NORTHWEST FOREST PLAN
THE FIRST TEN YEARS (1994–2003)

Socioeconomic Monitoring of the Mount Hood National Forest and Three Local Communities

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The **Forest Service** of the U.S. Department of Agriculture is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the national forests and national grasslands, it strives—as directed by Congress—to provide increasingly greater service to a growing Nation.

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Abstract

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This report examines socioeconomic changes that took place between 1990 and 2003 on and around lands managed by the Mount Hood National Forest in Oregon to assess the effects of the Northwest Forest Plan (the Plan) on rural economies and communities there. Three case communities were studied: the Greater Estacada Area, the Upper Hood River Valley, and the Villages of Mount Hood from Brightwood to Rhododendron. The report characterizes the region and its history, discusses management changes on the forest under the Plan and how they were perceived, describes socioeconomic change in the communities and how they were linked to the Plan, and evaluates how well Plan socioeconomic goals were met by the Mount Hood National Forest.

Keywords: Socioeconomic, monitoring, Northwest Forest Plan, forest communities, rural development, Mount Hood National Forest.

Preface

In the early 1990s, controversy over harvest of old-growth forests led to sweeping changes in management of federal forests in western Washington, Oregon, and northwest California. These changes were prompted by a series of lawsuits in the late 1980s and early 1990s that effectively shut down federal timber harvest in the Pacific Northwest. In response, a Presidential summit was held in Portland, Oregon, in 1993. This summit led to issuance by President Clinton of a mandate for federal land management and regulatory agencies to work together to develop a plan to resolve the conflict. The President's guiding principles followed shortly after the summit in his *Forest Plan for a Sustainable Economy and Sustainable Environment*,[1] now called the Northwest Forest Plan (the Plan).

Immediately after the summit, a team of scientists and technical experts were convened to conduct an assessment of options.[2] This assessment provided the scientific

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[1] Clinton, W.J.; Gore, A., Jr. 1996. The Forest Plan for a sustainable economy and a sustainable environment. In: Tuchmann, E.T.; Connaughton, K.P.; Freedman, L.E.; Moriwaki, C.B. The Northwest Forest Plan: a report to the President and Congress. Washington, DC: U.S. Department of Agriculture, Office of Forestry and Economic Assistance: 231–238. App. A.

[2] Forest Ecosystem Management Assessment Team [FEMAT]. 1993. Forest ecosystem management: an ecological, economic, and social assessment. Portland, OR: U.S. Department of Agriculture; U.S. Department of the Interior [et al.]. [Irregular pagination].

basis for the environmental impact statement and record of decision (ROD)[3] to amend Forest Service and Bureau of Land Management planning documents within the range of the northern spotted owl (*Strix occidentalis caurina*).

The ROD, to be implemented across the 24 million federal acres (9.7 million hectares), put in place a whole new approach to federal land management. Key components of the ROD included a new map of land use allocations—late-successional reserves, matrix, riparian reserves, adaptive management areas, and key watersheds. Plan standards and guidelines provided the specific management direction regarding how these land use allocations were to be managed. In addition, the Plan put in place a variety of strategies and processes to be implemented. These included adaptive management, an aquatic conservation strategy, late-successional reserve and watershed assessments, survey and manage rerquirements, an interagency organization, social and economic mitigation initiatives, and monitoring.

Monitoring provides a means to address the uncertainty of our predictions and compliance with forest management laws and policy. The ROD clearly states that monitoring is essential and required (see footnote 3):

> Monitoring is an essential component of the selected alternative. It ensures that management actions meet the prescribed standards and guidelines and that they comply with applicable laws and policies. Monitoring will provide information to determine if the standards and guidelines are being followed, verify if they are achieving the desired results, and determine if underlying assumptions are sound.

Finally, Judge Dwyer reiterated the importance of monitoring in his 1994 decision declaring the Plan legally acceptable:[4]

> Monitoring is central to the [Northwest Forest Plan's] validity. If it is not funded, or done for any reason, the plan will have to be reconsidered.

The ROD monitoring plan provided a very general framework to begin development of an interagency monitoring program. It identified key areas to monitor, initial sets of questions, types and scope of monitoring, the need for common protocols and quality assurance, and the need to develop a common design framework. In 1995, the effectiveness monitoring program plan and initial protocols for implementation monitoring were

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[3] U.S. Department of Agriculture, Forest Service; U.S. Department of the Interior, Bureau of Land Management [USDA and USDI]. 1994b. Record of decision for amendments to Forest Service and Bureau of Land Management planning documents within the range of the northern spotted owl. Standards and guidelines for management of habitat for late-successional and old-growth forest related species within the range of the northern spotted owl. [Place of publication unknown]. 74 p.

[4] Dwyer, W.L. 1994. Seattle Audubon Society, et al. v. James Lyons, Assistant Secretary of Agriculture, et al. Order on motions for Summary Judgment RE 1994 Forest Plan. Seattle, WA: U.S. District Court, Western District of Washington.

approved by the Regional Interagency Executive Committee. Approval of the effectiveness monitoring plan led to the formation of technical teams to develop the overall program strategy and design and monitoring protocols for late-successional and old-growth forests (older forests), northern spotted owls, marbled murrelets (*Brachyramphus marmoratus*), tribal, and watershed condition. Socioeconomic monitoring protocols continue to be tested.

Periodic analysis and interpretation of monitoring data is essential to completing the monitoring task. This important step was described in the overall monitoring strategy[5] and the regional interagency executive committee approved a 5-year interpretive reporting cycle. In 2005 and 2006, 10-year reports were published that contain the first comprehensive analysis and interpretation of monitoring data since the ROD.

This report is linked to the socioeconomic monitoring 10-year interpretive report.[6] It contains detailed results from one of four case-study areas in which local-scale monitoring was conducted to complement regional-scale monitoring, the focus of the interpretive report.

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[5] Mulder, B.; Noon, B.; Spies, T.; Raphael, M.; Palmer, C.; Olsen, A.; Reeves, G.; Welsh, H. 1999. The strategy and design of the effectiveness monitoring program for the Northwest Forest Plan. Gen. Tech. Rep. PNW-GTR-437. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 138 p.

[6] Charnley, S., tech. coord. 2006. Northwest Forest Plan—the first 10 years (1994–2003): socioeconomic monitoring results. Gen. Tech. Rep. PNW-GTR-649. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 6 vol.

