

THE NEW NORTHWEST?: REGIONAL PERSPECTIVES OF NATIONAL FOREST
MANAGEMENT BY RECREATION TYPE, PLACE OF RESIDENCE,
AND TIME SPENT IN THE PACIFIC NORTHWEST

by

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This study used a survey to examine how differences in recreation type (whether “appreciative” or “intensive” users of the forest), place of residence (big city, small city, town, or rural), and time spent in the Pacific Northwest were associated with attitudes toward the management of national forests. Also, the public trust of the US Forest Service to make decisions affecting public lands was explored, with an examination of support for potential alternative forest management agencies. Results showed “appreciative” recreationists more likely to support ecocentric (biocentric) forest management approaches than “intensive” recreationists. Weaker differences were shown for reported places of residence, but suggested a slightly more ecocentric urban population. Time spent in the Pacific Northwest showed the greatest differences, with newcomers showing the strongest support for an ecocentric approach to managing

national forests. Very low trust for the Forest Service was displayed. Implications for policy are discussed.

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CHAPTER I

INTRODUCTION

Forest management policy over the past few decades has been marked by great controversy and debate, which has been influenced by a variety of stakeholder perspectives on the purpose of national forests in the USA. Since 1960, with the passing of the Multiple-Use Sustained Yield Act (MUSYA), and later with the National Forest Management Act (NFMA 1976), national forests have been managed for a variety of “uses” including timber, minerals, recreation, watersheds, fish and wildlife. With these uses come conflicting demands placed on the forests by a variety of special interests, creating a very complex political situation. A simplified explanation would show the timber industry having concerns regarding timber extraction, recreationists desiring scenic views and other amenities, and preservationists desiring the protection of ecosystems from harvests or development. The reality is much more complex. The range of perspectives on how the Forest Service should manage national forest land has been studied and presented in a context of polar extremes (FEMAT 1993, Schindler et al. 1993), which have been simplified and reduced in the popular media (Brunson et al. 1997): commodity versus amenity, jobs vs. owls, ecology vs. economy, production vs. preservation, etc. On one end are production-oriented people who believe that forests are resources to be managed for human use; while on the other end are preservation-oriented

people who believe forests possess intrinsic value, and the human role involves preserving, restoring, and maintaining forests for this value. Between these poles lie a range of perspectives.

The difference in preferences for managing forests are said to be deeply rooted in values (Steel et al. 1994, Manning 1996), and have been changing in fundamental ways in the recent past (Bengston 1994, Steel and Lovrich 1997). Eight categories of social values related to forest management were described by the Forest Ecosystem Management Assessment Team (1993, VII-34): (1) commodity values (timber, range, minerals), (2) amenity values (scenery, wildlife, nature), (3) environmental quality values (air and water quality), (4) ecological values (habitat conservation, biodiversity, sustainability), (5) public-use values (subsistence, recreation, tourism), (6) spiritual values (sacred places), (7) health values (medicines), and (8) security values (sense of social continuity and heritage). Values have been categorized by Manning et al. (1999) to include (1) therapeutic values, (2) moral/ethical values, (3) historic/cultural values, (4) aesthetic values, (5) ecological values, (6) recreational values, (7) educational values, (8) scientific values, (9) intellectual values, (10) spiritual values, and (11) economic values. These values are informed by a variety of experiences (Kearney et al. 1999), and combine to help form each person's forest management perspective (Clark et al. 1999). As information has been exchanged, widely-shared social values have evolved and replaced formerly held beliefs (Inglehart 1977, Bengston 1994).

Environmental attitudes of certain sectors of the American public have moved beyond "anthropocentric" (human-centered), utilitarian interests, and take a more

“ecocentric” perspective regarding managing forests (Devall and Sessions 1985, Drengson and Inoue 1995). While there are many variations of an “ecocentric” perspective, they share a belief that non-human elements of nature are the priority¹. It has been suggested that the rights of the natural world are increasingly considered, respected, and gaining ground on the current state of human domination over nature (Nash 1989). This coincides with a shift in viewpoints for how public lands should be managed in the West (Steel and Lovrich 1997).

Many social changes may be contributing to the shift in attitude, and the literature is extensive regarding possible influences (Brown and Harris 1992a, Steel and Lovrich 1997, Hays 1998). The development of an increasingly urban population, migrations from urban to rural areas, changes in economic structure, and advances in technology are all suggested to be influences on the attitude shift (Steel and Lovrich 1997). Urban migrants may be bringing different values and views of the purposes of forests into rural areas (Price and Clay 1980, Shannon 1988). Other researchers have found little support for differences in forest management attitudes based on residential status (Fortmann and Kusel 1990). It’s been suggested that media influences have shaped environmental attitudes across all residence types, but new voices were brought to rural areas with the urban-to-rural migration (Fortmann and Kusel 1990).

Environmental awareness and concern increased significantly in the late 1960’s, as a result of perceived new problems and socioeconomic changes (Dunlap 1992). Policies regarding timber harvesting practices such as clearcutting were being attacked as

¹ The term “ecocentric” is derived from O’Riordan T. 1976. *Environmentalism*. London: Pion. The terms “ecocentric” and “biocentric” imply a similar ideology in this study.

the Forest Service had become an agency finding power, income, and identity in managing national forests for timber (Wilkenson and Anderson 1987). As more people were equipped with more information, environmental activism grew and began to have considerable influence over Congress. As a result, new Congressional Acts were developed which had big impacts on Forest Service practices. The Wilderness Act (1964), the National Environmental Protection Act (NEPA 1969), the Endangered Species Act (ESA 1972), The Rangeland and Resources Protection Act (RPA 1974), and Clean Water and Clean Air acts were established during the 60s and early 70s, affecting how the US Forest Service operated. While the environmental movement was building constituency, a spectrum of approaches toward solving the environmental crisis resulted (Gottlieb 1993). The environmental movement peaked in popularity in the 90s, twenty years after the initial peak, and polls continue to reveal an American public concern for environmental protection (Ladd and Bowman 1995).

Coinciding with the environmental movement was an explosion in outdoor recreation participation (Hays 1987). This resulted from a range of changes, such as increased disposable income, longer paid vacations, and increased mobility (Dana and Fairfax 1980). This increase in recreation played an important role in the development of the environmental movement (Gale 1972). Reasons outdoor recreation may be associated with environmental attitudes were suggested by Dunlap and Heffernan (1975, 18) to include; Outdoor recreation:

1. "exposes people to instances of environmental deterioration,"
2. "creates a commitment to the protection of valued recreation sites; and also"
3. "cultivates an esthetic for a "natural" environment, which fosters a generalized opposition to environmental degradation."

The increasing popularity of outdoor recreation contributed to a rise in forest users with a variety of perspectives (Jackson 1986, Flather and Cordell 1995). As forest users increased in national forests, conflict ensued. Not only did recreation demands conflict with extractive demands (Jones et al. 1994), but they conflicted with each other, depending upon the type of recreation activity pursued (Cooper 1998). Environmental attitudes have been manifest by how recreationists used the national forests (Jackson 1986). In a study examining how different types of recreationists viewed development and preservation, Jackson (1987) showed “appreciative” recreationists (non-consumptive, self-propelled users of the forest) were more likely to prefer preservation-oriented policies, while “mechanized” and “consumptive” recreationists were more likely to prefer more development-oriented policies. This difference may be important for understanding the conflict, as different recreation opportunities provide different experiences, which contribute to confirming value-based perspectives. In addition, recreationists have often been vocal participants in debates on national forest management.

There have been many changes in forest management policy which have attempted to address the controversy over national forest management starting with the National Forest Management Act (NFMA) of 1976 (Wilkenson and Anderson 1987). NFMA was born out of conflict over clearcut timber harvesting, and was established by Congress to help resolve the controversy through local forest planning. NEPA (1969) had previously created an avenue for more public participation in the management of public lands regarding environmental impacts (Hirt 1994). The static values of the Forest Service had

become vastly different from the changing values of much of the general public, and a resolution was badly needed. The National Forest Management Act, which was finally adopted in 1979, and changed in 1982, continues to this day to be the statutory guideline for managing our national forests.

More recently, the Forest Service has been trying new approaches to managing forest ecosystems which incorporate more public involvement and pay more attention to ecosystem function and integrity; first with "New Perspectives" in 1990 and later in 1992 with the development of "Ecosystem Management" (Kessler and Salwasser 1995). The development of "Ecosystem Management" in recent years has attempted to replace the multiple-use, sustained yield paradigm. The "multiple-use" paradigm has been criticized for not emphasizing "multiple-uses," but instead focusing on revenue-generating timber extraction as the dominant use, and viewing other "uses" as constraints (Wilkenson and Anderson 1987, Hirt 1994, Salwasser 1995, Hays 1998). The MUSY Act (1960) only required the Forest Service to give equal consideration, not equal administration to the variety of uses (Wilkenson and Anderson 1987), and as a result other uses were conveniently appropriated. The emphasis of Ecosystem Management has been on maintaining ecosystem health and integrity (Jones, et al. 1994), but has many definitions and strategies for success (Salwasser 1995, Vogt et al. 1997). Along with addressing problems developing out of the timber domination of the multiple-use paradigm, the development of Ecosystem Management will be informed by the public's social values (Cortner and Moote 1999). Hendee and Pitstick (1994, 25) claim, "Ecosystem management as a new forest management approach, was born amid public conflicts over

existing policies and decisions, and new paradigms promoted by the environmental community.”

Conflict in federal forest management has led to erosion of trust for a wide range of the public, including both environmentalists and conservatives (Hays 1998). There is less acceptance of professional authority evident in much of today's society (Clark et al. 1999, Hays 1998, Yaffee 1994). Environmentalists have been seeking more public participation in national forest planning and emphasizing ecological processes (Cortner and Moote 1999), while “wise-use” conservatives have been seeking more local control, emphasizing resource extraction and economic growth (Ramos 1995). The federal government has fallen short of their wishes. By trying to satisfy everyone, they have contributed to the distrust (Hirt 1994). While distrust has been shown to be widespread, a study conducted by Krannich and Smith (1998) has shown distrust to be lower in more urban areas than in rural areas; and higher among longer term residents of an area.

Research into public attitudes regarding national forest management philosophies can be very useful for national forest managers in establishing effective policies (Bengston 1994). Insight into how policies may be received is very important in the highly political stage of forest management. It can be beneficial for managers to gain knowledge of the range of philosophical views about the natural environment. As Ecosystem Management becomes the guiding principle for public lands management, it is essential for the Forest Service to understand the social values and philosophies that are emerging, and plan accordingly (Cortner and Moote 1999).

National Forest Management in the Pacific Northwest

The Pacific Northwest has been a good case study for examining how preferences for national forest management have been changing. Over a quarter of the land in Oregon and a fifth of Washington are made up of national forests (Zinser 1995). Many political events have occurred in the region in the recent past, such as issues pertaining to the northern spotted owl (*Strix occidentalis caurina*) and old-growth forests, making it a focus of national attention and debate. The declaration of the northern spotted owl as threatened (1990) set off a climax of controversy between many interest groups with different agendas (Yaffee 1994). This significantly impacted timber harvest in the Pacific Northwest, and added to community scale changes already taking place (Yaffee 1994). Many resource-extracting jobs had been lost to automation and new technology (Brunson and Kennedy 1995), and timber harvests had decreased as a result of widespread political opposition and market conditions. Pacific salmon (*Oncorhynchus* spp.) joined owls listed as threatened in 1991, with the marbled murrelet (*Brachyramphus marmoratus*) later listed in 1992. After a quick ecological assessment, 1374 species were found to be dependent on old-growth ecosystems (FEMAT 1993). A study conducted by Steel, Schindler, and List (1994) of Oregon and national publics revealed the favoring of a biocentric philosophy regarding national forest management over anthropocentric approaches, with stronger biocentric preference at the national level than in Oregon.

In response to escalated controversy, President Clinton approached the debate in the Pacific Northwest by initiating a Forest Conference in 1993. This classic case of polarized interests regarding national forest management has been criticized as being a

missed opportunity for resolving the conflict (Walker and Daniels 1996), but provided hope for many critics. As a result of this conference, the development of the Northwest Forest Plan began (1994). The Forest Ecosystem Management Assessment Team (FEMAT) began an economic, social, and ecological assessment of the region, driven by species viability and biodiversity provisions in NFMA, as well as Endangered Species Act requirements (Vogt et al. 1997). The assessment also attempted to address economic considerations of "timber-dependent" communities. There was little public involvement in the process outside of the enormous response of comments on the Environmental Impact Statement, which followed the drafting. Criticism claimed that FEMAT did not adequately address social impacts (Gale 1994). In addition, they did not consider indirect negative impacts associated with logging such as the reduction of air and water quality, or amenity values (Vogt et al. 1997). Some critics argued that the chosen Option 9 of the assessment (which became the Northwest Forest Plan) favored too much timber production, while others complained it did not recognize enough (Yaffee 1994). The plan was approved and is enforced as case law. The impacts of the plan are yet to be determined. Recently (1999), major timber sales were suspended in the Pacific Northwest due to a federal lawsuit over the failure of the Forest Service to conduct rare species surveys in accordance with the Northwest Forest Plan (Barnard 1999a), illustrating that the conflict continues to this day.

Changes in the Pacific Northwest

Many demographic shifts have been redefining the political character of the Pacific Northwest. Human population levels have increased in Oregon and Washington by over 16% between 1990 and 1998, with metropolitan (16.7% population increase) and non-metropolitan (15.2% increase) areas showing similar rates of growth (USDA, ERS 1999). Attracted by qualities of the environment, new people are moving to the West, many bringing new environmental values and concerns which may be changing the forest management paradigm of the Northwest public (Hays 1998). The economy has changed from a resource-extractive dominated region to a service and hi-tech dominated industry (Whitelaw 1992, Ryan 1994, Durning 1999). Outdoor recreational use of the Northwest's national forests has increased (Zinser 1995). These changes will inevitably influence national forest management in the Pacific Northwest.

Study Purpose

This study examines perspectives on national forest management and trust of the US Forest Service across different types of forest recreation types, Places of Residence (big city, small city, town or rural), and Time Spent in the Pacific Northwest. It also examines the support for alternative administrative bodies to manage national forests. The body of data used comes from a survey of western Oregon and Washington residents conducted between 1995 and 1997.

CHAPTER II

LITERATURE REVIEW

Brief History and Background of the Controversy

Management of National Forests

Attitudes and approaches to resource management have been influenced greatly by the framework that developed during the Progressive era of the late 1800s and the early 1900s. After the US expansion west in the 18th and 19th century, with its non-restricted exploitative approaches to resources, a conservation movement began at the turn of the century, led by the first Director of the US Forest Service, Gifford Pinchot (Williams 1989). Historians have discussed a split in philosophies for managing collective resources starting at this time. The utilitarian principle of Gifford Pinchot is on one end of the spectrum--espousing a conservation ethic that viewed nature as under control of humans to be developed and used as resources ("the greatest good for the greatest number in the long run"). John Muir, on the other hand spoke for preservation, regarding nature as sacred, with wilderness and aesthetics highly valued (Nash 1990). While there were some policies developed from preservation values, the dominant philosophy for most of the 20th century has been that of utilitarian conservationists in the national forests (Cortner and Moote 1999).

Several changes took place after WWII, including social change and administrative response. An increase in timber harvest after WWII, due to increased demand from a subsidized housing boom for returning veterans (Brunson and Kennedy 1995), clashed with an increase in environmental awareness, increase in outdoor recreation, new congressional involvement, and political activism leading to a more visible and widespread conflict (Hirt 1994). The preservation versus utilitarian conservation debate was once again aroused, this time with stronger voices. This conflict needed resolution, and several changes began to happen.

