.¹

The second set of interviews was conducted with fifteen citizens who live in the counties encompassing the CNF. The list of possible respondents for these interviews was obtained from the Forest Supervisor's Office. The list is

¹ The NGO-employed scientists all worked with the local community on management for the Chattahoochee National Forest.

a mailing directory compiled by the Forest Service that records contact information for over 4,000 citizens who are interested in receiving updated information about the forest. Citizens voluntarily add their name, address, and phone number to the list when they visit the CNF. Since all fifteen of the citizen interviewees were identified from the Forest Service mailing list, they were somewhat aware of the current management situation of the forest. Several citizens had been placed on the mailing list many years earlier, however, and they indicated that they no longer kept up with forest issues and events.

Therefore, three criteria were used to choose citizen interviewees from the mailing list. First, the citizens had to have a working telephone number that was reported on the mailing list. This requirement was important for arranging an interview with citizen participants. The second criterion was that the citizen participants had to live in one of the eighteen Georgia counties that contain the CNF for the previous five years. The rationale behind this requirement was that citizens living in those counties would be exposed to media information about the forest through local television and newspapers and, therefore, would be more knowledgeable about the current changes taking place in the forest. The citizens were chosen randomly from the list if they met the second requirement of living in a county that encompasses the CNF.

The third criterion was that respondents had to have lived in their current county for more than five years. After the potential participants were contacted via telephone, they were asked how long they had lived in their current county. If they had lived in the county less than five years, then a face-to-face interview was not scheduled. Out of all the citizens who were contacted via telephone and met both of the above criteria, only one refused to meet for a face-to-face interview (for a response rate of almost 94 percent). This high response rate is most likely due to the fact that we spoke with each person on the telephone to schedule the interview and describe the purpose of the study to them before they committed to the face-to-face meeting. Citizen interview times ranged from 30 to 75 minutes. The citizen interviews were conducted at the participant's home or at a public location (such as the local public library for two interviews).

The actual interview questions that were included in the interview protocol were prepared based on guidelines from Sudman and Bradburn (1982), Weiss (1994), Marshall and Rossman (1995), Berg (1998), Flick (1998), Seidman (1998), and Morgan et al. (2002). After the interview protocols were developed, they were read and edited by an expert panel. The expert panel consisted of four social science professors with many years of experience in the development of interview protocols for eliciting values from

citizens and scientists. The edits suggested by these experts were then included in the final version of the interview protocols.

The interviews with both the citizens and experts were semi-structured. Respondents were asked a range of prepared questions pertaining to the management of the Chattahoochee National Forest, including their views of logging and other forest land uses (these results are reported in (Corley, 2004)). With respect to the data presented in this paper, our study participants were asked to define the terms “conservation” and “preservation,” and to discuss which concept they felt was more appropriate for the future management of the Chattahoochee National Forest. After completing the interviews with the citizen and scientists, we transcribed the full interviews into manuscripts. All thirty interviews yielded 317 single-spaced pages of typed manuscripts.

3. STUDY FINDINGS

Before presenting the full findings of our study, we will present some demographic information about the participants. At the conclusion of each interview, we asked the respondents to fill out a brief questionnaire that included some basic demographic questions. The results presented in Tables 1 and 2 summarize the information that was included in the brief questionnaire.

Table 1 provides a summary of the characteristics of the citizen and scientist respondents, including their preferences for outdoor recreational activities. We also asked the citizen respondents to define the role they “played” in relation to the Chattahoochee National Forest. There were seven possible options for citizen roles within the forest: environmentalist, recreation enthusiast, interested citizen, land owner near forest, logger, forest manager, and expert/scientist. One of the reasons we included this question was to determine if any of the citizens considered themselves to also be experts on the forest. As the results in Table 2 demonstrate, none of

Table 1. Demographic info for citizens and experts

| | Experts ($N = 15$) | Citizens ($N = 15$) |
|----------------------------------|----------------------|-----------------------|
| Number of males | 11 | 7 |
| Number of females | 4 | 8 |
| Mean age | 45.1 | 60.3 |
| Number republican | 3 | 2 |
| Number democrat | 6 | 4 |
| Number independent | 4 | 7 |
| Number green party/other/missing | 2 | 2 |

Table 2. Citizen roles in the Chattahoochee national forest^a

| Roles in forest | Citizen response ($N = 15$) |
|------------------------|-------------------------------|
| Environmentalist | 4 |
| Recreation enthusiast | 2 |
| Interested citizen | 4 |
| Land owner near forest | 4 |
| Logger | 0 |
| Forest manager | 0 |
| Expert/scientist | 0 |
| No response | 1 |

^a Citizens were asked “Which of the following best describes your role in relation to the Chattahoochee National Forest?” All categories listed were options for available for response, but respondents were required to give only one answer.

the citizens that participated in the study considered themselves to be scientists or experts when thinking about the national forest.