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Chapter 1: Introduction and Background

This case study of the Mount Hood National Forest and area communities was undertaken as part of the Northwest Forest Plan Socioeconomic Monitoring Program. It is one of four clusters of case studies conducted during 2003 for the purpose of assessing the effects of the Northwest Forest Plan (the Plan) on rural economies and communities within the range of the northern spotted owl (*Strix occidentalis carurina*). This document is a supplement to Charnley (2006), which presents socioeconomic monitoring results for the entire Plan area from 1990 to 2003. This report presents findings for the Mount Hood National Forest cluster of case studies, providing a level of detail not found in the Charnley report, and is intended to be useful to the Mount Hood National Forest and surrounding communities. Four case-study communities associated with the Mount Hood National Forest are the focus of this report: the Mount Hood National Forest administrative unit, the Greater Estacada Area, the Upper Hood River Valley, and the Villages of Mount Hood from Brightwood to Rhododendron (fig. 1). See Charnley (2006) and Donoghue (2003) for a discussion of how communities were defined for purposes of this study.

The four case studies were developed to respond to two socioeconomic effectiveness monitoring questions posed in the Northwest Forest Plan record of decision (ROD). The first focuses on use levels of natural resources. "Are predictable levels of timber and non-timber resources available and being produced?" (USDA and USDI 1994b: E-9). The second evaluation question relates to rural economies and communities. "Are local communities and economies experiencing positive or negative changes that may be associated with federal forest management?" (USDA and USDI 1994b: E-9).

The evaluation questions posed in the ROD are based on a set of goals and expectations that were associated with the Plan when it was designed. One goal was to produce a predictable and sustainable supply of timber sales, nontimber forest resources, and recreation opportunities that would help meet a second goal: to maintain the stability of local and regional economies on a predictable, long-term basis (USDA and USDI 1994b: 26) and to contribute to community well-being. Third, where timber sales could not proceed, the goal was to minimize adverse impacts on jobs by assisting with long-term economic development and diversification opportunities in those rural communities most affected by the cutbacks (USDA and USDI 1994b: 3). The Northwest Economic Adjustment Initiative (NEAI) aimed to promote this goal and was expected to provide both immediate and long-term relief to rural people, businesses, and communities suffering from reductions in federal timber harvests (Tuchmann and others 1996: 155-156). The fourth socioeconomic goal of the Plan was to establish a system of terrestrial and aquatic reserves that would protect forest values and environmental qualities associated with late-successional and old-growth forest ecosystems that members of the public cared deeply about (Clark et al. 1999: 15, Clinton and Gore 1996, USDA and USDI 1994b: 8–10). Fifth, the Plan aimed to usher in a new approach to federal forest management. In particular, federal agencies were called on to collaborate with one another in managing federal forests in the Pacific Northwest (Clinton and Gore 1996, Tuchmann and others 1996: 6, 44–48). Greater collaboration in forest management was also expected between agencies and citizens (Danks and Haynes 2001: 54).

One component of the monitoring program uses case studies to investigate how the Plan has been implemented on individual forests within the Plan area, and how resultant shifts in forest management have affected forest users and surrounding communities. This report documents one cluster of case studies. Specifically, we looked at how the flow of socioeconomic benefits associated with the Mount Hood National Forest has been affected by the Plan. The socioeconomic benefits we examined include the production of forest commodities (timber, minerals, grazing, nontimber forest products) and forest-based recreation; jobs

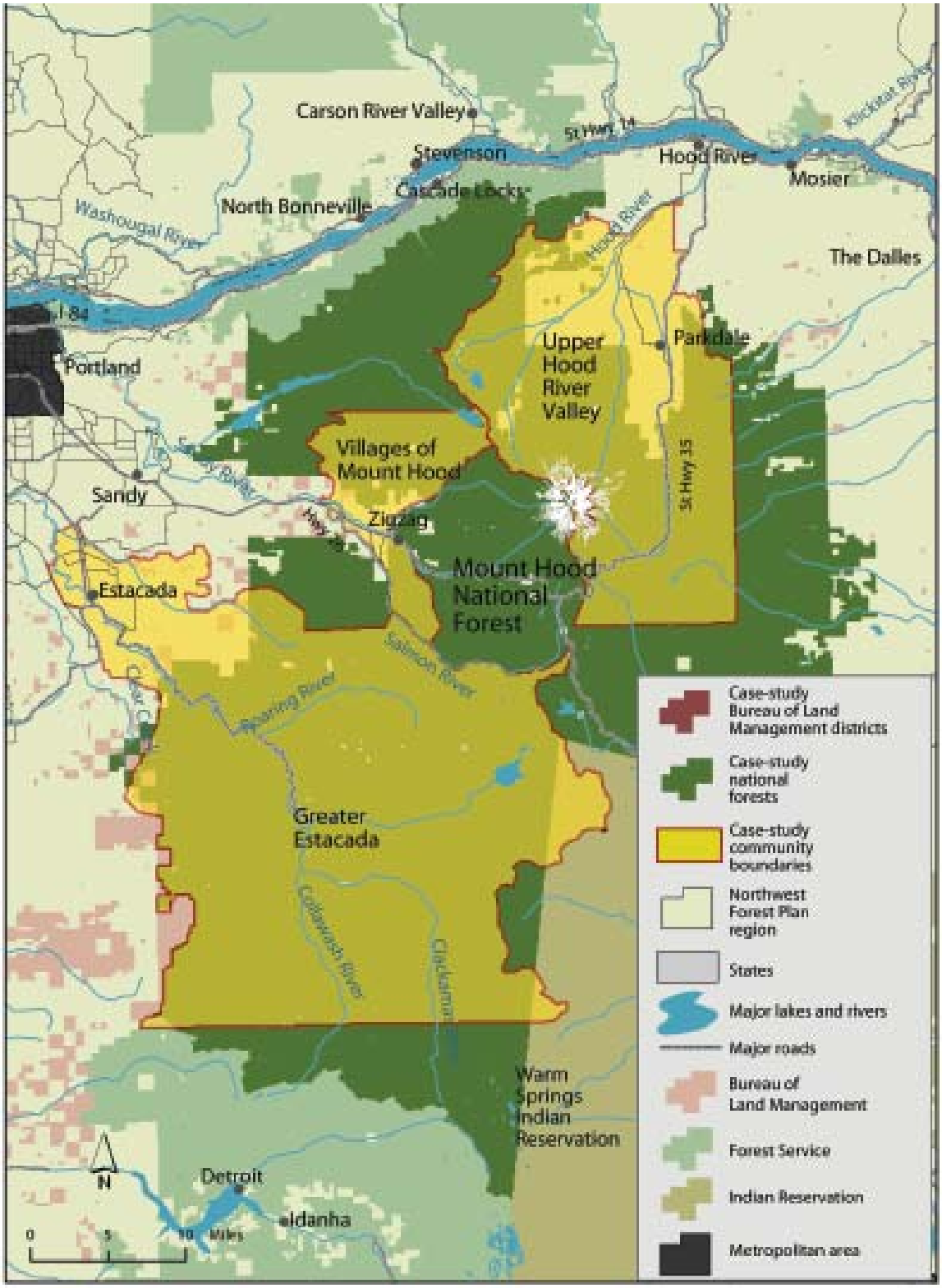

Figure 1—The Mount Hood National Forest and case-study communities.

and income associated with timber production, grazing, and recreation; agency jobs; procurement contract work (focusing on ecosystem management activities); grant money for community economic assistance; benefits associated with payments to county governments; and opportunities to engage in collaborative forest management and stewardship activities, including partnership agreements. We obtained data from Forest Service databases and from the Mount Hood National Forest to document trends in the production of these benefits. We also interviewed 21 forest employees to gain an understanding of how the Plan has influenced these trends (see appendix). In addition, we interviewed 69 members of three communities adjoining the Mount Hood National Forest regarding their perceptions of the ways in which implementation of the Plan had affected their communities.