Changes in the sixties began to address concerns related to national forests, and several bills were passed in Congress responding to new public reactions. The Multiple-use Sustained Yield Act (MUSYA 1960) was the first legal move toward recognizing other "uses" for the forest beyond timber extraction. Although this concept came to the US in the early 19th century, it did not become the policy for managing our national forests until 1960 (Bengston 1994). This act added recreation, watershed, fish and wildlife to uses of the national forests (MUSYA 1960), and a supposed new role for the national forests. The act required a sustained high yield from all resources, which spelled trouble for the Forest Service's future. In 1964, the Wilderness Act changed the authority to make final decisions regarding wilderness areas from the USFS to Congress (Hays 1998). The year 1968 brought the Wild and Scenic Rivers Act, protecting some of the last unspoiled rivers (Zinser 1995). More importantly, the National Environmental Protection Act (NEPA 1969) created more public participation in management of public lands regarding environmental impacts (Hirt 1994). This was the first major step in

moving toward a forest management paradigm in which public participation was valued. NEPA also created a situation that required that the Forest Service to inventory national forests, so the collection of data began to substantially improve (Vogt et al. 1997).

Throughout the 70s, there was a reaction to timber domination in the national forests (Wilkenson and Anderson 1987). The environmental movement began looking beyond concern over wilderness issues, starting with a focus on clearcuts as a management tool (Wilkenson and Anderson 1987), and the conversion of old-growth forests to tree-farms (Dietrich 1992). The Forest and Rangelands Renewable Resources Planning Act (RPA1974) was developed to assess management needs of all of the forests and require plans for 50 year intervals, with updates every 5 years (Wilkenson and Anderson 1987). This planning process did not end the conflicts, but instead established direction leading to the National Forest Management Act (NFMA 1976). The National Forest Management Act (1976) addressed substantial forestry issues such as diversity of stand, riparian zones, size of harvest, and harvest on marginal timber lands, a marked shift from the procedural laws which preceded it (Wilkenson and Anderson 1987). It was asserted that the "Forest Service could not be trusted to make the right decisions; provisions were written to make substantive constraints on management choices," creating resentment on the part of the Forest Service (Hays 1998, 134). The Forest Service thought they could satisfy all needs for all people by "intensively managing" national forest land (Hirt 1994), a sentiment not shared by environmentalists (Hays 1998). There was no way that the Forest Service could fulfill its multi-value mission without compromising both public and congressional expectations. The National Forest

Management Act added a new planning process to the management of national forests, which began to resolve some of the philosophical and value differences involved (Hays 1998).

Intensity was building on both sides of the debate into the eighties, as harvests were increased under the Reagan administration, stirring a great amount of opposition from the environmental community (Hays 1998). More environmental organizations joined forces with a range of other organizations finding common ground on which to challenge the Forest Service (Hays 1998). The environmental movement was gaining popularity with the public, but was not making progress politically. People were increasingly interested in environmental issues, and membership in environmental organizations grew. By Earth Day 1990, the environmental movement's popularity was higher than ever before (Dunlap 1992). By the late 80s, there was a shift in focus from "sustained yield" and its focus on outputs to "sustainability," with a focus on resource conditions (Cortner and Moote 1999).

Major changes in forest management occurred during the 1990s. Despite high ratings of environmental interest in polls, environmental initiatives across the country fared very poorly just six months after Earth Day 1990 (Dietrich 1992). At the same time, the "iron triangle," held between timber companies, lawmakers, and Forest Service officials keeping timber harvest as the first priority showed its first signs of disturbance (Cooper 1998). The Forest Service began approaching management with "New Perspectives," focusing more on ecological principles (Kessler and Salwasser 1995). "Ecosystem management" has been the latest development regarding national forest

management, and has been suggested to be a way for the Forest Service to adapt to changing public values (Jones et al. 1994, Hendee and Pitstick 1994), without making any legally binding policy changes. Its development was the result of changing scientific knowledge, and changes in professional and administrative practice (Cortner and Moote 1999). The practice was institutionalized through the Federal Ecosystem Management Team's (FEMAT 1993) report and the Northwest Forest Plan.

Ecosystem Management has been defined a number of ways (Salwasser 1995, Vogt et al. 1997) which have implications for how it gets carried out. The definitions are based on fundamental philosophical differences, and range from those focusing on protecting long-term "native ecosystem integrity" (Grumbine 1994) to the more anthropocentric US Forest Service definition which seeks to "integrate ecological, economic, and social factors to maintain and enhance the quality of the environment to best meet current and future [human] needs"(USDA, FS 1994). Ecosystem Management was not a new idea of the nineties, but developed out of movements that had been gaining momentum for some time (Vogt et al. 1997). The change in societal values, the development of ecosystem science, evolving resource management experience, and changes in technology all led to the development of Ecosystem Management (Cortner and Moote 1999). Through public involvement, there are many directions it could go.

Trust of the Forest Service

Not only has there been conflict over how the national forests should be managed, there has been controversy over who should manage the national forests. There are alternative ideas discussed as to who should manage national forests that have resulted

from various perceptions of current practices. Most have focused on establishing control in local communities or state institutions, and are seen as a "Revolt of the West," a challenge brought on by social and economic changes in communities affected by federal natural resource policies and practices (Krannich and Smith 1997). These have been labeled as "County-Supremacy" and "Wise-Use" movements, and involve an interest in taking power out of the federal government's hands to put it into local control (Krannich and Smith 1997).

A number of events and processes have contributed to the distrust, including both internal and external conflict (Jones et al. 1994). The Forest Service has been accused of mismanagement, flaws in accounting practices, running timber-sales programs which lose money, subsidizing detrimental road building, being too bureaucratic, being too political, and having a culture associated with extraction (Cooper 1998), among many other issues. The impossible mission of producing all goods for all interested parties at high outputs, what historian Paul Hirt describes as a "conspiracy of optimism," has increased distrust of the Forest Service to manage public land among many stakeholders. This increase in distrust of the Forest Service has contributed to the messiness of the politics (Brunson et al. 1997), and has been developing over time, as suggested in the previous section.

Many people have formed opinions about how the Forest Service manages public lands, some based on their own first-hand recreation experiences in the national forests, others by shared community values, and many informed by media portrayal of the issues. Even though NEPA (1969) and NFMA (1976) established a forum for public

participation, there have been many people who believe that decisions are often made by the Forest Service prior to receiving public input (Frome 1984). The National Forest Management Act attempted to address a balance between “technical expertise” and public participation. However, when the revised regulations for NFMA itself were issued in 1982, the public was not consulted, resulting in greater distrust. (Frome 1984). There have been many decisions made through the FEMAT and Northwest Forest Plan process which have increased distrust. Even decisions made outside of the agency, such as the “Salvage-logging Rider,” signed by President Clinton in 1995, which opened up new areas to formerly restricted logging, have contributed to distrust of the Forest Service. The trust of government in general has decreased in the recent past for certain populations (Yaffee 1994). No approach to managing forests will work without the support of the public, as forest issues are highly political.

Values and Perspectives on National Forest Management

Attitudes toward national forest management may be driven by underlying values (Manning et al. 1999). Values can be framed in a number of ways including through conceptual, relational and object realms, but in this study they are examined as an ideal or held value, simplified (incompletely) as a preference (Bengston 1994). A held forest value was defined by Bengston (1994, 520) as an “enduring concept of the good related to forests and forest ecosystems,” which can be instrumental (providing uses, such as economic/utilitarian or life supporting) or intrinsic (such as aesthetic or of moral/spiritual concern). Values have been changing, with an overall decline in economic/utilitarian

values, and increases in other values depending on the group identified (Xu and Bengston 1997).

Public Values, Forest Professional Values

Differences have been shown between the values of forest professionals and those of the public, adding complexity to the issue and contributing to the distrust of the Forest Service. This comes partly from the traditional "science-fact based," expert role the Forest Service believed itself to play (Cortner and Moote 1999). Xu and Bengston (1997) illustrated great differences between forest professionals and environmentalists, with forest professionals showing lower concern for moral/spiritual and life supporting values and environmentalists holding moral/spiritual values high and regarding forests as places which have no substitute. The Forest Service has been criticized for being biased against many emerging values (Hays 1998).

Within the Forest Service, a shift in values has been occurring, due partly to the growing number of non-foresters in the agency (Brown and Harris 1992b). Recently, the development of AFSEEE (Association of Forest Service Employees for Environmental Ethics) in 1989 has demonstrated conflicting values within the agency, as they were critical of the Forest Service timber extraction emphasis (Blumenthal 1991). The formation of Public Employees for Environmental Responsibility (PEER) is another sign of changing times (Bengston 1994). There are indications that overall agency values are shifting (Hirt 1994), and responding to changes in trends. With the appointment of Jack Ward Thomas as Chief, the wildlife biologist who directed the Northwest Forest Plan, and more recently with the appointment of Mike Dombeck, a fisheries biologist as Chief

of the agency, there have been major shifts in the emphasis of the agency, at least on paper. Dombeck has declared that the emphasis has changed from commodity production to watershed health, restoration and sustainable ecosystem management (Cooper 1998). As the agency changes, perhaps forest management practices will better reflect public values.

A Paradigm Shift?

It has been argued that a "New Environmental Paradigm," has been replacing the old "Dominant Social Paradigm" (Dunlap and Van Liere 1978) evident in many disciplines. The "dominant social paradigm" was based on:

economic growth, control of nature, faith in science and technology, ample reserves of natural resources, the substitutability of natural resources, and a dominant role for experts in decision making;

The "new environmental paradigm" is associated with:

... harmony with nature, skepticism toward scientific and technological fixes, finite natural resources, limits to substitution, and strong emphasis on public involvement in decision making (Bengston 1994, 515).

A paradigm, based on Thomas Kuhn's (1970) work, can be understood to be a "framework of understanding or perspective shared by members of a profession or discipline" (Cortner and Moote 1999), or more simply, a worldview. The increase in popularity of more ecocentric paradigms in recent past may be the start of a new public paradigm preferring an "Ecosystem Management" approach. Gordon (1994) has suggested that the former "multiple-use, sustained yield" paradigm is being replaced by an approach emphasizing sustainable forests, not sustainable forestry. At the same time,

people possessing more moderate values than those espoused by ecocentrism may support different definitions of ecosystem management. While paradigms are changing, it should also be recognized that many worldviews can exist at one time, that paradigms do not have rigid edges, and a more pluralistic view reveals that different worldviews regarding the management of natural resources have existed for a long time.

Philosophical Roots

Philosophies regarding forest management range from nature-focused, ecocentric philosophies to utilitarian, anthropocentric philosophies, with a “multiple-use, sustained yield” philosophy at the middle of the continuum (Brown and Harris 1998). Post WWII forestry in the US, although legally multiple-use, sustained yield driven, has been focused on extracting timber and other resources for human benefit. A “timber-focused” philosophy regards forests as a source of commodities. This view draws from subsistence, with a short-term perspective, and decisions made by “experts” (Steel and Lovrich 1997). Philosophies emphasizing “multiple-use, sustained yield” are also anthropocentric and utilitarian (that which is sought to be utilized by humans), but seek to include more uses than just commodity uses of the forest. People holding this perspective are likely to regard forests as places that benefit humans in a number of ways, including extractive, aesthetic, or recreational, and are more closely aligned with Gifford Pinchot’s conservation ethic. Philosophies have been evolving which regard forests and all living systems as inherently valuable and worthy of protection (Devall and Sessions 1985, Zimmerman 1994, Drengson and Inoue 1995). These “ecocentric” philosophies

differ greatly from the more anthropocentric “utilitarian” philosophies, and are more aligned with Muir’s preservation ethic (mentioned earlier). Some profess a “deep ecology,” seeking to expand an individual’s self-identity to include the natural world, regarding wildlife and natural systems on the same level as human beings (Devall 1992). They build on Aldo Leopold’s land ethic, in that “A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community,” which expands the concept of community to include non-human living entities (Leopold 1966, 262). Brown and Harris (1998) have drawn up a continuum to measure support for forest management philosophies, that can be further simplified to include “ecocentric” at one end, “timber-focused” at the other end, and “multiple-use” in between. The philosophies can be more closely examined to understand disagreement.

Potential Factors Influencing Perspectives on National Forest Management

Many characteristics, including participation in different forest recreation activities and socioeconomic factors have been examined to explain the formation of attitudes toward national forest management. Attitudes are defined by Eagly and Chaiken (1993, 1) to be a “psychological tendency that is expressed by evaluating a particular entity with some degree of favor or disfavor.” For the purpose of this study, attitudes can be described as views or perspectives. They are informed by cognitive processes (through receiving information), behavioral processes, and affective processes (or emotional experiences) (Eagly and Chaiken 1993). Manning et al. (1999) argued that a

combination of values and ethics is associated with attitudes toward national forest management.

Different geographic regions, places of residence, groups of stakeholders, and many other factors are likely to reveal differences in the relative importance of forest values (Bengston 1994), and therefore attitudes toward national forest management. Preferred forest recreation activity has been shown to be associated with perspectives on national forest management in Canada (McFarlane and Boxall 1996), with development of forests for recreation or preservation (Jackson 1987), as well as views on the environment (Dunlap and Heffernan 1975, Van Liere and Noe 1981, Jackson 1986), and environmental behavior (Theodori et al. 1998). There has been substantial research on the general relationship between socioeconomic factors and environmental attitudes or behaviors (Van Liere and Dunlap 1980, Nord et al. 1998), but less on perspectives regarding the management of national forests. Schindler et al. (1993) examined a number of socioeconomic factors, including place of residence, education level, age, gender, race, and source of income to show association with perspectives on national forest management. The amount of time spent living in a region (such as the Northwest) has not been examined as a potential source of difference, but historians have noted its importance, with changing values leading to changes in preferences for national forest management (Hays 1998). The following sections review the literature of these variables more closely.

Recreation Types and National Forest Management Perspectives

Recreation in the national forests has been increasing and changing, creating a more active and informed public, showing detrimental impacts, and also hope for what has been described as the necessary re-creation of society. The use of national forests for recreation was minimal before the passing of the MUSY Act in 1960 (Wilkenson and Anderson 1987), and has been growing steadily since (Cooper 1998). Recently, national forests have been responsible for providing 40% of the recreation use of all public lands (Wilkenson and Anderson 1987). A large percentage of national forest land exists in the Pacific Northwest, making recreationists a big stakeholder group. Participation in certain outdoor recreation activities has been associated with attitudes toward the environment (Van Liere and Noe 1981, Jackson 1986), and environmental preferences (Virden and Schreyer 1988). With people gaining a closer association with outdoor environments, it is likely that they hold stronger opinions about forest management issues. It is argued that outdoor recreation can lead humans to develop what E.O. Wilson (1984) calls a "deep conservation ethic" (Oelschlaeger 1995, 347), but this is not always the case for all recreational experiences sought. Recreation activities can have impacts that will seriously damage, or destroy the ecological functioning of forests (Boyle and Samson 1985, Flather and Cordell 1995). Dunlap and Heffernan (1975) argued that preferences for different types of recreation reflect underlying values and attitudes toward nature.

Researchers have divided recreationists into a number of distinctive "types," based on chosen activities or environments sought. Some types are described as "Appreciative or Consumptive" (Hendee 1969, Dunlap and Heffernan 1975, Tarrant and

Green 1998), "Consumptive or Non-Consumptive (Zwick and Solan 1996)," "Appreciative and Intensive (Steel and Pierce 1997)," and "Appreciative, Consumptive, or Mechanized" (Jackson 1986, Jackson 1987). Dunlap and Heffernan (1975, 19-20) described "appreciative" activities as those which "involve attempts to enjoy the natural environment without altering it." They defined consumptive activities as those that attempt to take something from the environment. Geisler et al. (1977) identified an "Abusive" category, recognizing those activities (motorized, mechanized, and consumptive) which were extremely damaging to the environment. Recently, a study by Theodori et al. (1998) commented on the necessary environmental impacts of both appreciative and intensive (mechanized and consumptive) recreation, and defined new categories to be "appreciative-to-slight resource utilization" and "moderate-to-intensive activity," more reflective of the impacts. A different categorization, known as the Recreation Opportunity Spectrum (ROS), attempts to relate experiences with settings. This tool for planning in the national forests has divided recreation activities into six types, including "Primitive," "Semi-Primitive Non-Motorized," "Semi-Primitive Motorized," "Roaded Natural," "Rural," and "Urban" (Buist and Hoots 1982).