During the in-depth interviews, we asked the study participants a series of questions designed to elicit their understanding of and support for conservation and preservation as management concepts. We used qualitative content analysis to elicit specific recurring themes from the interviews regarding the concepts of conservation and preservation. In the next section, we present findings related to the respondents’ views of conservation. Finally, we will summarize how the interviewees responded to questions about the appropriateness of conservation or preservation as a management philosophy for the CNF.

3.1. *Defining Conservation*

Three broad and recurring themes emerged in the interviewees’ discussion of the meaning of conservation (Table 3). First, many of our respondents discussed conservation within the context of “hands-on” or active management. Second, many of those we talked to also believed that conservation

Table 3. Summary of main themes in citizens’ and scientists’ understanding of conservation and preservation

| Conservation is | Preservation is: |
|---------------------------------|------------------------------------|
| Active management | “Hands off” approach/no management |
| Wise/sustainable use | No use/passive use |
| Maintenance of ecosystem health | Prevention of environmental change |

directly implied “wise” or sustainable use. Third, a smaller number of respondents stated that conservation was the activity of maintaining ecosystem health. We will now explore in detail how these themes appeared in the interviews – and consider the significance of these three themes for conservation practice.

3.1.1. *Conservation as Active Management*

One of the most common responses to appear in the interviewees’ definitions of conservation was the idea that conservation involved the active management and manipulation of the natural environment. Nearly one-third of the respondents (including both scientists and citizens) mentioned the idea of active or “hands-on” management in their answers. The following remark by one scientist who worked for a non-governmental environmental organization is representative:

Conservation may imply that you can still actively manage something and still maintain that system or area in a fairly natural state. Conservation implies more of an active role, rather than a passive role.

The Forest Service scientists we spoke with argued the most forcefully for the view of conservation as active management. This is probably not all that surprising, especially given their professional responsibilities for the planning and management of the Chattahoochee National Forest. In our study, the Forest Service scientists argued that active management was an absolutely essential component of conservation if the forest was to be maintained in a desirable condition. As one Forest Service scientist put it, conservation is working within the forest. It’s creating habitats to achieve viability of various species and it runs the gamut. You know you have to fiddle around out in the forest. You have to manage the forest - be it trees, people, or animals. You’ve got to manage it.

The necessity of management, including activities such as prescribed burning, was underscored by others as well. In particular, a second Forest Service scientist argued that:

Conservationists would say it’s important to me to maintain what little bit of long leaf pine we have on the Armuchee Ranger District [located in Lafayette, GA], it’s unique and I think we should maintain it, therefore I’m going to do some management to keep it. Because if I don’t do any management it’s going to go away. If I don’t go in and burn that area, it’s going to go away. So the conservationists would say, we want to conserve a certain ideal and I’m going to do it, and if it requires management, I’m going to do that.

Another Forest Service scientist made a direct link between conservation and timber production. He argued that conservation’s strong management

orientation went hand-in-hand with a timber program, which was in turn part of a comprehensive resource management approach for the CNF:

We realize we've got to go in and cut timber to a degree. I don't mean cut it all down. But try to provide some kind of harvest program. Same thing with recreation. We need to look and assess and possibly build new trails, stuff like that. Recreation, develop new recreation areas. Wildlife, create wildlife openings. As I've alluded to, again, to do vegetative work in timber sales that are conducive to wildlife. Look at the whole perspective of things. And trying to manage conservatively the natural resource base.

While the strong emphasis on the management dimension of conservation among the USFS personnel was the most pronounced among all the respondents, other interviewees made a similarly clear connection between conservation and hands-on or active management. Several of the citizens we interviewed, for example, explicitly defined conservation in terms of the active management of natural resources. Responses in this vein included "conservation means that you manage a resource," and conservation implies "sound management practices."