Methods

Determining Changes in Forest Management and Resource Outputs Linked to the Plan

The monitoring team used a combination of quantitative and qualitative methods. The baseline year for the socioeconomic monitoring program is 1990. To answer the first evaluation question (Are predictable levels of timber and nontimber resources available and being produced?), we obtained data on timber sales, special forest products, grazing, mining, and recreation from Forest Service and Bureau of Land Management (BLM) databases and resource specialists. All of the monitoring teams associated with the Pacific Northwest Interagency Regional Monitoring Program were directed to obtain agency data from corporate databases, publications, or other sources available from agency national, regional, or state offices, rather than requesting data from individual Forest Service and BLM field units (unless warranted by special circumstances[1]).

The analytical framework adopted by this module calls for showing that changes reflected by the trend data were caused by management actions under the Plan, or for providing alternative theories that could explain the changes observed. The team investigated links between trends in resource and recreation outputs, management actions under the Plan, and other explanatory variables by using a case-study approach. For this case study, we interviewed 21 Forest Service employees from the Mount Hood National Forest and discussed trends in the indicator data for each resource area with program specialists, asking their perspectives on the reasons behind the trends observed, and the role of the Plan in influencing them.

Fully researching the causes of trends in resource and recreation outputs from federal forest lands since the Plan was adopted was beyond the scope of our monitoring program. But the interview results provide a starting point for developing and testing hypotheses about how the Plan has affected the ability of the Forest Service and BLM to produce predictable quantities of timber sales and nontimber resources. Our team believes that understanding how the Plan has contributed to the observed trends is necessary for making informed policy decisions that address undesirable trends.

Our ability to answer the monitoring question ("Are predictable levels of timber and nontimber resources available and being produced?"), and to evaluate the Plan goal ("produce a predictable and sustainable level of timber sales and nontimber resources") was limited by the availability of agency data that is comparable from year to year and across the four case-study forests. For some resource indicators (such as much of the recreation data), we could obtain status but not trend data. We report the status data to provide a baseline for future monitoring. In some cases (such as minerals and special forest products), the resource data tracked by the agencies did not serve as adequate indicators for answering the monitoring question directly. We believe that providing some information about trends in these resource areas is better than providing no information at all. Thus, we made the most of the available data, assessing what we could learn related to the monitoring question and goal.

[1] Data provided by the Mount Hood National Forest will be noted.

We obtained some resource and recreation data directly from the four case-study forests. When we compared these data with the case-study forest data in corporate databases, we sometimes found differences in the numbers. In those instances we used the data from forest units for our analysis, assuming they were correct.

Determining Plan Impacts on Local Communities

The second evaluation question has two components: Are local communities and economies experiencing positive or negative changes and can these changes be associated with federal forest management? To assess whether local communities and economies were experiencing positive or negative changes, the team delineated 1,314 non-metropolitan communities in the Plan area, and used social and economic indicators from the U.S. census to analyze change in the communities between 1990 and 2000 (see Charnley 2006 and Donoghue 2003 for more details). The team also developed a socioeconomic well-being index used to compare community well-being scores in 1990 and 2000 (Donoghue and Sutton 2006).

Finding direct connections between changes in forest management policy and socioeconomic change is difficult. To assess whether social and economic change in local communities and economies was associated with the Plan, we examined trends in socioeconomic benefits from federal forests that potentially affect the well-being of residents of forest-based communities. Benefits included jobs and income associated with forest resources and recreation, agency jobs, and procurement contracting opportunities. We examined local-scale trends for the four case-study forests by using quantitative data from agency databases and other secondary sources. In addition, we evaluated the success of Plan mitigation measures designed to support rural communities and economies dependent on jobs in the wood products industry during a period of economic transition. These mitigation measures included integrating forestry and economic development goals by creating new jobs in ecosystem restoration, the NEAI, and providing a safety net for payments to counties to help compensate for the loss of revenue sharing based on timber receipts.

To supplement the quantitative monitoring data, the team employed a community case-study approach to gather and analyze qualitative data. These data provided a more detailed understanding of the social and economic conditions and trends described by the quantitative data, how changes in the flow of forest benefits contributed to change in local communities, how the Plan affected the flow of socioeconomic benefits, and how agency efforts to mitigate Plan impacts did or did not help communities adapt to change. We identify key patterns, themes, and insights that emerge from the cases and use them to advance our understanding of how federal forest management policy may be linked to socioeconomic well-being in forest-based communities. These interviews are also the main source of data for evaluating progress in agency-citizen collaboration under the Plan, and how effective the Plan has been in protecting forest values and environmental qualities associated with older-forest and aquatic ecosystems.

Selection of case-study forests—
Case-study forests were chosen to represent one national forest in each of the three states that lie within the Plan area, and one BLM unit in Oregon, the only place that the BLM has significant land holdings inside the Plan area. They were also chosen to represent different provinces (the Plan area is broken up into 12 planning provinces). The monitoring program team leader sent a letter to all of the national forests and BLM districts in the Plan area and asked for volunteers to participate in socioeconomic monitoring. We took this approach because the monitoring effort was considered a pilot program, and we wanted to conduct it on forests that were interested in participating and making use of the resulting information. The Mount Hood National Forest volunteered to participate in this study.

Selection of case-study communities—
Case-study communities associated with each forest were chosen on the basis of a number of criteria. First, the team identified a sampling frame of communities that included all of the community block group aggregates whose

polygons lay, at least partially, within a 10-mile radius of the case-study forest boundaries. The team chose this distance because it wanted to focus the monitoring work in forest-based communities, and assumed that communities close to federal forests would have social, economic, or cultural ties to those forests. We then met with agency employees from each case-study forest and showed them our sample frame. We discussed which of the communities within our sample frame currently or historically maintained some kind of relations with the case forest and the managing agency. Using this process, we narrowed the sample frame to those communities identified as having a significant relationship to the forest.