Studies have demonstrated some fundamental differences in outdoor recreation types associated with attitudes toward the environment. In a study by Jackson (1987), he grouped outdoor recreation activities into three broad areas: "appreciative" activities (canoeing, hiking, and cross-country skiing)--those which are self propelled, non-consumptive, "consumptive" activities (hunting/fishing), and "mechanized" activities (eg. motorboating, snowmobiling, and trail biking). "Mechanized" and "consumptive"

recreationists were found to possess stronger pro-development attitudes (with the exception of hunting) than those people preferring "appreciative" activities, who showed more preservationist orientation (Jackson 1987). A study by Zwick and Solan (1996) compared values of "consumptive" and "non-consumptive" recreationists. Consumptive was defined as hunter/fisher (natural resource harvesters), while non-consumptive included non-hunters/non-anglers. Consumptive recreationists displayed a more personal security orientation in their value patterns, while non-consumptive displayed more societal orientation. This self-orientation vs. societal-orientation may point to a source of some of the differences between recreationists' views on resource management, as values have been associated with preferences for national forest management (Manning et al. 1999).

Research regarding associations between outdoor recreation and environmental attitudes has found that people participating in "appreciative" activities hold stronger pro-environmental attitudes than people engaging in "consumptive" activities (Dunlap and Heffernan 1975) or "mechanized" activities (Jackson 1986). Other studies have shown weaker or non-existent associations (Geisler et al. 1977, Pinhey and Grimes 1979, Van Liere and Noe 1981). One study, conducted by McFarlane and Boxall (1996), suggested that certain groups in Canada might be more accepting of an ecosystem management approach to managing public forests. They showed a majority seeing wildlife as a sign of the quality of the environment, valuing the protection of endangered species through legislation, and showing an emphasis for a variety of plants and animals (biodiversity). More research is needed to understand how participation in recreation activities is

associated with perspectives on national forest management in the US. This study examines perspectives of national forest management by different recreation types in the Pacific Northwest.

Place of Residence and National Forest Management Perspectives

Many researchers have found residential status (big city, small city, town, rural) to be a source of difference, often focusing on urban/rural differences (Hendee 1977, Tremblay and Dunlap 1978, Nash 1982, Alm and Witt 1997). Some research suggests that "Place of Residence" (or residential status) is important in forming attitudes toward environmental preservation (Tremblay and Dunlap 1978), with urban residents having greater environmental concern than rural residents. Alm and Witt (1997) have reviewed the literature and found a variety of relationships, depending upon the instrument used to measure the preference.

The stereotype suggests that natural resource "commodity" people live in rural areas and have a more resource harvest mentality because of their economic dependence and have less environmental concern. It has also been argued that concentrations of environmentalists reside in urban areas, and exert a great influence on rural areas because of their control of knowledge, politics, and media (Steel and Lovrich 1997). Tremblay and Dunlap (1978, 476) "expect rural residents to have lower concern [for environmental issues, partly] because of...their greater tendency to hold utilitarian (as opposed to appreciative) attitudes toward the natural environment when compared to

urban residents.” However, there may be significant changes in rural and urban social composition and a convergence of attitudes (Shannon 1988, Hays 1998).

Core/Periphery Differences

An understanding of economic structural effects on urban-rural relationships may shed some light on changes affecting urban and rural values. There has been growth of “core” urban service economies and a fall of “periphery” natural resource rural economies (Steel and Lovrich 1997). Society has been moving in a direction where urban areas control the rural areas in many ways, including environmental values, often demonstrated through protective rules (Dietrich 1992). Brown and Harris (1992a) explained the urban-rural conflict as the “Dominant Resource Paradigm” being held by a majority of the rural “periphery” and the “New Environmental Paradigm” existing in the urban “core.” People living in rural areas have desired more harvests to maintain their economy, contrasting with the urban population’s desire to preserve natural areas for recreation and other non-material uses.

A number of factors have influenced the development of the “core-periphery” natural resource management situation including: population change, economic change, technological change, and value change (Steel and Lovrich 1997). With the development of technology, many rural industries have become less labor-intensive, which has encouraged migration to urban areas. Technology, developed in urban areas, established new ways to understand environmental issues (such as remote sensing and Geographic Information Systems) and ways of communicating information, and as a result, have

more opportunity for influence and power. Populations continue to grow and change, and the previous section discussed how public values have changed over time.

There has also been a great mix of migration, with rural people moving to urban and suburban areas, and urban people moving to rural areas. Jobs have brought people into urban environments, while quality of life has brought urban people to rural areas. Structural changes in the economy, coupled with urban people moving into rural and remote areas since the 70s, and a number of other demographic changes resulted in a mixing of urban and rural values (Shannon 1988, Hays 1998). The result has been an inconsistent framework for understanding and approaching environmental problems across Places of Residence. Considering these changes, the urban-rural variable continues to deserve attention. This study should add to the body of research.

Time Spent in the Pacific Northwest and Perspectives on National Forest Management

A literature review found little research done regarding time spent in a region and its associations with views on national forest management there. However, considering the vast changes taking place in the Pacific Northwest, this variable is of critical interest. Hays (1998) has suggested that a new West is emerging, based on migrations of people bringing new values and political agendas to rural areas. The extent of this change has not yet been fully described. While there is a great amount of research done on urban-to-rural migration (see Fortmann and Kusel 1990), there is no discussion of immigration into the region. This study is a step toward understanding how newcomers might be

different from long-timers in their perspectives on national forest management in the Pacific Northwest.

Study Objectives

This study examines some differences and similarities between sub-groups in the Pacific Northwest in their views on managing national forests, as well as their trust of the US Forest Service to manage public lands. Management philosophies are compared with respect to people's recreation type (whether "appreciative" or "intensive"), perceived place of residence (big city, small city, town, or rural), and how much time they have spent in the Northwest (newcomers (1-4 years), new settlers (5-9 years), established settlers (10-20 years), and long-timers (20+ years)). The study uses a survey of western Oregon and Washington residents (in the range of the northern spotted owl, not including northern California) to measure levels of support for philosophies regarding forest management. McFarlane and Boxall (1996) have pointed out that forest management attitudinal research lacks a standardized instrument for measurement, making long-term analysis of attitude change difficult. Regardless, this study is important to understand recent attitudes toward national forest management in the Pacific Northwest of the United States.

Postulated Relationships

The previous literature review suggests several questions need to be more closely examined. The following postulated relationships were chosen based on their relevance to regional demographic change:

- (1) "Appreciative" recreationists (those who participate in non-propelled, non-consumptive activities which have lower impacts on the forest), are suspected to favor more "ecocentric" philosophies of forest management, and are less supportive of "multiple-use, sustained yield" management than "intensive" recreationists (those who use the forest intensively, including "consumptive" and "mechanized" recreationists);
- (2) The urban majority in the Pacific Northwest is more ecocentric, less supportive of the multiple-use philosophy, and less timber-focused than rural areas in the Northwest;
- (3) New residents are bringing new environmental (ecocentric) values, contributing to a shift in public forest management preferences;
- (4) Distrust of the Forest Service is lowest in urban (big city and small city) areas, higher in rural areas and small towns, and highest among long-timers. Distrust is expected to be higher among "appreciative" recreationists, who are suspected to favor less development and alteration of the forest landscape; and
- (5) There is a significant population supporting new county or state-wide institutions to make decisions affecting national forest lands.

CHAPTER III

METHODOLOGY

Gathering Data: The Survey

A survey was conducted to a quasi-stratified sample of western Oregon and Washington residents. Members of a number of organizations representing a variety of types and interests were surveyed during group meetings (Appendix B). An effort was made to recruit groups from a variety of rural, small town, suburban and urban, as well as roughly equal numbers of those favoring resource production, forest protection, and moderates on national forest management ideology. Vogt et al. (1997, 309) suggested that "the democratic character of agency policy is dependent upon the representativeness of groups that attempt to influence agency policy." Five hundred thirty-eight respondents from 57 groups surveyed in late 1995, 1996, and early 1997 made up the total sample. These included environmental groups, civic clubs, logging and property rights advocates, professional organizations, social clubs, outdoor recreation groups, higher-education classes, business clubs, corporate offices, granges, and neighborhood associations. The original survey included 1218 respondents, but those used in this study were those who answered questions on recreational use of the national forests, perceived Place of

Residence, Time Spent in the Pacific Northwest, and optional questions on national forest management philosophies.

The survey queried a broad range of issues, ranging from scenic beauty concerns to forest management philosophies. The purpose of the survey was to gain insight into public opinion regarding national forest management in the range of the Northern Spotted Owl. The survey built on a study conducted in 1991 (Schindler et al. 1993, Steel et al. 1994), which examined public attitudes toward various national forest management approaches. The survey used in this study covered issues beyond what was analyzed for this thesis (Appendix A).

Research Questions

The Recreation items described in the next section, as well as the reported Place of Residence and Time in Northwest were cross-tabulated with questions pertaining to forest management philosophies. The relationships between these characteristics and forest management philosophy, as well as with the trust of the forest service to manage public land, were analyzed. The analysis sought to answer the following questions:

- (1) Are appreciative recreationists more ecocentric in their philosophies on national forest management than intensive recreationists? Are intensive recreationists more likely to support multiple-use, sustained yield philosophy of managing national forests? To what extent is the timber-focused philosophy supported?
- (2) Are people who see themselves as living in a rural place more timber-focused in their views on managing national forests? Are self-perceived big city and small city (urban) residents more ecocentric than rural people concerning national forest management? Are perceived big city and small city residents less supportive of a multiple-use, sustained yield approach?

- (3) Are long-time Northwest residents more supportive of a timber-focused management philosophy concerning the national forests? Are newcomers more ecocentric, and less supportive of a multiple-use, sustained yield approach?
- (4) To what extent does trust differ across recreation types, places of residence, and time spent in the Pacific Northwest? Are appreciative recreationists less trusting of the Forest Service to manage public land than intensive recreationists? Are self-reported rural residents less trusting than reported urban (big city and small city) residents? Are newcomers more trusting than long-timers?
- (5) Which agency, existing or new, would be supported by a majority of the public to make decisions affecting national forests?
- (6) Do the above patterns suggest ways in which these types of people might interact in supporting policies, or react to changes, in the national forests?

Classifying Respondents: Independent Variables

Respondents were divided in three different ways: Recreation Type ("appreciative" and "intensive"), perceived Place of Residence (big city, small city, town and rural), and Time in Northwest (number of years having resided in Oregon or Washington). The process for dividing each of these independent variables is explained below.

Respondents' recreation preferences were used to divide the respondents into three categories: "appreciative," "intensive," and "non-distinct" recreationists. These categories were based partly on earlier research (Jackson 1987), but the method used in this study differs. The term "intensive" recreationists is derived from a paper by Steel and Pierce (1997, 53) and includes both "consumptive" and "mechanized" activity preferences. In Jackson's (1987) study, he used the descriptor "appreciative" activities to include activities such as cross-country skiing, hiking, and canoeing, which were "self

propelled, non-mechanized activities,” and tended to “appreciate nature” and have less impact on the forest ecosystem. An all-inclusive list of activities in this study follows (Table 3.1). “Intensive” recreationists were what Jackson and others have described as “consumptive” and “mechanized.” “Consumptive” activities consisted of activities such as hunting, fishing, mining and other resource-extractive-tending activities. “Mechanized” activities included activities such as motorboating, snowmobiling, four-wheeling, trailbiking, and those activities that were mechanized or motorized. These activities tend to have greater impact on the forest ecosystem, but this varies by the activity and intensity.

Table 3.1. Initial Classification of Respondent-defined Recreation Activities

<u>Appreciative (1)</u>	<u>Intensive (2)</u>	<u>Non-distinct (0)</u>	
Backpacking	Biking	Activism	Scenery
Back-country skiing	Collecting forest products	Admiring	RV Camping
Birding	Fishing	Boating	Sightseeing
Canoeing	Four-wheeling	Breathing	Skiing
Climbing	Hunting	Camping	Sleeping
Cross-country skiing	Mining	Driving	Touring
Hiking	Motorcycle riding	Eating	Vacationing
Kayaking	Prospecting	Enjoying	Viewing
Enjoying nature	Shooting	Exploring	Wandering
Photography	Snowboarding	Frisbee	Water activities
Rafting	Snowmobiling	Horse riding	
Sailing	Water skiing	Mushrooming	
Swimming		Picnicking	
Walking		Relaxing	
Writing		Running	

The classification of the activities (Table 3.1) for this study was done by coding responses given to the free-form response question, “...What are your top two favorite recreation activities in national forests?” The number of activities offered presented a

situation that required using intuition to classify many of the reported activities.

Initially, appreciative activities were given a (1), intensive were given a (2), and “non-distinct” were given a (0).² “Non-distinct” activities were those which did not provide enough information to indicate whether the activity seeker was appreciative or intensive. An activity such as “camping” provides a good example, as campers can fall into either of the other categories. Pleasure driving, the most popular activity in the national forests (Zinser 1995, Cooper 1998) was classified as non-distinct, as nearly all recreationists drive automobiles in national forests to recreate. “Water activities,” also widely popular, were categorized as non-distinct because not enough information was provided.

Initially, respondents were classified into each of the categories according to which favorite activity they indicated (as suggested above in question used to record and classify activities). To be considered an appreciative recreationist, a respondent was required to indicate either two favorite activities in the appreciative category, or one in the appreciative category, and one in the non-distinct category. The same applied for intensive, with appropriate respective inclusion. This was based partly on Jackson’s (1987) research, in which he developed pairs of opposite activities, such as snowmobiling--cross-country skiing, and required exclusive participation in one of the activities. Those respondents who indicated preference for participation in both appreciative and intensive activities were classified as non-distinct.

² An initial analysis divided up intensive recreationists into “mechanized” and “consumptive” recreationists. A low number of mechanized recreationists were sampled. These categories were combined to be “intensive” recreationists.

An additional test was necessary for non-distinct respondents, based on another question in the survey. Respondents were asked to identify up to five, out of twenty-four (Table 3.2), of their “most important [motivations] for recreating in national forests.”

Table 3.2. Motivations for Recreating, and Recreation Type (#)

scenic beauty (0)	solitude (0)	sunshine and fresh air (0)
seeing wildlife (0)	testing ORV or boat (2)	collecting nature specimens (0)
bagging an animal (2)	avoiding other people (0)	muscle powered exploration(0)
socializing with friends (0)	experiencing history (0)	risk taking/thrill seeking (0)
improving the forest (1)	peace and quiet (0)	learning about nature (1)
collecting forest products(2)	exercise (0)	rest (0)
motorized exploration (2)	catching fish (2)	watching other people (0)
personal challenge (0)	escaping work or city (0)	other...(0)

(0)=Non-distinct; (1)=Appreciative; (2)=Intensive

These psychological motivations (Table 3.2) were divided into “appreciative,” “intensive” and “non-distinct” *motivations* (USDA, FS 1987). Zeros (0) on Table 3.2 are motivations that could be held by either appreciative or intensive recreationists. Non-distinct respondents (based on their self-declared favorite activities in the previous test) who indicated a motivation from either appreciative or intensive exclusive of the other, were placed into that recreation type. For example, a person who camped and enjoyed water activities, and was motivated by testing their boat and motorized exploration would be classified as an intensive recreationist. Otherwise, they remained classified in the non-distinct recreation type, because this additional survey question failed to indicate an appropriate classification.

The 538 respondents were divided as such: 307 appreciative, 151 intensive, and 80 non-distinct. The non-distinct category was not further analyzed. Because this

sample was not a random poll sample, these numbers do not represent any proportions of the larger population.

In addition, respondents indicated their perception of their place of residence (whether they were from a big city (“more than 100,000 people”), a small city (“between 25,000 and 100,000”), a town (“less than 25,000 people”), or a rural environment (“home isolated outside a town or city”)) (Appendix A). The 538 respondents used in the analysis yielded 192 people reporting they were from a big city, 137 from a small city, 109 from a town, and 100 from a rural environment. A random sample, double checking place of residence by zip codes (which were asked for in the survey) and census data, revealed some discrepancies between reported place of residence indicated and actual populations. Nonetheless, place of residence was analyzed as a potentially correlated factor with the formation of philosophies about national forest management.