3.1.2. *Conservation as Wise/Sustainable Use*

Many of the study participants ($n = 13$; nearly equally divided between scientists and citizens) evoked one or more variations on the maxim of "wise use" in their definitions of conservation, one of the classic summary statements of conservation in the environmental literature (see, e.g., Nash, 2001). Responses along these lines included several variants of the wise use expression, including (most directly) "conservation is wise use" (university scientist) and "conservation is when you use it wisely," (citizen) as well as the negatively phrased, "conservation is also protecting an area against unwise uses" (citizen).

Several respondents who articulated the use-oriented understanding of conservation explicitly mentioned its commercial aspects, most notably the production of timber and wood products. A scientist working for a Georgia state environmental agency, for example, told us that conservation means that "you'll always have that source of lumber if you need it." Likewise, a scientist for a non-governmental environmental organization stated that conservation was the following:

More of a pragmatic term, it's realistic. It really speaks to the need to protect a resource, but taking into account the realities of, you know, needing wood products, needing other products out there.

In addition to the characterization of conservation as wise use, several study respondents viewed conservation as entailing an explicit prospective outlook, one that incorporated the ideal of resource sustainability and the

notion of saving for the future. For example, one university scientist argued that:

Conservation...has sort of been the utilitarian perspective, I think, though with an appreciation for sustainability in the sense that anything you take out of the national forest; you should make provision for it to go back. You know, and now those terms [conservation and preservation] have kind of been, you know, squished around a little bit. You know groups that have had a strong utilitarian aspect now kind of identify themselves as conservationists.

For this respondent, conservation is associated with a “utilitarian” stance, making this remark one of the few responses that employed recognizable philosophical terms in describing conservation and preservation. Still, the context of this statement makes it clear that “utilitarian” is understood here simply as a synonym for “use” (or perhaps material use), rather than as a technical philosophical doctrine. In other words, the definition of conservation offered above remains at the level of activity (management for resource sustainability) rather than on any particular moral principle about the value of nature or the deeper philosophical dimensions of human-nature interactions.

This description of conservation as referring to the sustainable use of natural resources was fairly widespread among the study participants. One Forest Service scientist, for example, told us that conservation implied “making sure that the resources are sustainable, but that they can be used also.” Likewise, a university scientist replied that conservation meant “developing sustainable, multi-use ways of dealing with our natural resources.” Several citizens, too, defined conservation in terms of sustainable resource production, with two different respondents telling us: “conservation is being careful not to overuse,” and “I would think of conservation as being very careful not to use up what we have.” Such views capture the classic idea of conservation as management for sustained yield, focusing as they do on the perpetuation of resource availability and productivity over time.

3.1.3. *Conservation as the Maintenance of Ecosystem Health*

A final theme in the responses to our conservation question was the association of conservation with the maintenance of environmental health. Two of the individuals interviewed (both university scientists) made this link in their responses. “Conservation as I said is utilizing a resource, but at the same time maintaining it in a healthy state,” remarked one scientist. The other respondent evoked the concept of health in his definition of conservation, making this statement:

I think people have made a lot of it, about the distinction [between conservation and preservation]. I think it's pretty arbitrary. I think people are still using the terms very,

very differently... conservation is much more oriented towards simply being able to maintain a healthy condition. And that healthy condition may or may not be the condition that Europeans found when they came here five centuries ago. But still the terms, I think, overlap very broadly.

While neither respondent defined what exactly they meant by “health” in this context, it is clear that they are using the term to convey something more than a non-declining level of resource productivity. Indeed, for one of these respondents, the maintenance of environmental health within a use-oriented conservation approach could even include an effort to maintain “natural” environmental conditions – what many would consider to be the hallmark of the preservationist model. The mention of “health” by these respondents is, therefore, strongly suggestive of the notion of “ecosystem health,” in which resource production is viewed in the context of and constrained by a concern for maintaining the creativity, complexity, and resilience of ecological systems (e.g., Costanza et al., 1992; Rapport et al., 1998).