We selected three communities associated with each case-study forest from the sample frame for monitoring. We recognize, however, that in only choosing three communities around each forest, we did not capture all of the variation in community "types" or in community-forest relations in each case-study area. Case-study communities were chosen randomly from a stratified sample. We stratified communities within the sample frame on the basis of their socioeconomic well-being as measured in 1990, by using three categories: high, medium, and low. We randomly chose one community from each stratum, unless there were no communities in one of the strata (one case-study forest did not have any communities that measured high in socioeconomic well-being in 1990). In this case, we randomly chose two communities from the stratum that contained the largest number of communities–generally the middle category.

Once we selected the case communities, we visited them and talked with community members to determine whether the community did indeed have historical or present ties to the case forest. We also used the interview process to determine how the communities should be defined for case-study purposes. The census block group aggregate (BGA) delineations were initially used for randomly selecting case communities; however, the model we used did not necessarily correspond geographically to the place that community members considered to be their "community." Thus the BGA community delineations were starting points for defining study communities, and we adjusted those definitions once we got to the field and learned how local residents conceptualized their community. In many cases, we further aggregated the original randomly chosen BGA with surrounding BGA(s) in response to feedback from local residents to ultimately define the case-study community boundaries.

For this case study, the three communities selected were the Greater Estacada Area, the Villages of Mount Hood from Brightwood to Rhododendron, and the Upper Hood River Valley.

Census statistics—

We compared U.S. census statistics from 1990 and 2000 for the case-study communities (i.e., census BGAs) to determine changes in socioeconomic conditions. The indicators that we selected included demographic variables, such as total population, median age, school enrollment, percentage of population that completed high school, percentage of population with a bachelor's degree or greater, age distribution, ethnicity, population by race, and Hispanic population. We also looked at economic indicators, such as median household income, percentage unemployed, percentage of households living in poverty, household income distribution, and employment by industry. We compared community data to county-level data.

Interviews—

Interviewing to obtain qualitative data is a social science research method used to understand a specific process or phenomenon, such as the relation between federal forest management and community socioeconomic well-being. We selected interviewees purposefully, rather than randomly, because we wanted to interview local experts who could provide information relevant to the monitoring questions posed in this chapter. We also chose a sample that would represent variation in the populations under study; we identified specific categories of people to interview in each community and on each forest unit about the monitoring question of interest, so that we could document a range of perspectives on them. We interviewed 27 people from the Greater Estacada Area, 18 people from the Upper

Hood River Valley, and 24 people from the Villages of Mount Hood from Brightwood to Rhododendron. Not all interviewees were residents of the communities. Some were individuals who worked in the community or had a connection to either the community or the portion of the forest that surrounded the community. The appendix provides a general description of the interviewees from the three communities. Because of the potentially sensitive nature of some of the interview questions, we kept the names of interviewees confidential. In addition, several Forest Service employees were familiar with, worked in, or were long-term residents of the case-study communities, and were thus interviewed about management and resource output changes on the forest as well as changes in community-forest relations and socioeconomic conditions for the case-study communities.

After identifying categories of informants to be interviewed in each community and on each forest, we used a snowball sampling approach to locate interviewees. Snowball sampling is an effective method of building a sampling frame where there is a relatively small population of people who know of and come into contact with one another (Bernard 2002), as was the case in most of the communities and all of the forest units that we sampled. It entails locating key individuals in a community, and asking them to identify people who would be appropriate to interview about the topics under study. The criteria we used to develop our sample frame included people who represented one of the informant categories initially identified, people who had lived in the case community or worked on the case forest at least since 1994 when the Plan was adopted, people who were knowledgeable about the topics under study, people who were considered able to provide a window into the community or the forest unit of interest, and people who were articulate and willing to talk with us. Our interviewees fit most, if not all, of these criteria.

The team gathered names of potential interviewees and contacted those people whose names were repeatedly mentioned to set up an interview time and location. We conducted semistructured interviews by using an interview guide that contained a list of questions and topics to be covered during the interview (see Charnley 2006 for a copy of the interview guide). Interviews with community members focused on the following topics:

- The role of forest management policy in the socioeconomic changes taking place in their communities between 1990 and 2000.
- How their communities have responded to those changes.
- How well the Plan has provided the forest values stakeholders consider important.
- Current issues and concerns relating to management of the forest.
- Trends in Forest Service-community collaboration.

We also showed interviewees charts of quantitative data from the U.S. census comparing socioeconomic conditions in 1990 and 2000, and asked them to reflect on both the accuracy of the data relative to their perceptions of the changes in those conditions and possible explanations for observed changes.

We recorded and transcribed most of the interviews. We compared qualitative data from the interviews with quantitative data obtained from secondary sources to develop a response to the monitoring questions. We did not, however, investigate all of the details given in the narrative accounts to check the accuracy of the "facts." Rather, we used people's understandings and perspectives to construct a more general understanding of the effects of the Plan and agency mitigation measures on communities.

Archival information—
We also examined archival data, including community and agency planning documents, Web sites, and informational reports. We developed detailed descriptions of the changes that took place in community-forest relationships and the role of the Plan in changing those relationships by synthesizing the interview and archival data.

Limitations of the case-study community approach—
By focusing on residents of the three case-study communities, the findings tend to privilege the perceptions of

members of these particular communities of place over the perceptions of other citizens (e.g., communities of interest, residents of metropolitan communities). This is problematic given the Forest Service mandate to manage its lands for the benefit of all U.S. citizens.

Because the case-study communities and the interviewees were not chosen randomly, the interview results do not serve the purpose of generalization to the entire universe represented by the Plan area. Instead, the approach helped us develop a more indepth understanding of the effects of agency management actions, policies, and programs on forest-based communities in different locations to help us answer the monitoring questions. The number of cases examined for purposes of this report was limited by the time and funding available. We thus are careful not to overgeneralize results beyond our cases. The interviews were not conducted in the context of a research project designed to test specific causal hypotheses relating to the monitoring trends or to the effects of forest management policy on local communities. The results, can, however, be used to develop such hypotheses to be tested in future research projects. We view the case communities as an initial sample that will form part of a larger community sample to be monitored in the future as part of the Plan socioeconomic effectiveness monitoring program.

The Mount Hood National Forest

The Mount Hood National Forest consists of 1.1 million acres of forest land in north-central Oregon. The forest is bounded by the Columbia River to the north, the Willamette National Forest to the south, and the reservation of the Confederated Tribes of the Warm Springs to the southeast. The forest straddles the Cascade mountain range, and includes moist western slopes as well as drier east-side ecosystems. Elevations range from 65 feet above sea level at the Columbia River to 11,235 feet on Mount Hood's summit. The forest encompasses portions of Clackamas, Multnomah, Hood River, and Wasco Counties. Approximately 2 million people live in proximity to the west side of the forest. By contrast, counties on the east side of the forest are sparsely populated and possess rural characteristics.