In addition, respondents indicated the amount of time they have been living in Washington and/or Oregon in intervals of 1-4 years (newcomers), 5-9 years (new settlers), 10-20 years (established settlers), and more than 20 years (long-timers). There were 122 respondents who reported that they have resided in Washington or Oregon for the past four years, 66 respondents between five and nine years, 95 respondents between 10 and 20 years, and 256 respondents who have resided in the Northwest for more than 20 years. This factor is described as “Time in Northwest,” throughout the study. There were other demographic factors surveyed, but not analyzed in this study.

Dependent Variables

The analysis focused on forest management philosophies with respect to “Recreation type” (preferences), amount of “Time in [the Pacific] Northwest”, and reported “Place of Residence.” In addition, the study examined the trust of the US Forest Service to manage public lands and other possible management sources.

The public lands management philosophy statements listed below were drawn from a number of sources describing a range of philosophies about managing national forests (Hirt 1984, Wilkenson and Anderson 1987, LeMaster 1984). These questions were posed as statements on a Likert-type scale ranging from “Strongly Disagree,” with a coding of 1, to “Strongly Agree,” with a coding of 5, and an option for “Neutral or Not Sure,” given a coding of 3. The following statements were used in the study (Appendix A):

1. National forests should supply all the timber needed by existing mills. Other resources should be provided as much as possible only after that goal is met. (Timber-focused)
2. National forests should be entirely devoted to wildlife diversity and nature protection with recreation allowed only where compatible with wildlife. (Ecocentric)
3. National forests should produce as much of all kinds of resources, like wildlife, timber and recreation, as possible, so long as producing any one resource doesn’t eliminate the possibility of producing lots of any of the other resources in the future. (Multiple-use)

These statements were used to represent overall philosophies concerning national forests. Throughout the study, number one, above, is referred to as the “Timber-focused” philosophy; number two is referred to as the “Ecocentric” philosophy; and number three is referred to as the “Multiple-use” (sustained yield) philosophy. These were chosen as

just a few representative statements concerning a variety of viewpoints on national forest management (Hirt 1984, Steel et al.1994). Statement (1) is clearly timber-focused. Although the relationship between resource extraction and recreation is not spelled out, it is implied. The purpose of forests is undeniably for the production of timber resources for human purposes disregarding ecological processes and other forest values. Statement (2) is ecocentric, with a relationship between recreation and management also included. It is important to note that the sub-sample included only people who recreated in the national forests, so strongly supporting this statement meant not only supporting management which immediately affected one's preferred activity environment, but spoke to the sacrifice necessary for the protection of nature and wildlife diversity. Statement (3), the current NFMA policy, has proven politically and socially impossible to satisfy, leading to many of the political complications that the Forest Service has had to deal with in the recent past. It focuses on managing on the brink, "producing as much...as possible," which inevitably impacts a forest's ability to produce other "resources." This production-oriented, utilitarian perspective recognizes many values, but its emphasis on maximum yield makes it self-destructive.

In addition, a question referring to trust of the forest service to manage public land was included. This statement read, "I *do not* trust the forest service to manage public land" on the same Likert-type scale described above. This question was the first part of two questions aimed at measuring support for current federal management of national forests. It was followed by a question which read, "Who should make

management decisions affecting national forest lands?...Circle your most preferred choice from these options: 1) U.S. Forest Service; 2) U.S. Interior Department; 3) states; 4) counties; 5) statewide citizen boards; 6) local citizen boards. This question provided an array of alternatives aimed at gathering insight into support for the County-Supremacy movement and alternative potential land management governing bodies.

Testing Relationships

In order to test the relationships for statistical significance of the research questions, chi-square tests were used. Comparing sub-groups two at a time, the test showed whether each variable was statistically different in its relationship with the dependent variable. For instance, big city respondents' pattern of agreement with a philosophy was compared with small city respondents. This produced a chi-square statistic to see whether the two groups had a different pattern of responses that was unlikely to have occurred by chance. The results are reported in the next chapter.

CHAPTER IV

RESULTS

Recreation Type and Forest Management Philosophies

Both Recreation types showed strong disagreement with the timber-focused philosophy, with over 90% of appreciative recreationists disagreeing or strongly agreeing with this approach (Figure 4.1). Within that strongly shared tendency, appreciative and intensive recreationists showed a statistically significant difference in their response patterns (Table 4.1). Appreciative recreationists had a smaller percentage of respondents disagreeing and more respondents agreeing. Intensive recreationists had a slightly greater percentage agreeing or strongly agreeing with the timber-focused philosophy (Table 4.2).

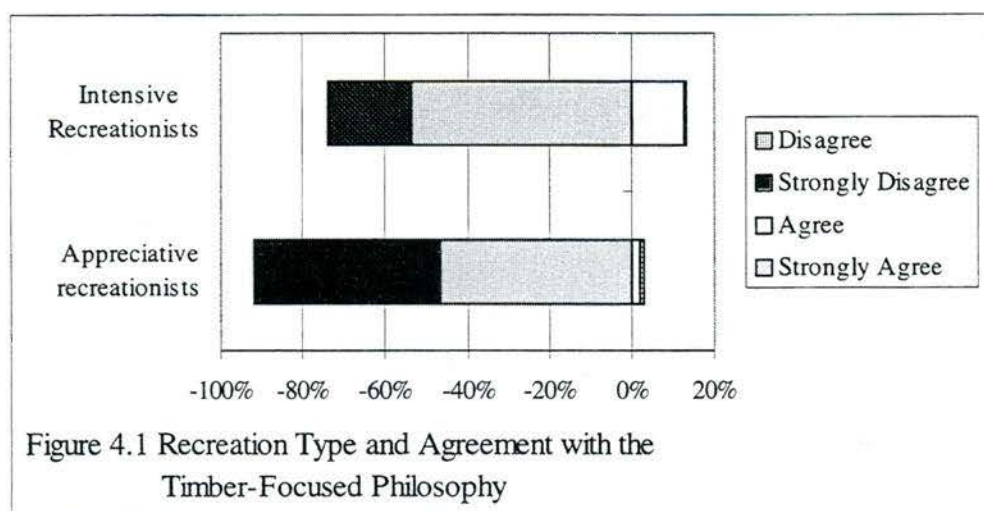


Table 4.1 Chi-Squares and Associated p-Values for Recreation

Recreation type	Timber-focused		Ecocentric		Multiple-use	
	Chi-square	p-value	Chi-square	p-value	Chi-square	p-value
Passive vs Intensive	*46.89	0.000	*47.85	0.000	*19.63	0.001

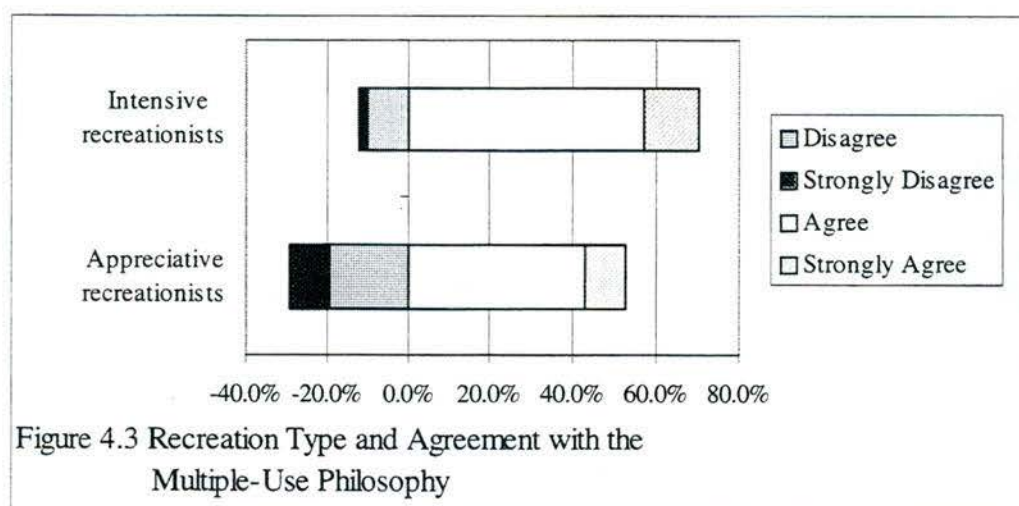
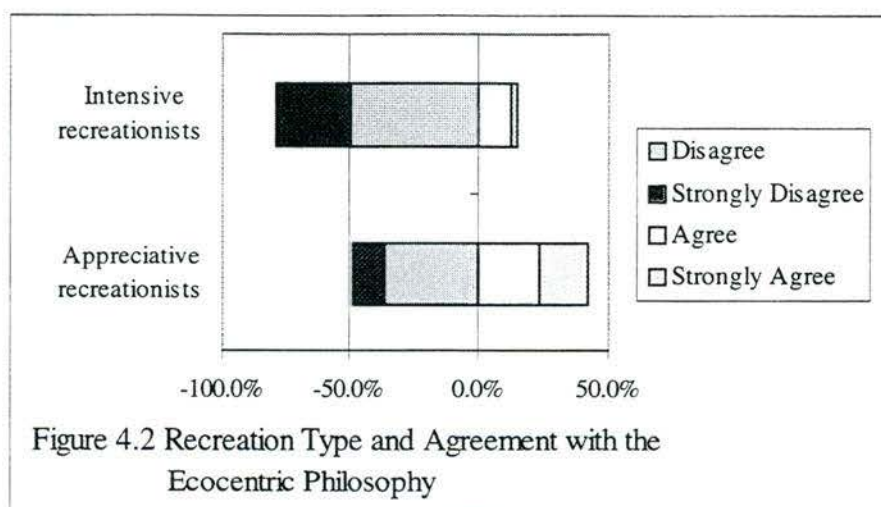
* Asterisk indicates statistically significant relationship

Table 4.2 Recreation Type and National Forest Management Philosophies

"National forests should supply all the timber needed by existing mills. Other resources should provide as much as possible only after that goal is met."							
	Strongly Disagree	Disagree	Neutral/ Not Sure	Agree	Strongly Agree	Mean	Standard Deviation
Appreciative recreationists	45.0%	46.6%	5.5%	2.0%	1.0%	1.67	0.75
Intensive recreationists	19.9%	53.6%	13.2%	12.6%	0.7%	2.21	0.93
"National Forests should be entirely devoted to wildlife diversity and nature protection with recreation allowed only where compatible with wildlife."							
	Strongly Disagree	Disagree	Neutral/ Not Sure	Agree	Strongly Agree	Mean	Standard Deviation
Appreciative recreationists	12.4%	36.2%	9.4%	23.5%	18.6%	3.00	1.36
Intensive recreationists	29.8%	49.0%	6.0%	12.6%	2.6%	2.09	1.05
"National Forests should produce as much of all kinds of resources, like wildlife, timber and recreation, as possible, as long as producing any one resource doesn't eliminate the possibility of producing lots of any resources in the future."							
	Strongly Disagree	Disagree	Neutral/ Not Sure	Agree	Strongly Agree	Mean	Standard Deviation
Appreciative recreationists	10.1%	19.2%	17.9%	43.0%	9.8%	3.23	1.17
Intensive recreationists	2.0%	9.9%	17.9%	57.0%	13.2%	3.70	0.89
Mean: 1=strongly disagree, 2=disagree, 3=neutral/not sure, 4=agree, 5=strongly agree							

Regarding the ecocentric philosophy, appreciative recreationists were far more supportive than intensive recreationists were (Figure 4.2). They showed more difference from intensive recreationists than in the other forest management philosophies (Table 4.1). A majority of intensive recreationists disagreed or strongly disagreed with this ecocentric philosophy, while 42% of appreciative recreationists agreed or strongly agreed with it.

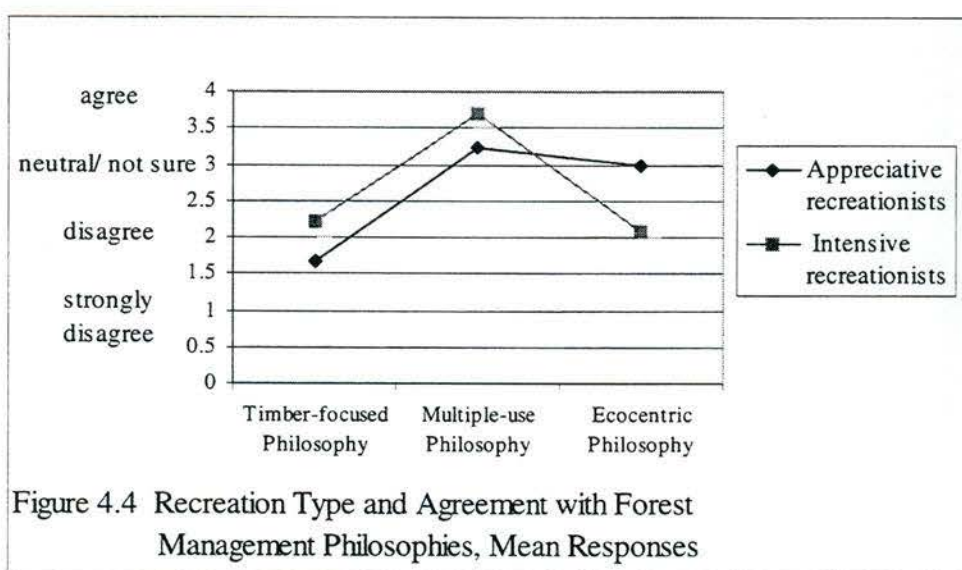
Figure 4.3 shows that intensive recreationists favored the multiple-use philosophy more than the appreciative recreationists. Once again, this difference was statistically significant (Table 4.1). There was an equal percentage of respondents in both groups



who were neutral/not sure regarding multiple-use, and this percentage, 17.9%, was relatively high (Table 4.2).

Among the philosophies, the greatest support was for the multiple-use philosophy, followed by the ecocentric philosophy, with the timber-focused philosophy having the least support. The multiple-use philosophy was on average, supported by both types of recreationists. The ecocentric philosophy received an average “neutral” support from

appreciative recreationists, and on average, was not supported by intensive recreationists. The timber-focused approach was not supported by either of the recreation types, when examining the means (average). Figure 4.4 shows that the mean response of appreciative recreationists' philosophy was more favorable than the intensive recreationists regarding the ecocentric philosophy, whereas the intensive recreationists showed more favorable response to timber-focused and multiple-use philosophies.