3.2. *Defining Preservation*

Our analysis of the respondents’ discussion of the meaning of preservation also produced three broad and interlocking themes. First, many of those interviewed described preservation as keeping all “hands off” of nature (especially, in this context, the national forests). Second, some interviewees explained that they believed preservation was saving nature for no use (or passive use only). Third, many of the respondents told us that preservation was an attempt to prevent or arrest environmental change. As with the conservation case, we will explore each of these themes of preservation individually – and include references to the interview data where appropriate.

3.2.1. *Preservation as “Hands Off” Management*

One of the most common themes to emerge in respondents’ definitions of preservation was the impression that it suggested little or no human management and/or manipulation of the land and its resources. This view was expressed by more than one third of our respondents, and was articulated by both citizens and environmental scientists in the study. Responses conveying this “laissez-faire” understanding of preservation included statements like: “Preservation means that you don’t do anything with it. You don’t let anybody touch it (citizen); “I think sometimes lock up and get out policy is good. Preservation to me means locked up” (citizen); and “Preservation is put a fence around it” (university scientist).

Some respondents, presumably thinking specifically of the management of the CNF, told us that preservation meant the prohibition of timber extraction. As one Forest Service scientist stated,

Preservation is wanting to leave everything alone. Don't touch it. Let nature take its course 100 percent... It's taking no management in an area of timber, whereas with conservation, you are going in and cutting it.

One of the environmental scientists we interviewed, an ecologist for a non-governmental organization, noted what he saw as a fundamental contradiction in the rhetoric of preservation in his organization's charge:

Preservation to me sounds more like hands-off. But it's kind of interesting, in our mission, we say preserve these areas and we are really conserving them, rather than preserving them. Because we are very activist when it comes to the management we advocate. It bothers me sometimes, the strictures on managing of the wilderness areas in the National Forests because they can't use prescribed fire or only in certain real strict fuel reduction situations.

For this respondent, the "hands off" definition of preservation is misguided because wilderness management (which he equates with preservation) requires active management techniques, such as prescribed burning. This suggests the existence of a tension, if not a contradiction, present within some definitions of preservation that seek to preclude human management of nature while at the same time they attempt to promote certain environmental conditions – such as wilderness – that require active management to achieve and maintain in a desired "preservationist" state.

3.2.2. *Preservation as No Use or Passive Use*

A second recurring theme in the responses to the preservation question is the idea that preservation means no use or passive use, but not the absence of management or the denial of human presence. For example, one university scientist argued that "preservation is essentially no use. Or no impact use I guess." One of the citizen respondents agreed, saying that "preservation you don't use it except for passive activity, like hiking." Another citizen described preservation in terms of management for wilderness qualities, especially aesthetic ones:

I really think that we should keep a certain place as a wilderness area... I do not think that you should cut as much timber in those areas, use selective cutting. And use a natural hike to go up and see these unusual tress. Preservation is not logging in some areas.

These responses capture the notion of preservation as management for low impact activities (e.g., non-motorized recreation) and distinct aesthetic values, a goal that precludes – or at least severely restricts – resource

extraction (i.e., large-scale timber harvesting, mining, etc.). Such views do not entail the absence of management, but rather a management regime geared toward the promotion of recreation and wilderness experiences.

3.2.3. *Preservation as the Prevention of Environmental Change*

A final theme in the interviewees' responses to the preservation question was the notion of arresting environmental change, or keeping nature in a "steady state." More than one third of the respondents (including both scientists and citizens) stated that preservation meant no environmental change; a static view of natural systems, that, from the perspective of many of the scientists in our study, failed to acknowledge or accommodate the unpredictability and dynamism of evolutionary and ecological processes:

Preservation is taking a snapshot in time and walking away from it and thinking that when you return 15 years from now everything's going to be picture perfect again. Just as you took the picture... never return in 15 years. That's what so many people think it actually is. (USFS scientist)

Clearly, many of the individuals we interviewed for this study did not think such an ecologically "frozen" image was either realistic or desirable as a standard for environmental management. The following response by a university scientist we spoke to is characteristic of this view:

Preservation, I mean, in its strictest sense is seeking the status quo. And preservation is really a fallacy because if there is one thing we've come to understand in ecology over the last 20 years in particular is that change is the norm and stability is abnormal. And so, preservation, is really sort of an unreasonable goal.