Since the early 1990s, seven district ranger offices have consolidated into four districts on the Mount Hood National Forest. District offices are now located in the towns of Parkdale, Dufur, Zigzag, and Estacada. At the Supervisor's Office in Sandy, staff officers oversee five areas of work: fire, engineering, administration, natural resources, and a program that combines recreation, lands, planning, and public affairs. Contracting and law enforcement officers are shared with other national forests. Currently, the Mount Hood National Forest has about 240 permanent employees and an annual budget of $20 million.

The forest includes a variety of land use allocations, many of which existed in similar form prior to the Plan. These land use allocations are presented in detail in chapter 2 of this report. The Mount Hood National Forest fiscal year 2002 monitoring and evaluation report states that harvesting of commercial forest products from the Mount Hood National Forest has dropped significantly since the listing of the spotted owl as a threatened species in the early 1990s (USDA FS 2002). It also reports that at one time, between 9 and 11 mills operated in proximity to the Mount Hood National Forest and purchased most of the timber sales. Two or three local mills remain in the area and none has purchased timber from the forest in the past decade or so. Recent sales have drawn bidders from as far away as Springfield, Oregon, to the south, Willamina, Oregon, to the west, Vancouver, Washington, to the north, and John Day, Oregon, to the east (USDA FS 2003). Because the timber program budget has steadily declined, other programs, including recreation, have assumed a greater proportion of overhead costs. Program budgets have also been declining, and the additional share of overhead costs further compounds the impact.

Recreation management has evolved into the dominant resource management issue on the Mount Hood National Forest. Owing in part to the growth of the Portland metropolitan area, recreation use on the forest has been consistently high and increasing over the years relative to other

national forests in the region. Recreation use is increasing in terms of the number of users and the types of uses. The decline in the timber program has had direct and indirect implications for recreation and other programs. Details of these changes will be discussed in the following chapter.

Case-Study Communities

Greater Estacada Area

The Greater Estacada Area is located on State Highways 211 and 224, 34 miles from Portland, Oregon. Situated at the eastern edge of the Willamette Valley in the foothills of the Cascade mountain range, the Greater Estacada Area straddles "wild and scenic" portions of the Clackamas River and is adjacent to the west side of the Mount Hood National Forest.

Located in Clackamas County, the Greater Estacada Area includes seven BGAs. For an explanation of BGAs see Donoghue 2003 and Donoghue and Sutton 2006. The BGAs encompass the city of Estacada and surrounding unincorporated areas northwest of Estacada extending to Eagle Creek, west half way to Molalla, and extending east into the Mount Hood National Forest (fig. 2). The population in 2000 was 9,315. The city of Estacada reported a population of 2,371, and the other 75 percent of the population—6,944 people—lives in unincorporated portions of the study area. Residents and county officials typically define the community of Estacada as the area located within the school district boundaries and describe the community as an extensive area with the seven BGAs encompassing most of it.

The city of Estacada includes a number of well-established businesses, including several banks and grocery stores, quick markets, restaurants, churches, a small number of other service and retail businesses, and a utility company. Areas outlying the city are sparsely populated agricultural and timber lands with a limited amount of commercial and industrial development. The city provides basic goods and services for the local population and is the last stop for goods and services for recreationists visiting the Mount Hood National Forest.

Eastern portions of the study area are within the Mount Hood National Forest. Popular destinations on the Mount Hood National Forest that are accessible from Estacada include Table Rock, Bull of the Woods Wilderness Area, and portions of the Salmon-Huckleberry Wilderness Area, as well as Timothy Lake and Bagby Hot Springs. Tens of thousands of acres within the study area are owned and managed by timber companies, such as Longview Fiber and Weyerhaeuser. Additionally, several thousand acres are managed by the state of Oregon, Clackamas County, and the BLM.

Prior to Anglo-European settlement, the Clackamas people lived in permanent fishing communities along the Clackamas River. Contact and trading with Anglo-Europeans and other tribes led to a smallpox outbreak (Kohnen 2002) in the winter of 1829–30, annihilating nine-tenths of the Clackamas people. In 1855, the remaining 88 Clackamas County Indians were forcibly removed to the Grand Ronde Reservation.

The first Anglo-European settlement was established by Phillip Foster at Eagle Creek, just north of Estacada in the 1850s.[2] Foster's farm was located on the Barlow Road, the toll road used by settlers traveling west to the Willamette Valley. Foster's farm was a noted resting place for weary travelers and for its abundance of cattle, hay, and fruits that the farm produced (see footnote 2).

Agriculture subsequently played a central role in the area's development. Local boosters portrayed the area as having a booming agricultural industry, with its cash crops transported to Portland area market. They reported that the rolling land was heavily timbered with Oregon [Douglas] Fir [*Pseudotsuga menziesii* (Mirbel) Franco], some cedar [*Thuja* L.], spruce [*Picea* A. Dietr.], and larch [*Larix* P. Mill.], and that the land was good for producing apples, prunes, berries, pears, peaches, cherries, et cetera.[3] Today, local chamber material proclaims "Ample water, moderate climate

[2] Clackamas County News. [n.d.].

[3] Anonymous. 1911. Estacada, Oregon. A Land of Peace and Plenty.