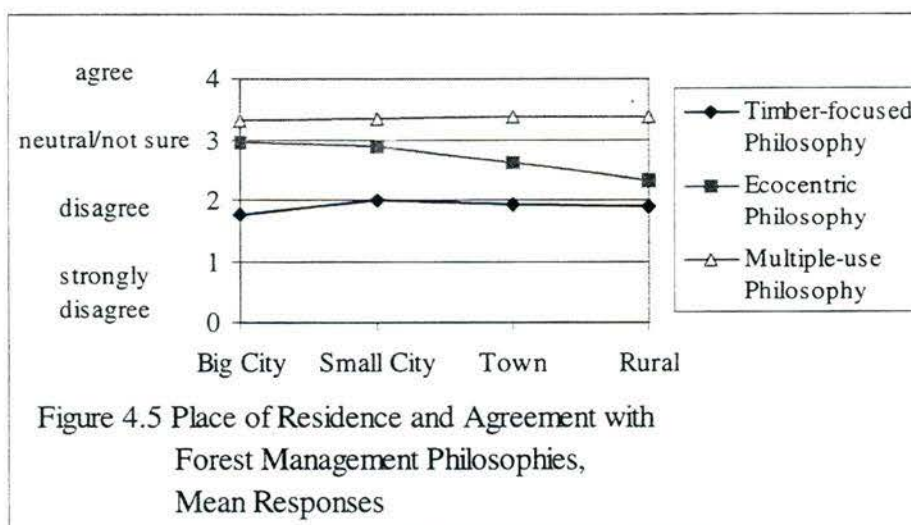


Place of Residence and Forest Management Philosophies

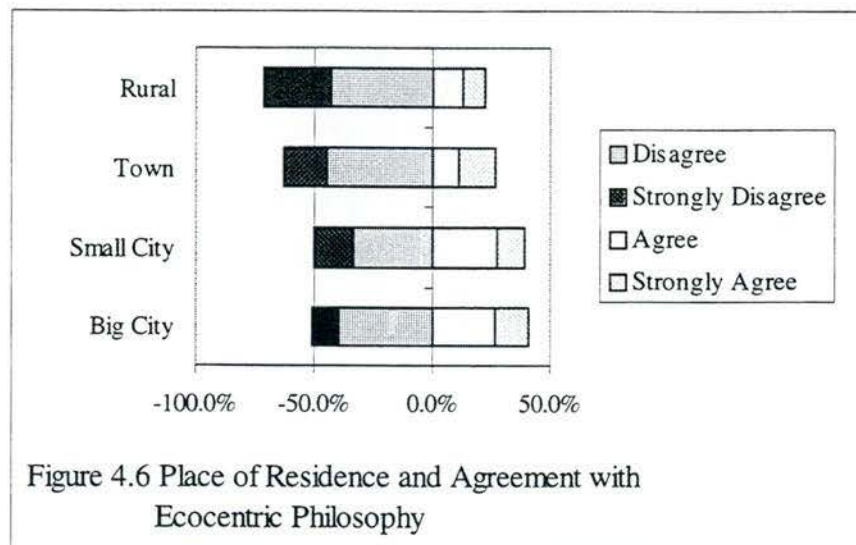
Place of Residence showed the least differences between groups in its relation to support for forest management philosophies, although there were many statistically significant differences between groups (Table 4.3).

of the residence types were similar in their rejection of this philosophy (Table 4.4).

Figure 4.5 shows this, with the means forming nearly a straight line on or below the “2,” (also known as “disagree”).



Place of Residence showed the most difference in regard to the ecocentric philosophy. Big city respondents showed the greatest support for this philosophy followed by small city respondents, then town and rural, in a gradient (Figure 4.6). There was statistical significance in the difference between big city and town respondents, as well as big city and rural (Table 4.4), with big city showing more support for the ecocentric approach. Small city respondents were significantly different from both rural and town respondents (Table 4.4). The overall trend showed more support for the ecocentric philosophy from the more urban (big city and small city) than from rural or town people.

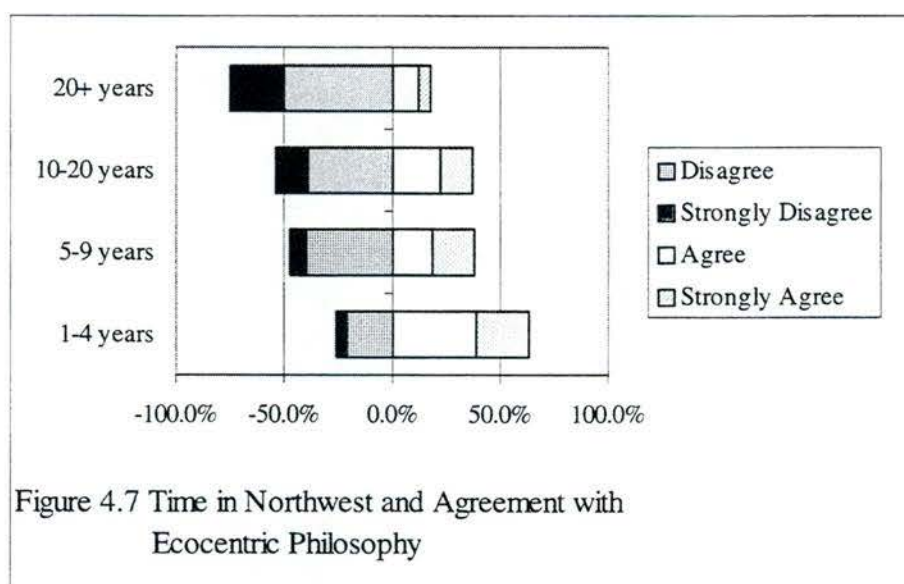


There was little difference across perceived Place of Residence regarding the multiple-use philosophy (Table 4.4). Figure 4.5 shows a nearly straight line for the multiple-use philosophy across Places of Residence. The only statistically significant difference lies between small city and town respondents (Table 4.3). Small city respondents supported this multiple-use philosophy less, having a larger percentage that disagreed or strongly disagreed with it (Table 4.4). Big city respondents showed a large percentage of respondents neutral/not sure about this philosophy (20.8%).

Time in Northwest and Forest Management Philosophies

Overall, Time in Northwest revealed the greatest differences among its subgroups of any of the independent variables analyzed. Regarding the timber-focused philosophy, long-timers (20+ years) were unique, compared to newcomers (1-4years), as well as the new settlers (5-9 years) (Table 4.5). These statistically significant relationships revealed

Statistically significant differences occurred between all pairs of groups, with the exception of new settlers (5-9 years) versus established settlers (10-20 years) regarding the ecocentric philosophy. Figure 4.7 illustrates this gradient, with over 75% of the longtimers disagreeing or strongly disagreeing with the ecocentric philosophy. This contrasts sharply with the 63.1% of newcomers (1-4 years) agreeing or strongly agreeing with this philosophy (Table 4.6).



The multiple-use philosophy also showed statistically significant differences across all groups, except newcomers (1-4 years) versus new settlers (5-9 years) new settlers (5-9 years) versus established settlers (10-20 years) (Table 4.5). Figure 4.8 shows a gradient similar to that found for the ecocentric philosophy, only in reverse. Newcomers (1-4 years) showed the least support for the multiple-use philosophy, while longtimers (20+ years) were most supportive of the multiple-use philosophy.

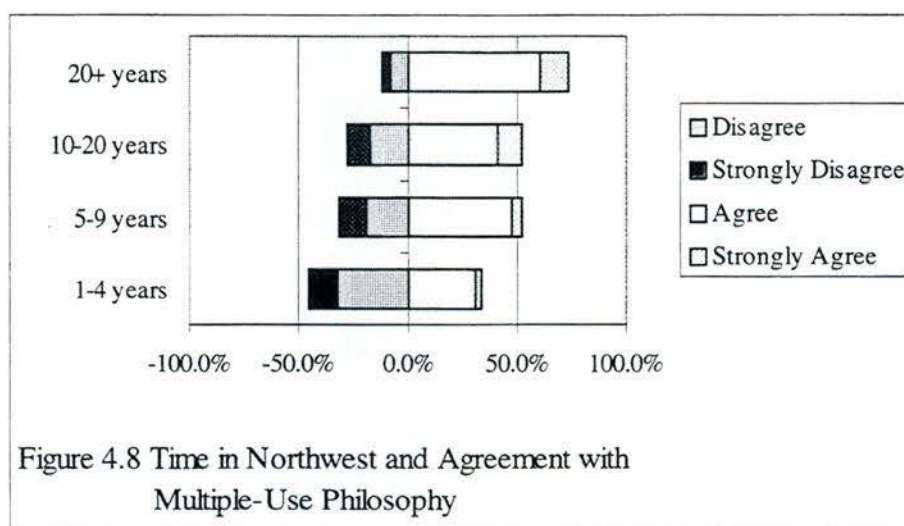
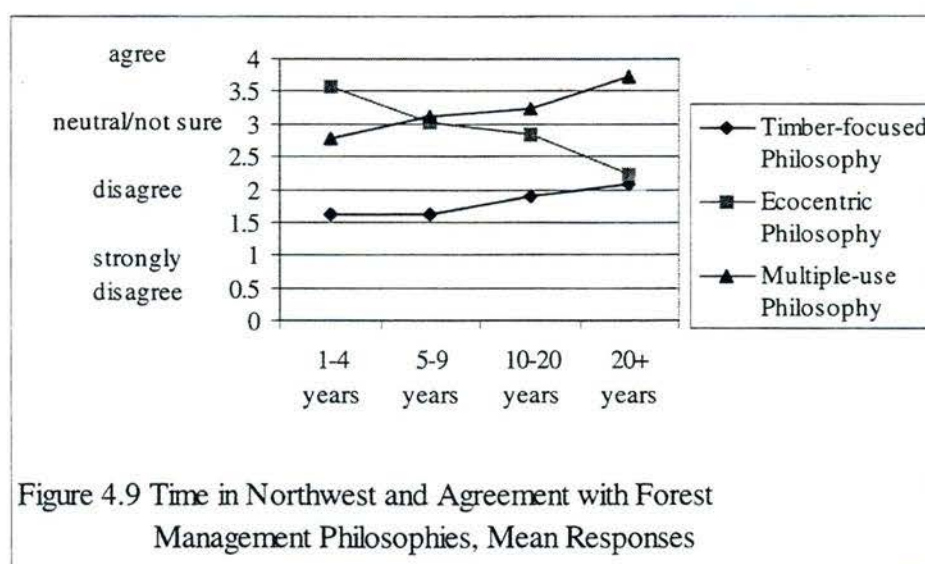


Figure 4.9 shows means for each of the subdivisions. While established settlers (5-9 years) show similar support for both the multiple-use philosophy and the ecocentric philosophy, the points diverge on either side. Newcomers (1-4 years) have a mean that shows their strongest support for the ecocentric philosophy.



Trust of the Forest Service

Recreation Type and Trust of the Forest Service

Overall, there was little trust of the Forest Service to manage public land. Intensive recreationists were more trusting of the Forest Service than the appreciative recreationists were (Figure 4.10), with statistical significance (Table 4.7). More appreciative recreationists indicated they did not trust the Forest Service to manage public land (indicated by agreeing or strongly agreeing with the statement in Figure 4.10), than those who did (indicated by disagreeing or strongly disagreeing).

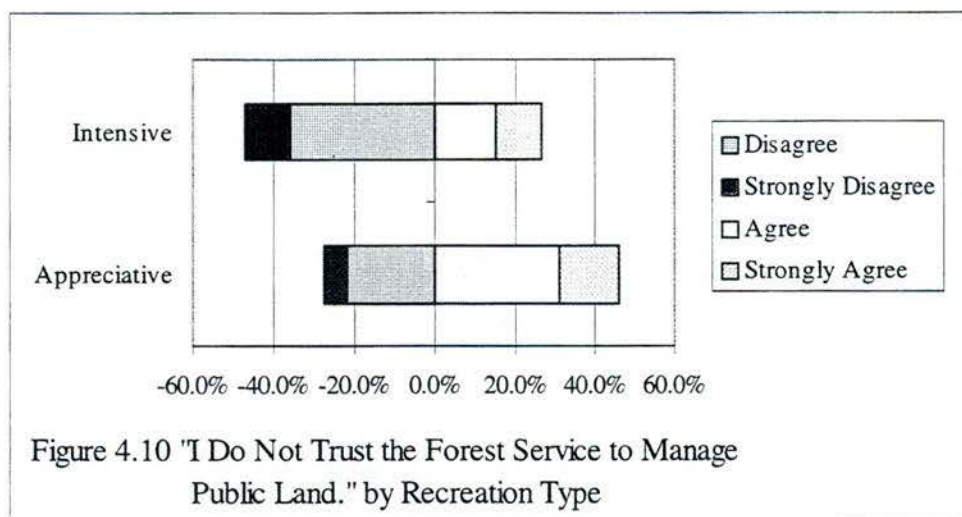
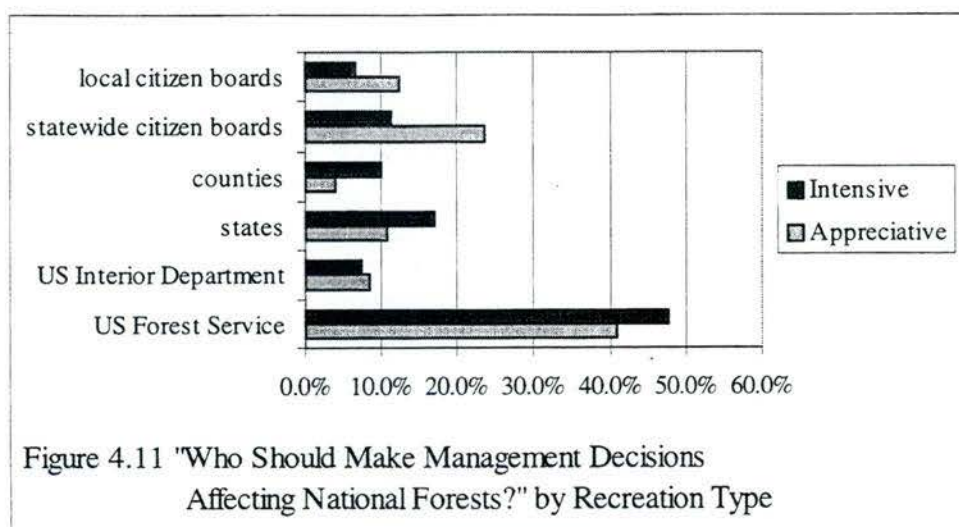


Table 4.7 Chi-Squares and p-Values for Trust of the Forest Service
To Manage Public Land and Who Should Manage
National Forest Lands

Trust of Forest Service to Manage Public Land			Who Should Manage?	
Recreation Type	ChiSq	p-value	ChiSq	p-value
Passive vs.Intensive	*22.793	0.000	*22.112	0.000
Place of Residence	ChiSq	p-value	ChiSq	p-value
Big city vs. Small City	4.692	0.320	7.642	0.177
Big city vs. Town	4.676	0.322	*20.257	0.001
Big city vs.Rural	7.952	0.093	*39.455	0.000
Small city vs.Town	5.677	0.225	5.907	0.315
Small city vs.Rural	8.345	0.080	8.122	0.150
Town vs.Rural	9.061	0.060	7.584	0.181
Time in Northwest	Chisq	p-value	ChiSq	p-value
1-4 years vs.5-9years	8.772	0.067	3.477	0.627
1-4 years vs. 10-20 years	*12.668	0.013	8.663	0.123
1-4 years vs. 20+ years	*24.873	0.000	*13.567	0.019
5-9 years vs. 10-20 years	6.365	0.174	6.873	0.230
5-9 years vs. 20+ years	*12.539	0.014	9.570	0.088
10-20 years vs. 20+ years	0.946	0.918	3.781	0.581

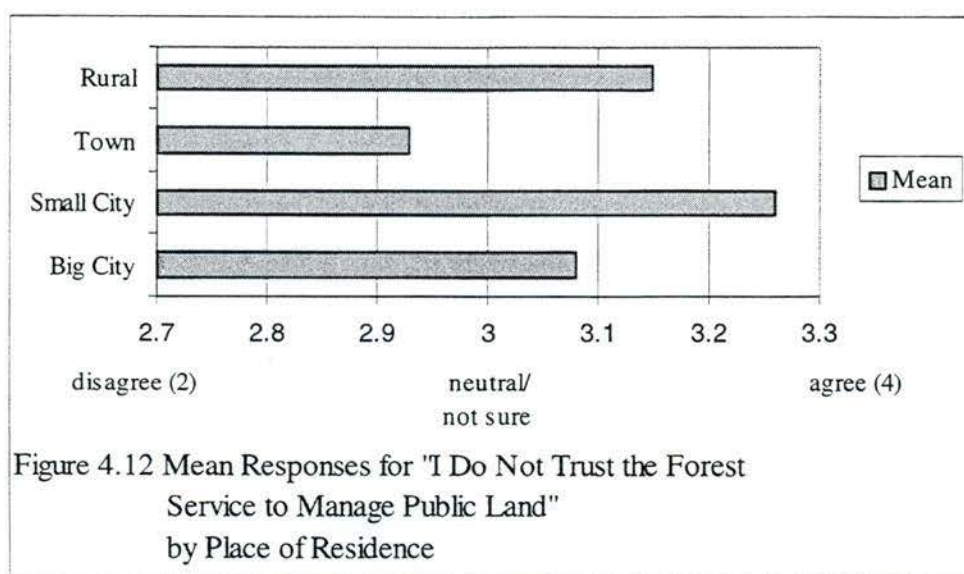
*Asterisk indicates statistically significant relationship

When asked, “Who should make management decisions affecting national forests?,” both recreation types had their respective highest percentages suggesting the Forest Service (Figure 4.11). Appreciative recreationists showed their second highest percentage as “statewide citizen boards,” with 23.8% support. Intensive recreationists showed “states” as their second most favored management agency with 17.2% (Figure 4.11). “Counties” were the least popular response among appreciative recreationists, with only 3.9% suggesting them. All differences between appreciative and intensive recreationists were statistically significant (Table 4.7).