For those who found the attempt to prevent ecological change within the preservation idea unacceptable, conservation offered a much more attractive approach to environmental management. One of our citizen respondents stated it rather bluntly:

I'm not into preservation which is keep things as they were... well, you are not going to. They are not going to stay the same. One of the basic principles of ecology is change. Even if you leave something alone, it is going to change. But conservation is a little more reasonable. That way you look at how nature would naturally handle itself and give it a chance to do so.

Conservation is here seen as "more reasonable" in that it accepts the forces of ecological change rather than attempts to deny them though the appeal to a misguided preservationist management philosophy.

It is interesting to note that nearly all of those respondents who characterized preservation as advancing an unacceptable static view of nature were scientists – either university or Forest Service employees, or those working for an environmental organization. And, as we will see below, the

only respondents to express support for a pure preservationist approach to managing the CNF were citizens.

3.3. *Conservation or Preservation for the Chattahoochee National Forest?*

In the previous sections, we examined how our study respondents defined the concepts of preservation and conservation in general. In this section, we explore a more contextual definition of the terms. In particular, to determine how the study respondents conceived of conservation and preservation in a real and familiar context, we asked them whether they thought one or the other approach would be more appropriate for the management of the Chattahoochee National Forest. Of the 28 respondents who replied to this question (two of the participants chose not to answer), 12 indicated that conservation would be the best strategy of managing the forest (eight scientists, four citizens), while an equal number (six scientists, six citizens) stated that the forest should reflect a mixture of conservation and preservation activities. Only four respondents (all citizens) felt that the CNF should be preserved rather than conserved or managed under a hybrid conservation-preservation model. We will explore each of these response themes individually, and in more detail.

3.3.1. *Conservation Only*

Many of the study participants who felt that the Chattahoochee should be managed along conservationist lines suggested again that preservation was simply not practical or possible. The pressure for use (especially recreational) of the forest and its proximity to a large metropolitan area (Atlanta) made a strong preservationist approach unrealistic for many respondents, particularly the following university scientist:

Well, the Chattahoochee is so close now to Atlanta, its biggest benefit is going to be recreation areas for people in Atlanta. So, I don't think it makes too much sense to preserve it in the sense that nobody's allowed in or that there is no access whatsoever.

In what began to seem like a refrain, some of those we talked with felt that conservation was more appropriate as a management philosophy because it could accommodate the concept of ecological change, whereas preservation again was seen as entailing a naive ideal of an environment frozen in time. The following quote from another university scientist provides further support for this view:

I think conservation is probably going to be a better option [for the CNF]. I don't think we can build museums which is what I think preservation is saying. And people that are trying to build museums, they are going to be disappointed when Mother Nature hits and changes the way things are.

Conservation, in sum, was seen by these respondents as the only viable option for managing the CNF because only it, in their opinion, recognized the necessity of human use of the forest (whether this be for recreation or timber production), and only conservation acknowledged the reality of ecological change. Preservation is clearly viewed by these respondents as either restricting all uses of the forest (including even passive uses like recreation) or as maintaining nature in an unacceptable static or “museum”-like condition.

Another set of responses in favor of a conservation strategy for the CNF justified this approach by suggesting that it, and not preservation, permitted for the management of multiple uses, including timber, recreation, wildlife, and watershed protection. Along these lines, one interviewee, a university scientist, stressed how a broad conservation strategy for the forest contributed to overall human well-being, one of the few responses we encountered that presented a deeper philosophical rationale for either conservation or preservation:

Well, I would like to see forests managed for conservation purposes. This is a preference I have as a citizen I would say, rather than as an expert. But I think it reflects my growing up...[my family] had a small farm so I think about the soil and the landscape as something that we can use to improve our human condition. I think of forests in the same light when I studied forestry in the 1960s that was the dominant thinking about forests. Also, forests are extremely valuable at least, you know, when you think of them in the aggregate. And I would like to see these forests contribute in significant ways to developing society. And I think that that's more possible, the contribution is larger, under a conservation philosophy than it is under a preservation philosophy and I don't see change in the forest as being damaging or destructive or harmful to the forest long term. So I don't see the need for large amounts of preservation.