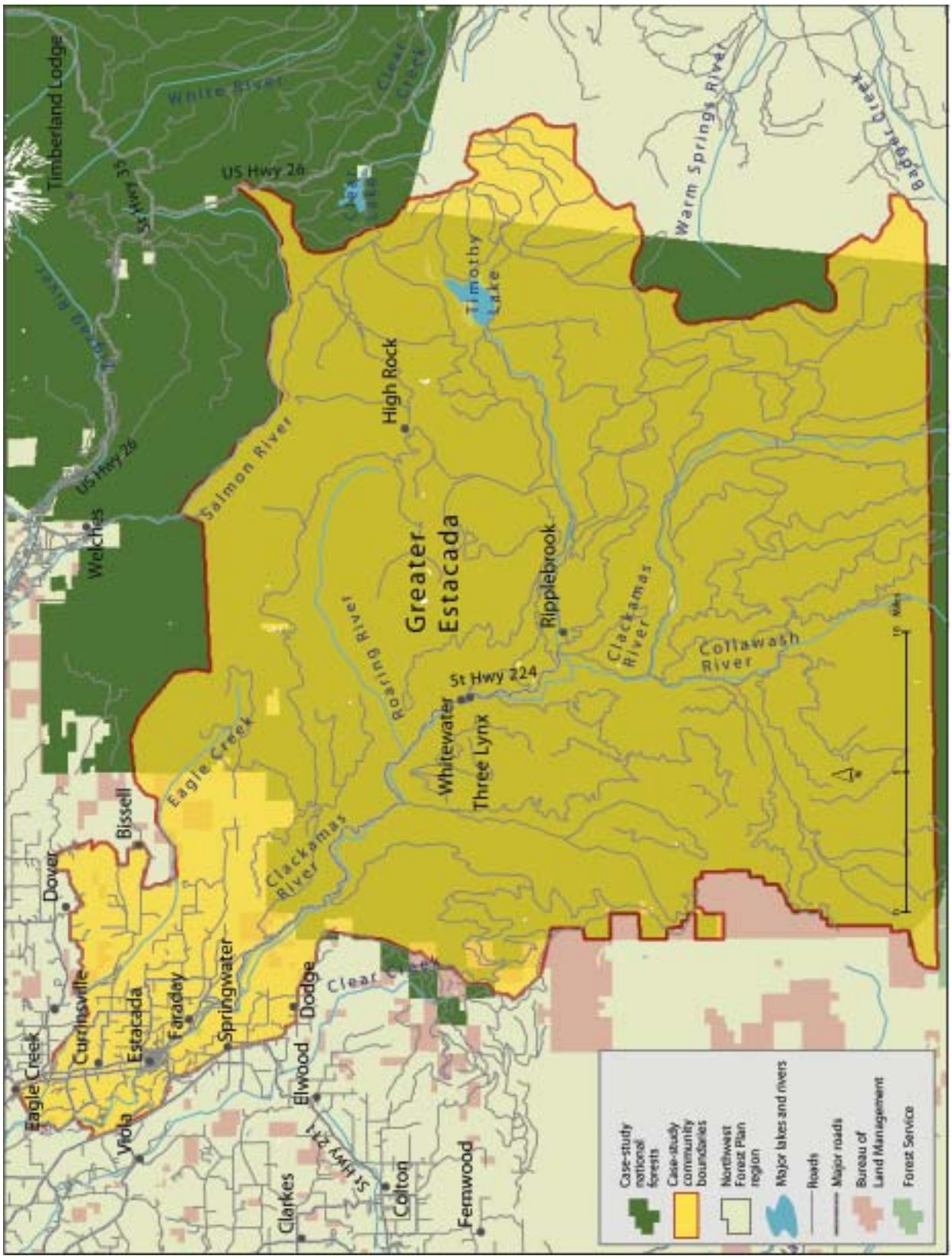

Figure 2—Greater Estacada area case-study community.

and fertile soil make this area a perfect heaven for agricultural enthusiasts from hobby to commercial operations." Clackamas County calls itself the "Christmas Tree Capital of the World," and Christmas tree farms are ubiquitous in the unincorporated areas around Estacada.

Settlement of the Greater Estacada Area began in earnest at the turn of the century. The impetus for its growth was the Oregon Water and Power Company's development of the Clackamas River for power generation to meet Portland's burgeoning energy demands (Wollner 1990). A railroad was built along the Clackamas River to haul supplies to build the Cazedaro, Faraday, and River Mill dams and a power facility. The railroad opened access to the upper Clackamas River, hastened the development of the area, and led to Estacada's incorporation in 1905. The dams remain in place and are operated by Portland General Electric Company (PGE). A PGE office complex is located in Faraday, and the company maintains a close relationship with the Greater Estacada Area.

Beginning with the development of the interurban rail line and the Estacada Hotel in 1904, recreational tourism has played a minor but consistent role in the area's development and its local economy. In 1947, it was reported that 20,000 visitors came to the area to picnic, fish, and pursue other activities.[4] Today, more than 4 million people visit the Mount Hood National Forest (USDA FS 1998) including a small number who access it via Estacada. Increasingly, residents and entrepreneurs are focusing on generating income from tourists who pass through Estacada on their way into the Mount Hood National Forest. Recreational tourism remains a small part of the area's economy.

The dam project opened the forest for logging. As access increased, the local timber industry grew and many loggers settled in the Greater Estacada Area. Timber sales on the Mount Hood and Willamette National Forests, including those stemming from the creation of Timothy Lake in the early 1950s, spurred Estacada's development into a timber-dependent community.

In the mid-1950s there were 6 major and 20 smaller logging operations in the Greater Estacada Area (see footnote 4). It is estimated they logged nearly 189 million board feet off the Mount Hood and Willamette National Forests that year, which amounted to 150 to 200 log trucks moving 5,000 board feet downriver through Estacada each day during the summer months. A mill just outside of the city, owned by Crown-Zellerbach until 1984, employed over 300 people. Until 1990, the mill, which is now owned by RSG Forest Products was supplied predominantly by logs from national forests. In 1979, full-time employment with the Forest Service and the local Crown Zellerbach mill accounted for 370 jobs.

The predominance of the timber-based economy extended through the 1980s. The city's 1989 comprehensive plan indicated that two of the three largest employers in the area were forest product companies.[5] The supply of timber from the national forests declined sharply at the close of the 1980s with the spotted owl injunctions and has remained low since the Plan was adopted in 1994.

The community's economic, social, and cultural relationship with the forest has changed immensely, transitioning away from a timber-based economy over the past 15 years. These changes are described in greater detail in chapter 3 of this report.

Upper Hood River Valley

The Upper Hood River Valley consists of the aggregation of two BGAs. Located in Hood River County on the north side of Mount Hood, the Upper Hood River Valley is 10 miles south of the Columbia River (fig. 3). There are no census places in the Upper Hood River Valley, and the nearest census place is the county seat, the City of Hood River, along the Columbia River. The combined BGAs consist of 19,968 acres of private and public lands, including national forest and county forest land. Roughly two-thirds of the study area is within the boundaries of the Mount Hood National Forest. The Upper Hood River Valley's population is 4,288 (U.S. Census Bureau 2000).

[4] Estacada Old Times Festival Association. 1955.

[5] City of Estacada Comprehensive Plan. 1990.