Place of Residence and Trust of the Forest Service

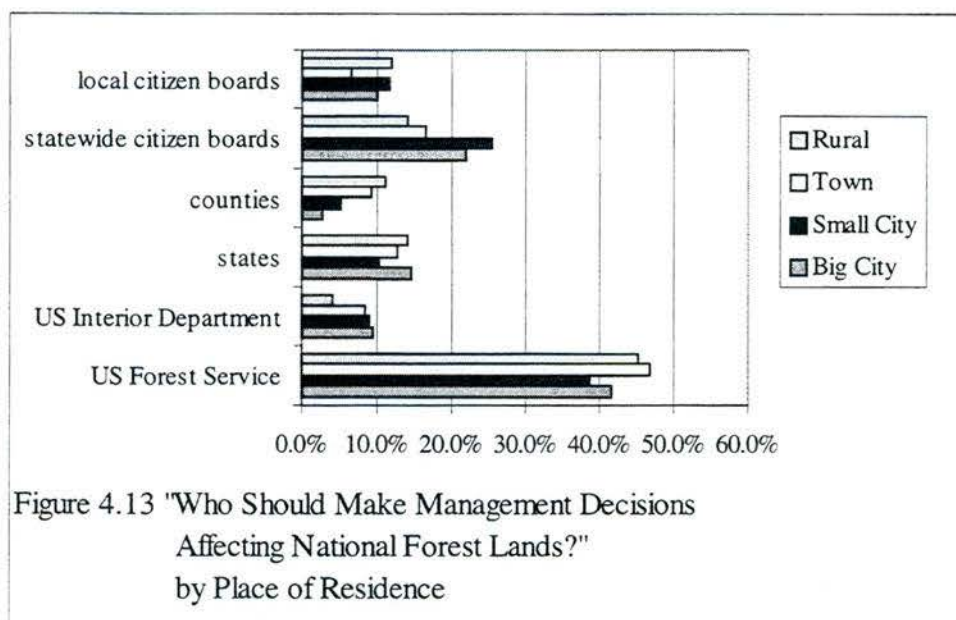
There were differences shown by the mean responses for each of the reported Places of Residence (Figure 4.12). Town residents showed, on average, overall trust of the Forest Service to manage public land, while all of the other places of residence had means indicating a slight lack of trust. Small city residents showed the least trust, followed by rural residents. These relationships were not statistically significant, however (Table 4.7).



When asked, "Who should make management decisions affecting national forest lands?," every Place of Residence subgroup had its highest percentage supporting the "US Forest Service" (Figure 4.13). "Statewide citizen boards" received the second highest percentage in every subgroup, with rural respondents having a percentage there equal to that for "states" as the managing agency (14%). "Counties" received very low percentages overall, with big city respondents having the smallest percentage supporting counties (2.6%). Rural respondents had the highest percentage supporting "Counties," which was only 11% (Table 4.8). Some statistically significant differences occurred between big city and town respondents, as well as big city and rural respondents (Table 4.7).

Table 4.8 "Who Should Make Management Decisions Affecting National Forest Lands?"

	US Forest Service	US Interior Department	states	counties	statewide citizen boards	local citizen boards
<u>Recreation Type</u>						
Appreciative	40.7%	8.5%	10.7%	3.9%	23.8%	12.4%
Intensive	47.7%	7.3%	17.2%	9.9%	11.3%	6.6%
<u>Place of Residence</u>						
Big City	41.7%	9.4%	14.6%	2.6%	21.9%	9.9%
Small City	38.7%	8.8%	10.2%	5.1%	25.5%	11.7%
Town	46.8%	8.3%	12.8%	9.2%	16.5%	6.4%
Rural	45.0%	4.0%	14.0%	11.0%	14.0%	12.0%
<u>Time in Northwest</u>						
1-4 years	26.2%	11.5%	9.0%	4.1%	29.5%	19.7%
5-9 years	40.9%	9.1%	7.6%	9.1%	21.2%	12.1%
10-20 years	50.5%	9.5%	10.5%	4.2%	21.1%	4.2%
20+ years	48.4%	5.5%	17.2%	7.0%	14.5%	7.4%



Time in the Northwest and Trust of the Forest Service

Time in Northwest showed statistically significant differences in trust between long-timers (20+ years), newcomers (1-4 years) and new settlers (5-9 years). Newcomers

(1-4 years) were also statistically significantly different in trusting the Forest Service than established settlers (10-20 years) (Table 4.8). A general pattern is shown on Figure 4.14, suggesting that the less time spent in the Northwest (between 1 and 9 years), the greater the distrust of the Forest Service to manage public land. New settlers (5-9 years) were the least trusting, with 53% either agreeing or strongly agreeing with the statement, "I do not trust the Forest Service to manage public land." While newcomers (1-4 years) had over 48% agreeing or strongly agreeing that they did not trust the Forest Service, there was a high percentage (33%) of those respondents who were "neutral or not sure" about this question (Table 4.9). The newcomers (and new settlers) to Oregon and Washington seem to be bringing a distrust of the Forest Service.

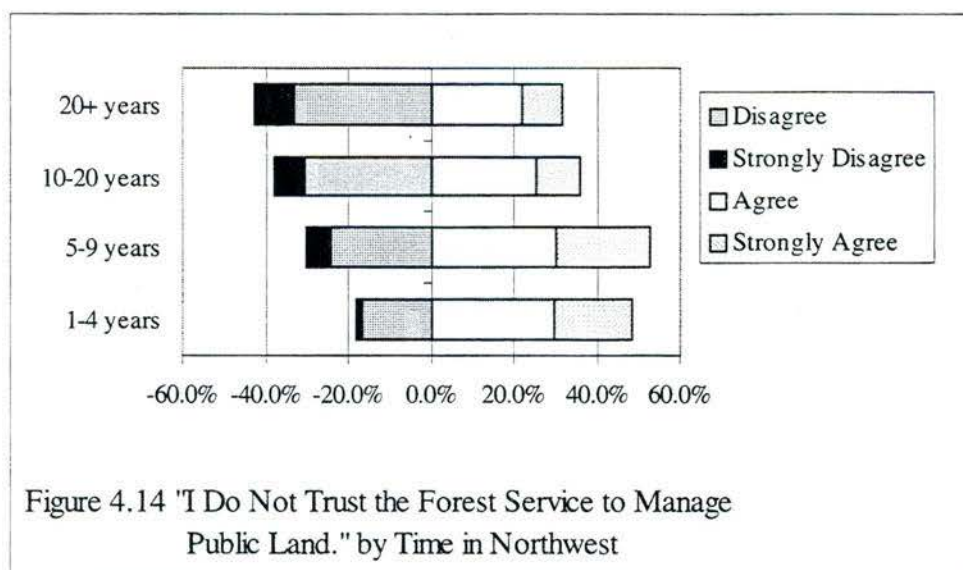
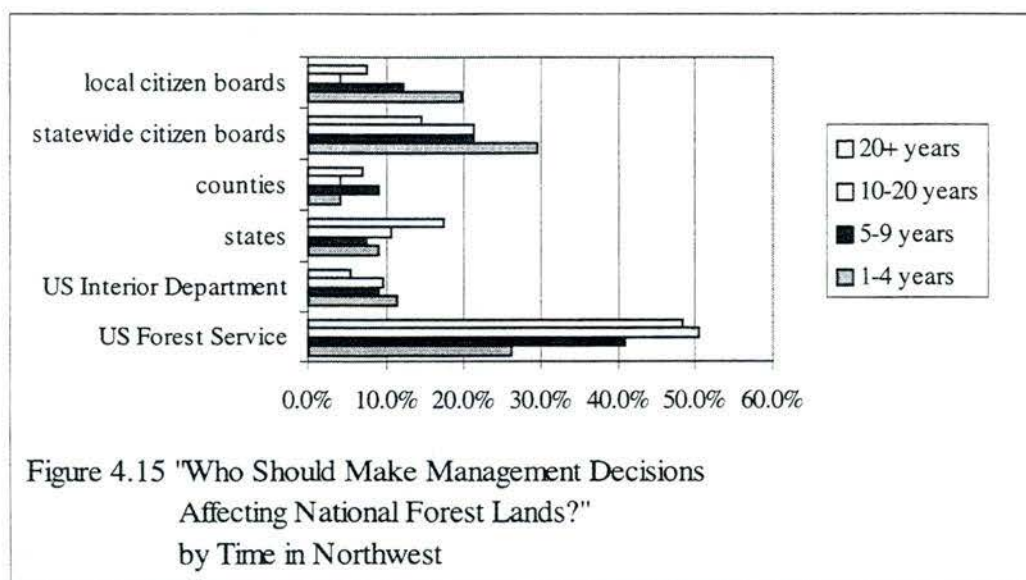


Table 4.9 "I Do Not Trust the Forest Service to Manage Public Land" by Recreation Type, Place of Residence, and Time in the Northwest

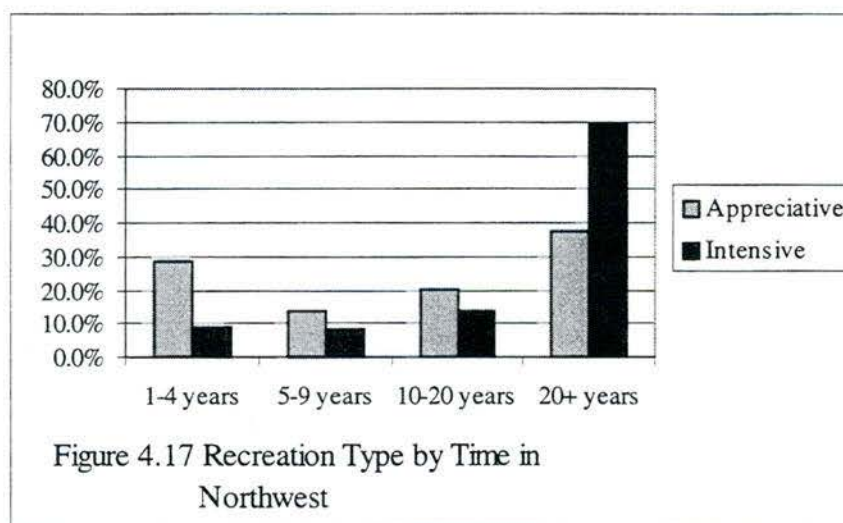
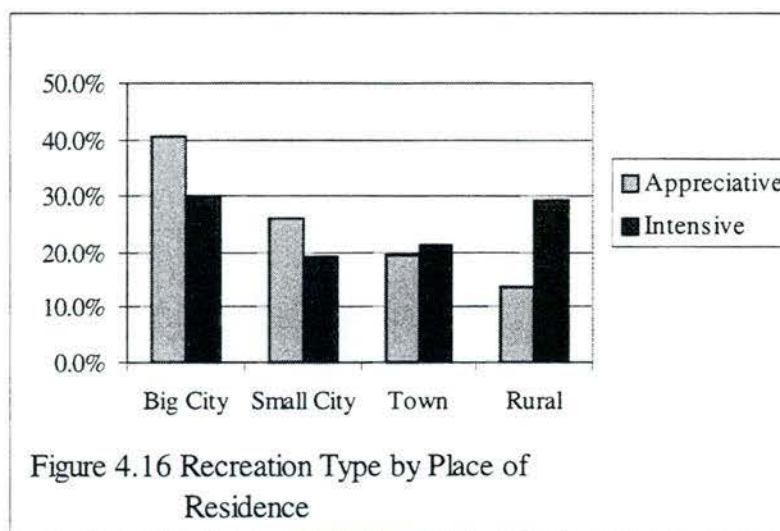
	Strongly Disagree	Disagree	Neutral/ Not Sure	Agree	Strongly Agree	Mean	Standard Deviation
<u>RecreationType</u>							
Passive	5.5%	21.8%	26.4%	30.9%	15.3%	3.29	1.13
Intensive	11.3%	35.8%	26.5%	15.2%	11.3%	2.79	1.17
<u>Place of Residence</u>							
Big city	6.8%	26.0%	30.2%	26.6%	10.4%	3.08	1.10
Small City	3.6%	27.7%	24.1%	28.5%	16.1%	3.26	1.14
Town	8.3%	35.8%	21.1%	24.8%	10.1%	2.93	1.16
Rural	11.0%	22.0%	28.0%	19.0%	20.0%	3.15	1.28
<u>Time in Northwest</u>							
1-4 years	1.6%	16.4%	33.6%	29.5%	18.9%	3.48	1.03
5-9 years	6.1%	24.2%	16.7%	30.3%	22.7%	3.39	1.25
10-20 years	7.4%	30.5%	26.3%	25.3%	10.5%	3.01	1.13
20+ years	9.8%	32.8%	25.8%	21.9%	9.8%	2.89	1.15
Mean: 1=strongly disagree, 2=disagree, 3=neutral/not sure, 4=agree, 5=strongly agree							

Newcomers (1-4 years) had the highest percentage of respondents suggesting that "statewide citizen boards" should be the agency responsible for making management decisions affecting national forests, instead of the "US Forest Service" (Figure 4.15). Every other group, including new settlers (5-9 years), had the highest percentage of respondents suggesting the US Forest Service as the proper agency. New settlers (5-9 years) and established settlers (10-20 years) had the second highest percentage recommending "statewide citizen boards," as the governing body to make management decisions affecting national forests. Newcomers (1-4 years) versus long-timers (20+ years) were statistically significant in their differences (Table 4.7). Newcomers showed low support for the Forest Service and higher support for "statewide citizen boards," and long-timers displayed greater support for the Forest Service and a smattering of support elsewhere (Figure 4.15).

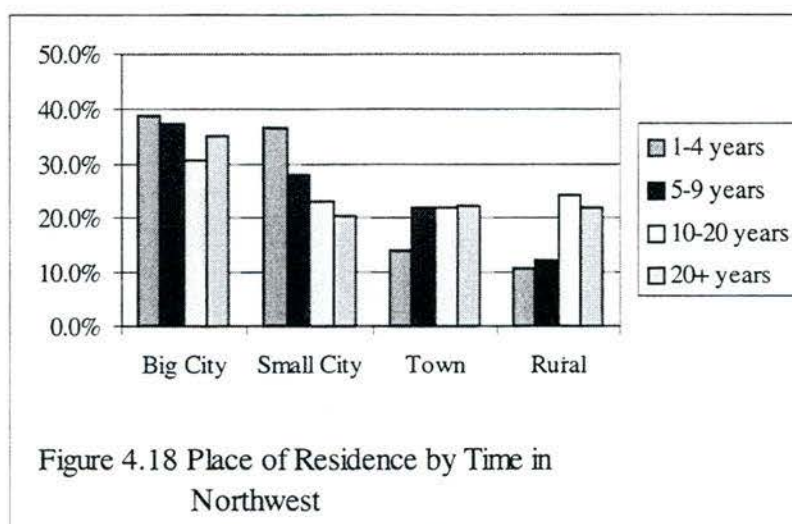


Relations Among Independent Variables

Given the above relationships, the greatest support was for the multiple-use philosophy, followed by the ecocentric philosophy, with timber-focused philosophy having the least support. While appreciative recreationists tended to show more support for the ecocentric philosophy, Figure 4.16 reveals the gradient for recreation types across Place of Residence. More appreciative recreationists were shown to reside in big cities and small cities, while more intensive recreationists were shown to reside in towns and rural areas. Of the long-timers (20+ years), a great percentage of them were intensive recreationists (Figure 4.17). There was a larger percentage of appreciative recreationists among newcomers (1-4 years), new settlers (5-9 years) and established settlers (10-20 years). Of the newcomers (1-4 years), nearly three times as many were appreciative recreationists (Figure 4.17).