Others who were supportive of a conservation-only management approach for the CNF argued that preservation was unacceptable because of its aforementioned “hands off” connotations; i.e., it precluded management altogether. “If you want to draw a sharp distinction between what preservation means and conservation means,” said one university scientist, “I don't think you can manage for preservation, but you can manage for conservation.”

This sentiment was echoed by other respondents, including one of the Forest Service scientists, who felt that without the management efforts encouraged by a conservationist philosophy – especially the harvesting of timber (here described as a tool for maintaining a healthy forest ecosystem) – wildlife and species diversity would be negatively impacted.

I would go with conservation [for the CNF] because conservation allows us to manage for our forests better...It manages for the species diversity. It provides,

again, for the wildlife enhancement. It goes back to maintaining forest health. If we don't have some kind of viable method of [timber] cut, I look at it like our forests are becoming stagnant and all. They need to be harvested for just natural reproduction of the species...the trees are rotting on the stumps. It's a shame for you to see.

3.3.2. *Preservation Only*

Only four of the 28 answers to preservation-oriented questions indicated that a preservation-only philosophy was the best approach to take in the CNF. All of these responses were given by the citizens. One of them, a retired teacher and former employee of the National Park Service, believed that the preservationist approach typically identified with the Park Service was more appropriate for the CNF because it suggested less of a commercial attitude toward the forest:

The Park Service was much easier to deal with and [was] interested in recreational value and enacting some of the policies. I'm not even schooled in multiple use concepts; I think there are some things that are diametrically opposed there. I'm afraid of the business aspects of forestry and of the USFS. I'd rather see, particularly in this area, that the USFS adopt more of a park policy.

For this respondent, a preservationist strategy was more appealing for the CNF because it suggests an alternative to the traditional "multiple use" approach to national forest management, an approach associated here with a "dominant use" strategy of commodity production (e.g., timber) rather than with the provision of non-commodity benefits, such as the recreation and aesthetic experiences. Although the CNF is an urban forest, preservation is nevertheless seen by this respondent as an appropriate management philosophy for the forest. It is, moreover, closely linked to their understanding of the goals of national park management, defined in this case by an emphasis on recreation rather than on commodity production (i.e., "business aspects").

3.3.3. *Conservation and Preservation Combined*

Many of the 12 respondents who indicated that a combination of conservation and preservation should be practiced on the CNF told us that a balance of sustainable resource use and protection should be struck within the forest. One respondent, for example, believed that conservation activities (including resource production) should be permitted within the CNF, with other areas set aside under a program of minimal management activity. This argument appears in the following quote by a scientist working for a non-governmental environmental organization:

I think there are parts of the National Forest that need to be preserved, where people say, look, we are going to be very minimally involved in this area. This is an area

which needs to grow. Although I don't think you should exclude from that area then active forms of maintaining natural processes like burning. I think prescribed fire has to be part of the preserving of some of these areas... I think there are a lot of areas that are very heavily degraded and a lot of those areas are slated for restoration activities. Which includes harvesting and replanting and management such as burning and, you know, closing some roads that we don't want to maintain.

Although such preservation zones were to be less intensively managed than other parts of the forest (i.e., resource conservation ones), this respondent supported the practice of those management activities – such as prescribed burning – that he believed would help degraded areas of the forest recover from previous insults. Here, preservation is understood to allow some activities – e.g., hands-on restoration and timber harvesting – that might typically be associated with conservation; suggesting, perhaps, the dominance of the conservation idea in the conservation-preservation hybrid. A similar sort of view was expressed by one of the citizen respondents:

I would like to see some preservation areas. Some conservation. Some of it needs to be where it's already been abused and gotten new growth growing on it and it is commercial type land, it should be alright. But if you have some virgin areas that have never been touched, I think that other generations should see it.

Another citizen respondent who also supported both conservation and preservation for the CNF stated that that the balance reflected her own aesthetic preferences and material interests in the natural environment, telling us that:

On a personal level, I really enjoy being out in the forest, especially wild areas, so I think we need those areas, but I also like to use wood. I like paper, I like having the product, so I know we need that as well. So I think a little of both [conservation and preservation].