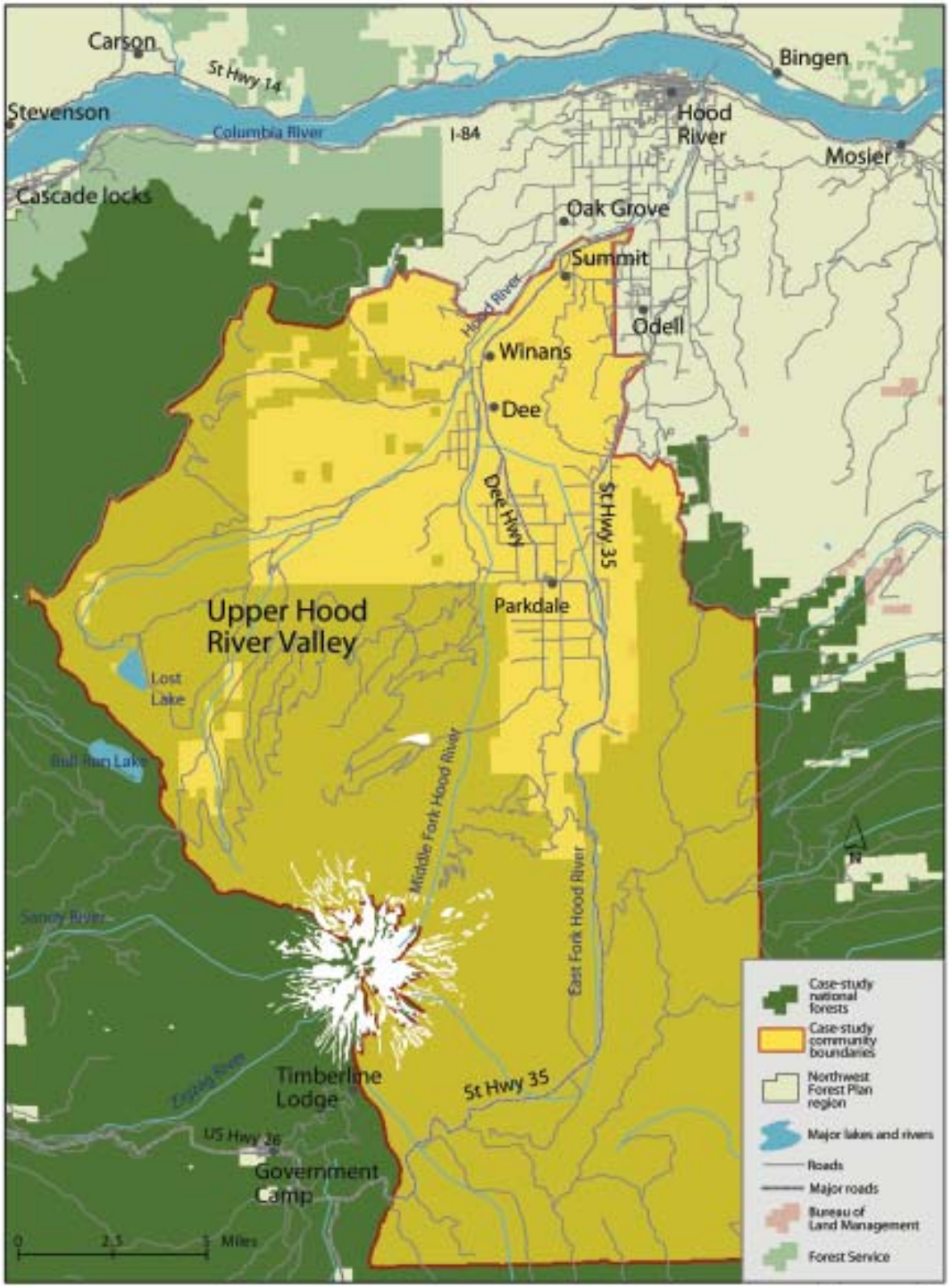

Figure 3—Upper Hood River Valley area case-study community.

Private land in the Upper Hood River Valley consists of residential, agricultural (including orchards, forests, and some livestock), and some commercial land. Most commercial and government services in the Upper Hood River Valley are located in the town of Parkdale. The primary school, fire department, several social services offices, two grocery stores, a few restaurants, a museum, several shops, and a bed and breakfast are located along or within a couple blocks of a main street in Parkdale. Other bed and breakfasts, a gas station, convenience store, country store, and a few restaurants are located in other parts of the Upper Hood River Valley, including the hamlet of Mount Hood. Mount Hood Meadows Ski Resort and Cooper Spur Mountain Resort are located at the high elevations of the Upper Hood River Valley, above residential and agricultural areas.

Portions of the Upper Hood River Valley and Hood River County are within the ceded lands of the Confederated Tribes of the Warm Springs. In addition to tribal members using the area for traditional harvesting, hunting, and fishing practices, the Confederated Tribes of the Warm Springs is the lead administrator of Bonneville Power Administration-funded programs for anadromous fish conservation and reintroduction. A fish acclimation station and fisheries office is located within the Upper Hood River Valley.

The City of Hood River, with a population of 5,831 (U.S. Census Bureau 2000), is the largest population center in Hood River County, offering commercial, medical, banking, and government services. The primary industries for Hood River County include agriculture, timber, hydroelectric production, and recreation. Hood River County is one of few counties in Oregon that own and manage forest land as a source of revenue. The lands are under the management of the County Forester's office. Some of the approximately 31,000 acres of county forest land are within or adjacent to the Upper Hood River Valley.

The Upper Hood River Valley is part of the larger Hood River Valley. Residents note distinctions between upper, mid, and lower portions of the valley. These distinctions relate mainly to zoning regulations and natural conditions that affect population density, soils and climate, and orchard sizes. Although interviewees differentiate the Upper Hood River Valley area from the middle and lower valleys, they share a common history, and residents throughout the valley interact in civic, social, and economic activities.

Agricultural and timber industries began in the Hood River area in the mid to late 1800s (USDA FS 1996a, 1996b) and were the dominant industries for a century or so. Much of the land in the valley was logged and then sold to orchardists for fruit production.

Orchards remain an important economic and social component of the Upper Hood River Valley. The Upper Hood River Valley has fertile soils and good climate for growing apples, cherries, and pears, and other fruit. More than 50 percent of the agricultural acreage in Hood River County is in the upper valley (USDA FS 1996a). International and regional competition and trends in fruit markets have affected the types of fruits orchards are growing. Presently, agriculture is the primary source of local employment.

Over the past century, timber mills of varying sizes have come and gone throughout Hood River County (USDA FS 1996a, 1996b). There were three main mills and a number of smaller mills in operation over the past 40 years. Interviewees report that the larger mills employed several hundred people. Mills closed for varying reasons, with the last mill closing in the late 1990s. One mill site has been converted for other industrial purposes, including a glass manufacturing plant, and another, although closed, appears to be equipped and maintained.

A small number of residents continue to work in forestry, either on private or county forest lands in the area, or outside the county. Many people who worked in the timber industry moved out of the area as the mills were closed in the 1990s.