Newcomers (1-4 years) showed their greatest percentage in big cities and small cities (Figure 4.18), with very low percentages in both towns and rural areas. New settlers showed a similar pattern, with slightly lower percentages in big cities and small cities, and slightly greater in towns and rural areas than the newcomers (1-4 years).



CHAPTER V

DISCUSSION

Limitations

Many statistically significant relationships have been demonstrated in this study. However, there are several caveats in interpreting the results. It was already stated that this was not a poll sample, but the quasi-stratified sample used was intended to capture a representation of residents likely to participate in national forest politics. This study can assist with assessing social acceptability of national forest policy. However, a different instrument to measure public opinion would be more in line with the tenets of the emerging ecosystem management paradigm, one that involved a broader spectrum of respondents (Cortner and Moote 1999). In addition, the sample for this analysis was carved out of a larger sample to include respondents who answered questions regarding recreation participation, place of residence, and time in the northwest, as well as optional questions regarding national forest management philosophies. These issues have biased the data. Nonetheless, the results do suggest a direction for, and raise important points about the management of our national forests. Responses may have been influenced by a number of other factors, including the order of the questions, the respondents'

psychological state when filling out the survey, recent media events, interpretation, and level of understanding of the issues.

Recreation Type and Perspectives on National Forest Management

This study suggests that there are differences in attitudes toward national forest management based on type of outdoor recreation preference, which may be explained by underlying values and motivations for recreating in national forests. Those respondents supporting ecocentric philosophies (and therefore policies) would more likely choose appreciative recreation activities, because the values associated with wildlife preservation and nature protection, at the expense of recreation opportunities, are more likely to be held by those choosing lower impact and "appreciative" activities in the first place. Appreciative recreationists are likely to hold a combination of historical/cultural, preservation, aesthetic, therapeutic, or spiritual values, which can be better satisfied through an approach that emphasizes wildlife diversity and nature protection. Behavior which seeks to walk softly on the land is more likely to support policies that encourage protection of nature. Intensive recreationists were more likely to support the multiple-use, sustained yield (status-quo) philosophy, which might be explained by their inherently utilitarian motivations (thrill-seeking, subsistence, etc.) for recreating in the forests. A high percentage of both recreation types neutral or not sure about supporting the multiple-use, sustained yield philosophy may suggest a declining support of this approach. Appreciative recreationists were less supportive of multiple-use, probably because of how this approach has been demonstrated by the Forest Service, emphasizing

the extraction of resources as the dominant use, which does not agree with appreciative values.

Another explanation for the differences might involve desired settings for recreation. Virden and Schreyer (1988) found backpacking specialization (an appreciative activity) to be positively correlated with natural settings and negatively correlated with signs of resource extraction. Many intensive activities can move more rapidly from setting to setting, and perhaps the presence of a healthy forest ecosystem is secondary to the thrill of the activity. In addition, consumptive (as a sub-group of intensive) recreationists are more likely to regard forests as a source of extractable commodities, and may therefore view national forest management in that framework.

Aesthetic values, in particular, have been shown to rate high in importance by the public (Manning et al. 1999), and may play a key role in differences. Clearcuts associated with timber extraction have left scars on the landscape, contributing to the formation of opinions about forest management. Although a greater percentage of intensive recreationists supported a timber-focused management approach than appreciative recreationists, this philosophy was supported by only a very small percentage of the population. Kearney et al. (1999) demonstrated that even timber industry professionals have a low regard for a solely timber-focused approach, perhaps as a result of timber harvest decline in the recent past, or new awareness that single-use philosophies are not morally or politically viable. Perhaps this also has to do with the high regard for an aesthetic value that many people are said to hold (Manning et. al 1999). Gobster (1995) has described an ecological aesthetic, which may help explain appreciative recreationists'

higher support for an ecocentric philosophy than intensive recreationists. Through appreciative activity (by its often contemplative and intentional low-impact nature), it is more likely that someone might develop an ecological aesthetic. Manning et al. (1999) found a high importance for ecological values in the East, which may have increased in prevalence in the Northwest, as well.

Specialization in an activity (Bryan 1977) as well as level of recreation participation (McFarlane and Boxall 1996) have also been offered as explanations for differences between recreation types. These were not explored in this study. Generally, it has been suggested that as specialization within an activity increases, so will pro-environmental attitudes (and perhaps support for more ecocentric national forest management approaches). McFarlane and Boxall (1996) showed that campers most familiar with an area were least supportive of traditional timber management. It is possible that the appreciative recreationists in this study were more specialized in their recreation, accounting for the differences, but this explanation is not likely.

The direction of cause-and-effect regarding recreation type and environmental attitudes has not been thoroughly explored (Theodori et al. 1998). Jackson's (1986) study suggested the possibility of environmental attitudes influencing the types of outdoor recreation preferred (instead of outdoor recreation influencing environmental attitudes). The national trends for recreation behavior may support this idea, with consumptive activities (hunting and fishing) declining, and non-consumptive (appreciative) outdoor recreation activities such as bird watching, backpacking, and hiking on the rise (Cordell et al. 1995). As values and opinions regarding the

environment change, people change their outdoor recreation behavior accordingly. It would be expected that if respondents in this study had formed ecocentric attitudes toward national forest management, they would be more likely to participate in appreciative activities. However, over 15% of intensive recreationists agreed or strongly agreed with managing national forests for wildlife diversity and protection of nature, suggesting that certain intensive recreationists were willing to give up their preferred activity for the benefit of wildlife diversity and nature protection. I propose that underlying values contribute simultaneously to national forest management philosophy and types of recreation activities preferred. As discussed, Zwick and Solan (1996) showed that non-consumptive recreationists displayed more societal orientation (a focus on others) in their values, while consumptive recreationists were more concerned with values regarding personal security (a focus on self). This societal/self difference may account for the lack of support for a non-utilitarian approach among intensive (including consumptive) recreationists, although it is difficult to suggest that a focus on others would include the non-human world.

This study showed that while use of national forests for recreation is very important to many people, some believe it should only be accommodated where compatible with wildlife diversity and the protection of nature. Recreation impacts on forest ecosystems may some day be viewed as detrimental as mining or excessive timber harvests are now. Oeschlaeger (1995) suggested a Leopoldian land ethic when approaching forest recreation and warned against a recreation industry which destroys the very qualities it was intended to appreciate. Leopold (1948) wrote, "All conservation of

wildness is self-defeating, for to cherish we must see and fondle, and when enough have seen and fondled, there is no wildness left to cherish.” This has been described as “loving [our national forests] to death.” The use vs. preservation paradox is one that has been haunting the National Park Service for the past several decades (Sax 1980), and as forest recreation increases, this paradox will also impact the management of national forests.

Place of Residence and Perspectives on National Forest Management

Self-reported rural-urban differences suggest some differences in perceptions of forest management philosophies, contrary to Fortmann and Kusel’s (1990) conclusions. Considering urban to rural migrations and urban influences on rural values, it is not surprising that there was less difference regarding respondent-reported Place of Residence and its association with national forest management approaches. Nonetheless, there were differences shown which made certain groups stand out, and revealed suggestive patterns.

The most significant differences existed for the ecocentric approach, with self-reported urban (big city) people showing the most support, rural showing the least, and the other Places of Residence on a gradient of support. Most of the previous research has focused on Place of Residence and its association with environmental attitudes or behaviors.³ While urban environmental values may be influencing rural areas, the changes in overall environmental attitudes in rural areas do not appear to have reached

³ Steel et al. (1994) found no statistical significance for their urban variable and its association with views on national forest management.

equal support. The differences may be due to the fact that rural residents live closer to the natural resource base and are more likely to have a direct economic connection to it (as the stereotype suggests), otherwise known as the “extractive-commodity theory” (Tremblay and Dunlap 1978). Even though there has been a major shift in the economic structure in the rural western United States (McBeth and Bennett 1998), there continues to be a rural population who relies on natural resource extraction or production. Occupational differences within Place of Residence might shed some light on differences, examining how business telecommuters might differ from farmers in attitudes toward national forest management.

Self-reported big city residents were significantly less supportive of a timber-focused approach than town residents, maybe because towns have been less affected by urban to rural migration than rural areas. With over 85% of each sub-group having disagreed or strongly disagreed with a timber-focused approach, there was very little support for it overall. Big city, small city, and rural residents were similar in their attitudes toward a timber-focused approach, perhaps because of the importance that aesthetic values hold, previously mentioned.

The multiple-use, sustained yield approach continues to be the most supported of the philosophies surveyed across Places of Residence, perhaps because there are aspects of multiple-use (or multiple benefits) which people value. However, over twenty percent of big city residents were neutral or not sure about this approach, probably because of its inherent utilitarian perspective, and again because of perception of how this approach has been demonstrated in the national forests. The concept may not be entirely flawed, but its

implementation has been. Multiple benefits or values may be a necessary part of the redirection known as Ecosystem Management.

Fortmann and Kusel (1990) offer a different explanation for similarities in rural-urban values by suggesting the environmental attitudes were not brought by new urban migrants but have developed independent of the urban to rural migration. Rural residents had been less vocal, but urban migrants brought new voices to rural areas. They suggest that the power of the mass media and telecommunications has greatly influenced the development of pro-environmental attitudes in all areas, including rural areas. This study, however, suggests that while the rural residents do not support a timber-focused approach to managing national forests, they have not developed an ecocentric perspective as strong as that found in urban areas, in spite of exposure to the same media content.

Time in the Northwest and Forest Management Philosophies

Results pertaining to time in the Northwest showed the most telling differences, suggesting that newcomers are bringing new values to the Northwest, favoring an ecocentric approach far more than a multiple-use, sustained yield approach. This confirmed Hays' (1998) assertion that a new West is being forged, with new residents bringing new values that are changing the sociopolitical structure of the Northwest. As new residents move to the region for quality of life, a commitment to preserving that quality is evident. Consistent with expectations, more people seem to be moving to urban areas and engaging in appreciative recreation activities in the Pacific Northwest. While

there is no indication of where people are coming from, it is likely that many represent the more strongly biocentric national public examined in Steel et al.'s (1994) study.

The new, less extractive economy of the Pacific Northwest is requiring healthy forests to accommodate the new residents' values. These include aesthetic, therapeutic and spiritual values (with unblemished recreational opportunities), moral /ethical values (such as emerging biodiversity values), historical/cultural preservation values, and new economic values (such as clean water to be used in high-tech industry). Policy makers need to recognize these changes, and plan accordingly.

Trust of the Forest Service

Given the Forest Service's recent history, it was not surprising that there was little trust shown across most groups. As expected, appreciative recreationists trusted the Forest Service to make decisions affecting national forests less than intensive recreationists, maybe because appreciative recreationists are more likely to be preservation oriented (Jackson 1987). Kearney et al.'s (1999) findings suggested that perceptions of differences (between environmentalists and Forest Service employees) led to greater distrust of each other. A perception of differences may have resulted from real differences in values, at least between the Forest Service and those looking to have minimal impacts on the forest ecosystem. This may be changing, however, as the Forest Service moves ahead with Ecosystem Management, depending on its implementation.

Town residents uniquely showed an overall mean indicating trust of the Forest Service, while other Places of Residence showed overall distrust, perhaps because town residents are holding onto resource-extractive values due to stronger community

affiliation which allows the perpetuation of these values. It should be reiterated that Town residents were significantly different in their views toward a timber-focused approach than the other reported Places of Residence (above). The overall difference in trust, however, was minimal.

These results are not in agreement with research by Alm and Witt (1997), nor with the postulations of this study which predicted the trust of the Forest Service to be highest in urban (big city and small city) areas, lower in rural areas and small towns. Respondents who have lived in the Northwest for less time showed greater distrust for the Forest Service than long-timers, perhaps because of their different values which clash with the traditional values of the Forest Service. It is likely that the newcomers, bringing their ecocentric values have been opposed to Forest Service management due to the agency's inability to fulfill its multiple-use, sustained yield mission. Steel et al.'s (1994) research suggested that the national public was more biocentric in their views than the Oregon public. It could be that the newcomers' prior removal from the situation has encouraged distrust, as their opinions were informed more by the media. At the same time, their trust may have dropped off after having moved to the region. The Forest Service's focus on timber above all other "uses" of the forest in the recent past may have impacted the trust of the newcomers to a great degree. Perhaps there is a way to address this lack of trust.

Addressing Trust

The trust of the Forest Service needs to be addressed in order for the agency to effectively implement Ecosystem Management. Unless the Forest Service can reach out with new techniques to better involve the public in decision making, their trust is not likely to improve. They need to find new ways to distribute important information, including research findings, to ensure an informed public (Clark and Stankey 1994). The Forest Service has recognized the need for scientific and technical review processes, which might contribute to improved trust (USDA, COS 1999). Tuler and Webler (1999, 437) point out that "it is now widely accepted that members of the public should be involved in environmental decision-making," and suggest some components for a "good" process. Without changes, the perpetuation of old values is encouraged, leading to more conflict, continued polarization, and less trust. To add to the challenge, the Forest Service needs to do this within the law, and within the budget determined by Congress. Clark et al. (1999, 81) have suggested that "actions will be evaluated, not slogans or labels."

Who Should Make Management Decisions Affecting National Forests?

Despite the lack of trust mentioned above, the Forest Service received the highest percentage of response when given the list of alternative managing agencies, perhaps because the Forest Service is the right agency with the wrong approach. However, newcomers (1-4 years) suggested that "statewide citizen boards" would be the preferred alternative, perhaps because they were searching for an option that hadn't been tried and

they had a limited range to choose from. This corresponds with their higher level of distrust for the agency.

There was little evidence of a "County-supremacy" movement among any sub-group within this population, as counties received low support throughout. However, there was a great dispersal of responses indicating the preference for more local control over national forests. This varied greatly by sub-groups, and hovered mostly around fifty percent of respondents supporting a federal agency and fifty percent supporting a new local agency to make national forest management decisions. Visioning a new agency to manage the national forests may have been difficult to do in a survey such as this. In addition, there were only six options to choose from, with no place to comment on how or why a new agency was needed.

CHAPTER VI

CONCLUSIONS AND IMPLICATIONS

When environmentalists confronted Forest Service Personnel, the new forest confronted the old. This was not just a planning process, but an historical process. It had many features common to long-term historical change; new and old were in juxtaposition and in tension. By focusing on this drama of old and new, current controversies can be better understood. (Hays 1998)

Choosing among appropriate national forest management philosophies is not the purpose for this study. Rather, this study builds on former research, and investigates differences between social sub-groups which may be useful for guiding policy. Nonetheless, it is important to look at overall support for each of the approaches to national forest management considered. It is clear that there is little support for a timber-focused philosophy regarding national forest management in the Pacific Northwest. This comes as no surprise, as even the agency is shifting further away from such an approach. Multiple-use, sustained yield seemed to have the most public support of the philosophies studied, but as we have seen, this approach has not been politically or socially successful. If this approach is going to be successful, it must be redefined to include more values, be true to those values, and recognize the emerging population who holds more ecocentric values. The public might support Ecosystem Management ideas more than multiple-use,

sustained yield if different questions were asked to reflect prospects for future, not just past legislative ideas.

This study should not be used as a fixed picture of values in the Pacific Northwest. Values derived from sub-culture are always slowly changing and evolving. The attitudes and perspectives measured in this study do, however, suggest that many changes are needed in the way national forests are managed, and the approach the Forest Service uses to involve the public in the process (FEMAT 1993).

As we enter a new century, the symbolic need for change becomes more apparent. Many authors have pointed to our being in a similar position in public lands management as we were at the end of the last century. What emerged then was a paradigm for managing public lands which was successful up until the end of the second World War. As we move into another era, with major demographic changes taking place in the Pacific Northwest, and changes in the political context of national forests, it is evident that change in our public lands management agencies needs to continue. The direction they choose to go needs to be informed by public values and attitudes, as described in this study.