4. DISCUSSION AND CONCLUSION

We are now in a position to summarize our findings and draw some larger conclusions from our study results. First, we found in this study that many citizens' and scientists' associate the idea of conservation with an active, "hands-on" management approach, one that promotes the prudent and sustainable use of forest resources while also accommodating a dynamic understanding of ecological change. Preservation, on the other hand, is either seen as entailing a "hands-off" management philosophy in which nature is essentially left to its own devices, or as suggesting a constrained model of management that would allow for passive use only (such as low-impact recreation). Finally, several respondents indicated that preservation implied the prevention of ecological change, a notion that was deemed to be

unscientific and impractical by almost all of the forest scientists who participated in the study.

Even so, while a good many of the respondents (i.e., 12 of 30) thought that a conservation-only approach was the best option for the management of the CNF because of its strong management emphasis, an equal number of those interviewed felt that a mix of conservation and preservation models would be ideal for the forest. The more pragmatic orientation of the conservation approach apparently mitigates, at least to some degree, many of the respondents' expressed resistance to a pure preservationist strategy. That is, preservation is seen as more acceptable when subsumed under a wider "pro-management" philosophy. For the small handful of respondents (4) who indicated that a preservation-only approach was more appropriate for the management of the CNF, the motivation appears to have been to see a focus more on non-commodity uses of the forest, especially recreation, rather than a pure protectionist model that excluded human access and non-consumptive use of the land.

Similarly, in the mixed conservation-preservation responses, preservation does not appear to imply a hands-off position toward the management of nature; rather, it is construed as management for passive uses or aesthetic values rather than as a strict anti-management posture. The upshot is that while most of the respondents see preservation as impractical or unscientific as a universal model of environmental management (due to its association with a static view of nature), when placed alongside conservation's strong management sensibility and recognition of ecological dynamism, it apparently becomes much more tolerable – and is perhaps even viewed as necessary to offset the intensive managerial ethos embedded within conservation.

In addition, it is clear from our discussions with the interviewees that conservation and preservation are both understood as describing practical management activities, rather than deeper moral and philosophical motivations. This comports generally with Norton's (1986, 1991) attempt to decouple conservation and preservation from the anthropocentric and nonanthropocentric framework. Viewed by our interviewees primarily as alternative approaches toward the practice of environmental management, conservation and preservation appear to represent for these stakeholders complex management paradigms that may be justified by a suite of moral principles and arguments, running the philosophical gamut from the promotion of human material interests to the intrinsic value of nature. Our findings, therefore, have implications for those discussions of conservation and preservation in environmental ethics circles that treat these concepts as if they implied monolithic and mutually exclusive philosophical categories. Although some philosophers and historians may view them in such absolute

terms, the scientists and citizens interviewed for this study appear to treat the concepts more pragmatically – i.e., as conceptually different but frequently compatible approaches to resource and environmental management.

It is indeed interesting to note the ways in which our study respondents' particular readings of these concepts depart from those of many environmental ethicists. For example, the forest scientists' largely negative views of preservation in this study do not correspond very directly with the approving use of preservationist discourse by environmental ethicists. Whereas the scientists and citizens interviewed in this study were clearly very apprehensive about preservation as a management ideal and generally suspicious of its scientific merit (especially the forest experts), many environmental ethicists, especially those of a nonanthropocentric persuasion, feel that a preservationist model is entirely valid and offers the best means for wild species and ecosystems to operate freely, protected from human domination (e.g., Rolston, 1994; Katz, 1997). While ours is but one study of stakeholder discourse in this area, it does suggest a possible disconnect between some of the rhetoric (if not the goals) of certain approaches in environmental ethics and those of forest scientists and citizens that we believe merits further study and reflection.²

Although the Forest Service scientists expressed the strongest support for conservation-as-management – and the only support for an unadulterated preservationist approach to managing the CNF came from a small number of citizen respondents – we believe that there is, in fact, a remarkably strong consensus among our study participants surrounding the general meaning of the two terms and their suitability as management ideals. Conservation was widely seen to be a more attractive model for the management of nature in general (and within the CNF in particular) than preservation. Moreover, the combined conservation-preservation responses appeared to constrain some of the demands of the pure preservation idea (especially its *laissez-faire* connotations) while keeping most, if not all of the managerial commitments of the conservation outlook in place.