Ecosystem Management, the Forest Service's latest guiding framework, is beginning to work toward recognizing the emergence of ecocentric values. As new residents move to the Pacific Northwest (and young people grow up and participate), the emergence of the ecocentric paradigm may well be one of the most important social factors influencing national forest management politics. The Forest Service has recently declared that its mission is the health of our national forests (Barnard 1999b). The

strategy for getting from here to there should provide a unified theoretic framework that understands a range of values that are increasingly demanded.

Research Needs

This study points to many more questions. Different social aspects of Ecosystem Management should be explored, such as how people wish to be involved the process. The reasons people articulated for distrust of the Forest Service could better define better goals for their involvement. It would be useful to examine a wider range of forward-looking national forest management philosophies to gain better insight into acceptability of options for Ecosystem Management, as several alternatives have been proposed and encouraged, ranging from anthropocentric to ecocentric.

It would be beneficial to see how information about particular management decisions provided to forest stakeholders is related to acceptability of forest management practices. This information will be critical as approaches to national forest management evolve. Information on ecological processes might be necessary to inform the development of an ecological aesthetic (with aesthetic values possibly accounting in part for differences in acceptability of national forest management approaches), and effective strategies need to be explored.

The variables examined in this study might be studied differently. A deeper exploration of motivations for recreating in national forests would provide more insight into reasons for differences in management preferences between recreation types. It would also be useful to examine how restrictions on recreation might be received, as

increased users and necessary changes will result in increased restrictions. To better understand differences in perceptions of national forest management between rural and urban residents, occupational differences of those living in rural areas should be examined. Lastly, a follow up study to examine changes in attitudes over time, as the demographic composition of the Pacific Northwest continues to change, will be necessary.

Final Thoughts

We may not have all the answers for all of the questions regarding the best way to manage for wildlife diversity and nature protection in our national forests. In order to begin approaching this issue, it is important to recognize changing trends and the coming of a more ecocentric view of managing public lands. This should not come at the expense of local communities, who must be involved in the process by offering local knowledge to help manage the forest ecosystem. This is a process that should be shared by all community types, and forest-users. This study did not make attempts to address economic considerations of resource-dependent communities, nor global economic impacts. This study only looked at human perceptions of how to treat public wild lands. Other generations were not surveyed. More importantly, the non-human community members were not consulted.

The situation we are in is an historic problem, not particular to this time or place. Appropriate management or mismanagement of natural resources has led to the rise and fall of many civilizations. The Pacific Northwest is an area that has led the United States

concerning forest issues in recent history. There are many directions that Ecosystem Management might take, including a new slogan for an old paradigm, old ideas with a new framework, or an entirely new direction for national forest management. If the Forest Service, in their implementation of Ecosystem Management, adopts a more ecocentric approach to managing national forests, then the larger community will not be dismissed, including non-human life.

APPENDIX A

SURVEY

Please answer the following questions:

1. Does, or has, your work to earn a living take you into national forests?

___ yes ___ no -- skip to question 2

If you checked yes above, what are the two job tasks you most often have done in national forests?

Most frequent job task: _____ Second most frequent job task: _____

2. Do you ever visit national forests or wilderness areas for recreation?

___ yes ___ no -- skip to question 6

If you checked yes above, what are your top two favorite recreation activities in national forests?

Favorite activity: _____

Second favorite activity: _____

3. When you visit national forests for recreation, what is most important to you in enjoying yourself?
(Please check up to but no more than five items:)

___ scenic beauty	___ peace and quiet
___ seeing wildlife	___ exercise
___ bagging an animal	___ catching fish
___ socializing with friends	___ escaping work or city
___ improving the forest	___ sunshine and fresh air
___ collecting forest products	___ collecting nature specimens
___ motorized exploration	___ muscle powered exploration
___ personal challenge	___ risk taking or thrill seeking
___ solitude	___ learning about nature
___ testing ORV or boat	___ rest
___ avoiding other people	___ watching other people
___ experiencing history	___ other: _____

4. An ideal place you might visit for recreation in a national forest would...
(Please check just one best choice:)
- ☐ be easy to reach by road or motorboat.
 - ☐ require a short walk from your car or motorboat.
 - ☐ require an extended hike or boat paddle.
5. When you visit national forests for your favorite recreation activity, how many people outside your party would you prefer to encounter?
(Please check just one best choice.)
- ☐ It doesn't matter how many people I encounter.
 - ☐ I prefer to encounter very few other people.
 - ☐ I don't mind encountering a moderate number of other people.
 - ☐ I don't mind encountering lots of other people.
6. When you visit, work in, or just pass through national forests, how much do you prefer to be in what looks to you like a natural landscape?
(Please check just one best choice.)
- ☐ I strongly prefer a natural appearing landscape to be happy.
 - ☐ I prefer a natural appearing landscape but it is not essential.
 - ☐ A natural appearing landscape doesn't matter to me.
 - ☐ I prefer a landscape with visual evidence of resource extraction.
7. Please check one statement below that best describes how knowledgeable you consider yourself to be about public land management issues:
- ☐ I pay little attention to public land management issues.
 - ☐ I am somewhat interested in public land management issues and occasionally read newspaper articles or watch TV shows about them.
 - ☐ I am interested in public land management and regularly read newspaper and magazine articles and watch TV shows about it.
 - ☐ I am very interested in public land management and read lots of articles and books about it.
 - ☐ I am concerned about public land management, I get involved in it, and I get as informed as time permits.
 - ☐ I am very concerned about public land management, I get very involved in it, and I read many articles, books and government reports and plans about it.

8. Please check the one statement below that you agree most with:

___ I believe land management experts can best decide how to balance environmental and economic needs.

___ I believe that all concerned people should have an important voice in balancing environmental and economic needs from public lands.

9. Please check the one statement below that best describes how public land management affects how you vote for elected officials:

___ I do not care about public land management issues so they rarely influence who I vote for.

___ I do care about public land management issues but they are not an important factor in determining who I vote for.

___ I care about public land management issues but they are not usually one of the most important things that influences who I vote for.

___ I care about public land management issues and they are often a major factor in determining who I vote for.

10. Policies to save the northern spotted owl have contributed, in part, to reductions in timber harvests in the federal forests of western Washington and Oregon.. Please circle the phrase underneath each statement below that best describes how much you agree with it:

___ I have no opinion or knowledge about the northern spotted owl --skip to next question.

I believe the northern spotted owl is not really endangered.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
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I believe there is no real conflict between saving the northern spotted owl and continuing levels of federal forest harvests like those of the 1970's and 1980's.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

I believe the northern spotted owl should be saved only if it can be done without eliminating jobs and significantly hurting the economies of communities.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

I believe the northern spotted owl should be saved even at a high economic cost.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

I believe the northern spotted owl should be saved only if it can be done without significantly hurting private property owners' rights and freedom of land use.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
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10a. Might your opinions about the statements above easily change if you knew more about the northern spotted owl? ☐ yes ☐ no

10b. Are you pretty certain of your opinions about the statements above regarding the northern spotted owl? ☐ yes ☐ no

Please answer the following questions so that we can know a few basic things about you and see how our sample compares to census data for your area:

11. How old are you? years old.

12. How much education do you have? (Check the highest level completed.)

☐ elementary school	☐ junior high/middle school
☐ high school	☐ some college
☐ junior college degree	☐ college degree
☐ some graduate school	☐ post-graduate work or degree

13. What is your gender? ☐ female ☐ male

14. What is your race or ethnic identity?

☐ Native American/Alaskan	☐ Asian/Pacific islander
☐ Black, not of Hispanic origin	☐ Hispanic
☐ White, not of Hispanic origin	☐ mixed race
☐ other:	☐ I prefer not to answer this question.

15. How would you characterize the community where your home is?

☐ big city (more than 100,000 people)

☐ small city (between 25,000 and 100,000 people)

☐ town (less than 25,000 people)

☐ rural (My home is isolated outside a town or city.)

16. What are the first five digits in your home's zip code?

____ _

17. How long have you lived in Washington and/or Oregon?

____ 1-4 years

____ 5-9 years

____ 10-20 years

____ more than
20 years

18. Are you a registered voter?

____ yes

____ no

19. Which statement below best describes how you best understand how your household's income relates to the forest products industry?
(Please check the one best choice.)

____ As far as I know, none or very little of my income comes directly or indirectly from the forest products industry.

____ My main income comes directly from the forest products industry.

____ My main income comes indirectly from the forest products industry.

____ A significant part of my income comes directly or indirectly from the forest products industry.

____ I am not sure what relation my income has to forest products.

20. Approximately what is your household's total annual income?
(Please check one choice.)

____ less than \$10,000/year

____ \$10,000-\$20,000/year

____ \$20,000-\$30,000/year

____ \$30,000-\$50,000/year

____ \$50,000-\$100,000/year

____ more than \$100,000/year

____ I prefer not to answer this question.

Please write comments on the back of the pages of this survey, especially the last page. We will find, read and analyze them.

OPTIONAL QUESTIONS

You are not required to answer the following questions. They are a bit more philosophical and difficult to answer. They take more thought and time to fill in. Please answer as many as you have the time and inclination to.

21. New national forest management philosophies are being proposed called "new forestry," "ecological forestry," "ecosystem management," or "new perspectives." These generally aim to manage forests toward a more equal balance between timber harvests and wildlife habitat than traditional forestry is often viewed as doing. Underneath each statement below about "new forestry" please circle the phrase that best describes how much you agree with it:

____ I have no knowledge or opinion about "new forestry" --skip to next question.

I am generally supportive of "new forestry" and think it may be possible, but it should not be tried in old growth forests.

Strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

I am generally supportive of "new forestry" and think it may be possible, and should be applied to all kinds of forests, including old growth.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

I am generally not supportive of "new forestry" because national forests should continue to be managed for timber harvests by established methods.

strongly	disagree disagree	neutral or not sure	agree	strongly agree
----------	----------------------	------------------------	-------	-------------------

I am generally not supportive of "new forestry" because national forests should mainly be managed for nature and wildlife values, not harvests.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

- 21a. Might your opinions about the statements above easily change if you knew more about "new forestry"? ____ yes ____ no

- 21b. Are you pretty certain of your opinions about the statements above regarding "new forestry"?

____ yes ____ no

22. Clearcutting is a method of timber harvest that removes all or nearly all the trees in an area. Please circle the phrase underneath each statement below that best describes how much you agree with it:

____ I have no opinion or knowledge about clearcutting --skip to next question.

Clearcutting should have no restrictions since it is the safest and most economical harvest method.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
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Clearcutting should be allowed anywhere so long as trees are successfully replanted.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

Clearcutting should be allowed if land managers judge that it won't do major harm to wildlife.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

Clearcutting should happen only where qualified foresters judge it to be best.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

Clearcutting should be allowed only if it is not seen from highways and recreation areas where lots of people will see it.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

Clearcutting should be done only if it is designed so that it doesn't produce scars when seen from highways and recreation areas where lots of people will see it.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
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Clearcutting should not be allowed on public land but is acceptable on private land.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

Clearcutting should not be allowed anywhere.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

- 22a. Might your opinions about the statements above easily change if you knew more about clearcutting?

____ yes ____ no

- 22b. Are you pretty certain of your opinions about the statements above regarding clearcutting?

____ yes ____ no

23. Below are several statements describing philosophies under which national forests could be managed. Underneath each statement please circle the phrase that best describes how much you agree with it:

___ I have no clear ideas or preferences about how national forests should be managed --skip to next question.

National forests should supply all the timber needed by existing mills. Other resources should be provided as much as possible only after that goal is met.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

National forests should be entirely devoted to wildlife diversity and nature protection with recreation allowed only where compatible with wildlife.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

National forests should be sold or transferred to private and non-profit parties who can more efficiently produce economic and environmental resources there.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

National forests should be managed mainly for a variety of public goods, like wildlife, water and recreation, that are sometimes not produced well by private forest owners. They should only produce commercial forest products if that does not hinder production of plenty of these other public goods now or in the future.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

National forests should produce as much of all kinds of resources, like wildlife, timber and recreation, as possible so long as producing any one resource doesn't eliminate the possibility of producing lots of any resources in the future.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
----------------------	----------	------------------------	-------	-------------------

National forests should produce as much timber as possible now without impairing the ability of the forests to produce an adequate amount of timber and other resource values that may be needed in the future.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
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I do not trust the forest service to manage public land.

strongly disagree	disagree	neutral or not sure	agree	strongly agree
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23a. Who should make management decisions affecting national forest lands?

Circle your most preferred choice from these options:

U.S. Forest
Service

U.S.
Interior
Department

states

counties

statewide
citizen
boards

local
citizen
boards

APPENDIX B

LIST OF GROUPS CONTACTED

Group	Set Code	Number People	Date Surveyed
1995 Site Analysis Class	SA95	16	9/27/95
Cottage Grove Noon Kiwanis	CGSK	17	2/27/96
South Umpquah Valley Econ. Develop.	UVED	16	2/29/96
Douglass County Advisory Council	RWU	11	2/29/96
Blue River Community Development Co.	BRCD	10	3/5/96
Eugene Izaack Walton League	EIWL	21	3/12/96
Cottage Grove Sunrise Kiwanis	CGK	13	3/20/96
1996 Land Use Planning Class	LUP	18	4/2/96
Salem Society of American Foresters	SSAF	13	4/8/96
Eugene American Business Women Ass.	ABWA	7	4/10/96
Springfield Oregon Hunters Association	OHA	34	4/17/96
Springfield Kiwanis	KISP	21	4/18/96
Eugene Nat. Ass. Retired Fed. Employees	ARFE	18	4/22/96
Myrtle Creek Am. Ass. Retired Persons	AARP	27	4/23/96
Corvallis Environmental Center	CEC	1	4/24/96
Eugene Metro Rotary Club	EMR	22	4/30/96
Collin's Environmental Law Class	COL	22	5/9/96
Emerald Society of American Foresters	ESF	19	5/15/96
Bohemia Mine Owner's Association	BMOA	52	5/17/96
Eugene Ancient Forest Study Group	AFS	9	5/22/96
Lane County Audubon Society	LCA	6	5/28/96
Umpqua Valley League of Women Voters	RWV	17	5/28/96
Albany Northwest Steelheaders	ANS	37	6/5/96
Eugene League of Women Voters	ELW	6	6/18/96
Hillsboro Community Participation Org.	HIL	5	6/19/96
Santa Clara Western Outdoor Women	WOW	6	6/19/96
Sweet Home Senior Center	SHS	12	7/8/96
Forks Dept. Natural Resources	FNR	13	7/10/96
Oakridge Chamber of Commerce	ORC	13	7/15/96
Summer Site Analysis	SSA	23	7/22/96
Summer Architecture Academy	SAC	38	7/23/96
Bend Evenings With Nature	BEWN	10	9/18/96
Nike Ecoteam	NIKE	13	9/20/96
Oregon Women in Forestry	OWF	8	9/28/96
1996 Site Analysis Class	SA96	41	10/1/96
Eugene Hoo-Hoo-Etts	HHT	11	10/14/96

Group	Set Code	Number People	Date Surveyed
Loy Section 1	LOYA	18	11/4/96
Loy Section 2	LOYB	14	11/4/96
Albany AARP	ALRP	40	11/4/96
Loy Section 3	LOYC	17	11/4/96
Loy Section 6	LOYF	16	11/5/96
Loy Section 4	LOYD	22	11/5/96
Loy Section 5	LOYE	13	11/5/96
Loy Section 7	LOYG	24	11/6/96
Loy Section 8	LOYH	12	11/7/96
Loy Section 9	LOYI	17	11/7/96
Loy Section 10	LOYJ	19	11/7/96
Loy Section 11	LOYK	16	11/7/96
Loy Section 12	LOYL	19	11/8/96
Dickman Forest Ecology Class	DKMN	81	12/3/96
Boeing Alpine Club	BOE	23	12/5/96
Mazamas	MAZ	31	12/11/96
1997 Masters Project Class	KLC	9	1/6/97
Michelsen Dinner Party (Ashland)	MIC	9	1/11/97
Grants Pass Kiwanis	GPK	45	1/14/97
Battle Ground Kiwanis	BGK	18	1/16/97
Chehalis Chamber of Commerce	CCC	31	1/16/97
Total Groups	57		
Total People	1120		

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