The respondents were, then, mostly united in their support for the active management of nature, even under the mixed conservation-preservation scenarios. Some respondents simply expressed a more serious concern for the protection of non-commodity values (e.g., aesthetics, recreation) within the larger conservation management approach. This finding comports with other social scientific research conducted over the past dozen years measuring, in various ways, the public shift toward less consumptive

² We thank an anonymous reader of an earlier version of this paper for emphasizing this comparison.

environmental and forest attitudes anchored in a range of aesthetic, recreational, and moral commitments (e.g., Steel et al., 1994; Kempton et al., 1996; Manning et al., 1999; Bengston et al., 2004).

One theme that may be said to divide the respondents, however, was the association of preservation with the idea of a static environment, or the prevention of ecological change. This notion appeared with much greater frequency in the scientists' discussion of preservation and its inadequacy as a management philosophy for the CNF. Given the technical scientific foundations upon which such a view rests (i.e., non-equilibrium models in ecological science; see Botkin, 1992; Pickett and Osfeld, 1995; Wu and Loucks, 1995), this difference is probably not that difficult to explain. Still, we think it is notable that the term conservation has been viewed as fluid enough to accommodate a more dynamic understanding of ecological systems, while preservation, its historical counterpart, was seen largely as a hindrance to the informed management of a perpetually changing forest landscape.

This reading of conservation as accepting of ecological change, and preservation as orthogonal, if not hostile, to the new dynamism in ecology, is nowhere more visible than in current discussions of conservation and preservation in the field of conservation biology. Consider the following remarks, taken from one of the field's leading textbooks:

By definition, evolution is dynamic, and change is expected. Ecological systems are dynamic, and generally are not at equilibrium...The best way to "manage" such dynamic, changing systems is to permit and allow for change – a *conservationist* rather than a *preservationist* approach. Simply maintaining the status quo is inappropriate to long-term conservation at any level...(Meffe and Carroll, 1997, p. 179; emphasis in original).

Only conservation, it seems, is viewed within the scientific community as being able to accept ecological change (a conclusion seconded by many of those we spoke with in this study). Preservation is implicated with the (scientifically unacceptable) notion of "maintaining the status quo," which as we can see is not accommodated within the mainstream conservation science mission. The conservation idea, in other words, has been overhauled and retooled by many conservation biologists, who understand the "conservation" moniker of their science not as a synonym for active management (though this still may be supported in many cases), nor as an expression of utilitarian notions of wise use, but rather as an imperative to learn about, appreciate, and ultimately protect the earth's biological diversity from the forces of extinction, efforts motivated by a variety of reasons (Takacs, 1996; Wilson, 2002).

The conservation concept has clearly absorbed many of the less scientifically objectionable dimensions of preservationism in its reincarnation as a

normative goal in biodiversity studies. Many conservation biologists, especially those scientists working internationally in highly biodiverse and threatened ecosystems (e.g., in tropical forests), have pitted the rhetoric and objectives of “conservation” against the increasingly dominant “sustainable use” model endorsed by much of the development community (and not a few nature conservationists). Indeed, for conservation scientists and advocates like Robinson (1993), Oates (1999), and Terborgh (1999), “conservation” stands first and foremost for the protection of biological diversity, an objective that is often most fully achieved through a parks-and-protected-areas approach. In this new context, conservation has been effectively decoupled from its traditional (US) association with utilitarian principles directing the wise and efficient use of natural resources. It has taken on some of the semantic and moral shadings of a preservationist ideal in the focus on the safeguarding of species and environmental systems against human encroachment and use – “sustainable” or not.

Finally, while we believe our results are revealing and that they provide a deeper understanding of the meaning and import of the ideas of conservation and preservation in a real forest management context, there are limitations to our study. One standard caveat, of course, concerns the degree to which our study is geographically bounded. Our respondents’ remarks are not necessarily generalizable across all citizens and environmental scientists in the U.S, let alone in international contexts. Still, we believe their responses are representative of these groups, and that they have articulated a set of powerful themes within the conservation and preservation concepts that are widely held among the resource management and conservation advocacy communities in the United States, as well as by the public as a whole. Future research along these lines exploring the meaning of conservation and preservation among a national sample of forest scientists, managers, conservation biologists, environmental advocates, and the general public could shine further analytical light on these concepts, as well as their perceived appropriateness and viability as management philosophies, across a range of applications.

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