Over 4 million people visit the Mount Hood and Columbia River Gorge areas each year, mainly to engage in outdoor or scenic activities (USDA FS 1998). Tourism plays an important role in the social and economic dynamics of the Upper Hood River Valley, as people pass through the small towns between the Mount Hood National Forest

and the Columbia River. The increase in tourism has led to increased congestion, traffic accidents, and recreational accidents in the national forest. The increased number of accidents has placed greater demand on the local volunteer fire department in the Upper Hood River Valley. The expansion in tourism has also led to increased exposure to people who see the area, "fall in love" with it, and want to move there. Tourism has also led to economic opportunities in retail, lodging, restaurants, and outfitter services. All interviewees noted an increase in tourism, although they had differing perspectives on whether tourism had positive or negative impacts.

The Upper Hood River Valley is experiencing demographic changes similar to other high-amenity scenic areas close to metropolitan areas. New people, including retirees, people working from home, and people starting up new businesses or occupations, are moving into the Upper Hood River Valley area, although probably not to the extent that they are moving into the lower valley, such as areas immediately outlying Hood River. People are drawn to the natural amenities, including clean air, clean water, and scenic and recreational amenities.

Although the types of relations are varied, the connection between the forest and the people remains important to the social and economic well-being of the community. The dominant sectors of the Hood River County economy, namely tourism/recreation and agriculture, are closely tied to forests: water for agriculture; mountain/forest landscapes for recreation; and scenic amenities for tourists.

Villages of Mount Hood From Brightwood to Rhododendron

The Villages of Mount Hood from Brightwood to Rhododendron (Villages of Mount Hood) include the populated area along Highway 26, beginning 41 miles east of Portland in the narrow Sandy River valley. Thirteen miles east of Sandy, the study area is defined by BGA 2842. The BGA includes the string of villages: Brightwood, Wildwood, Wemme, Welches, Zigzag, and Rhododendron (fig. 4). The study area is bounded to the north, east, and south by the Mount Hood National Forest, and encompasses portions of several tributaries to the Sandy River including the Salmon and Zigzag Rivers and Alder, Wildcat, and Boulder Creeks. The Bull Run Watershed Management Unit, Mount Hood Wilderness, and Salmon-Huckleberry Wilderness Area are adjacent to the study area in the Mount Hood National Forest. In addition, there are several blocks of land under BLM jurisdiction dispersed across the study area, including the popular Cascade Streamwatch educational trail. The Villages of Mount Hood population is 3,670 (U.S. Census Bureau 2000).

Residents generally agreed that Brightwood formed a suitable western boundary for the study area although many interviewees wanted to extend the boundary west to include Alder Creek and Cherryville. Owing to census block group boundaries this was not practical, and the areas were not included in this study. On the eastern front, there was a divergence of opinion about whether Government Camp should be included. All of the settlements, including Government Camp, are considered "east county," and are governed by Clackamas County. Furthermore, residents and properties are in the same school and fire districts, and businesses have organized under a single chamber of commerce. Business interests, in particular, see Government Camp as part of the Villages of Mount Hood community. However, Government Camp is in a separate block group encompassing a large area that has little relation to the Villages of Mount Hood and it is **not** part of this study.

The Villages of Mount Hood's settlement originated with the initial Anglo-European settlement of Oregon. The community is located along the Barlow Road near the end of the Oregon Trail. A few families settled the area and they remain as small enclaves along the travel route to Oregon City. The road later became U.S. Highway 26, a major transportation route over Mount Hood to the Warm Springs Reservation, Madras, Bend, and other destinations in central Oregon. Highway 26 has long served as the route for visitors traveling from the Portland metropolitan area to destinations on the Mount Hood National Forest, including Timberline Lodge or one of the numerous ski areas, lakes,

Figure 4—Villages of Mount Hood area case-study community.

or trails. Although many local businesses see the area as a transportation corridor, there are diverse views among residents, including those who consider the Villages of Mount Hood a "mountain community."

From west to east up the study area, the villages that make up the study area transition from more strictly commuting to more strictly recreation-based communities and economies.

- Brightwood is characterized by a predominance of riverside rural residential development. There are only a handful of businesses serving the local community, including a store, tavern, and post office.
- Wildwood encompasses a small residential development on the north side of Highway 26. There are a small number of businesses along the highway, primarily catering to tourists, including a recreation vehicle (RV) park, restaurant, and visitor center.
- Wemme consists of a concentration of commercial businesses on the highway and a mix of residential and seasonal housing off the highway. Businesses include several eating and drinking establishments, a fly fishing shop, a hardware store, and a few other basic goods and service businesses serving the local population and tourists.
- Welches also consists of a concentration of commercial businesses on the highway and housing developments. The commercial area, with a gas station, large grocery, post office, and coffee shop, is the primary commercial hub serving the study area. The village includes a golf course and resort with a mix of housing developments ranging from year-round residences and rentals, to timeshares and a hotel.
- Zigzag has very limited commercial services and a number of residential properties off the highway. A Forest Service ranger district office is located in Zigzag. Faubion is a residential neighborhood adjacent to Zigzag.
- Rhododendron is characterized by a limited number of tourism- and recreation-based businesses, including a grocery store and restaurant. Forest Service lease properties extend east from Rhododendron toward Government Camp.

The Villages of Mount Hood have evolved over the past 30 years in fits and starts away from a community with a strong and direct relationship to the Forest Service into a community with important social and economic ties to non-resource-related activities.

Residents observed that the local logging economy has been in a steady decline since at least the beginning of the 1970s and perhaps earlier. Many people noted the last big timber sale was associated with the salvage operations in the Bull Run watershed in the early 1980s. Although private logging operators slowly moved out of the area or changed careers, logging activity on the Mount Hood National Forest continued to intensify through the late 1980s, suggesting that logging contractors came from surrounding communities and logs went to mills in outlying areas as well. Demographic and economic trends in the 1970s and 1980s, led to a more diversified community incorporating resort, retirement, recreation, and bedroom community elements. The widespread real estate boom, the development of a resort in Welches, and the widening of Highway 26 all contributed to these changes. The community now divides into a number of fairly disparate populations, the most distinct of which are the commuters, retirees, and seasonal residents.

Mount Hood has been a popular destination for Portland area residents seeking mountain-based recreation since the late 1800s. Recreational uses of the Mount Hood National Forest are heaviest in the summer and winter months, but people visit year round. Skiing and snowboarding are the main draws in the winter, whereas hiking and sightseeing are the largest draws in the summer, particularly visits to Timberline Lodge. The redevelopment and expansion of the Resort at the Mountain in Welches and subsequent development in the Villages of Mount Hood in the 1970s enhanced Mount Hood's reputation as a destination and seasonal mountain community. In addition, there are over 550 Forest Service lease properties in the Mount Hood National Forest scattered along Highway 26. These properties are leased to seasonal residents, predominantly from Portland, who visit regularly and recreate in the area. The lease holders are a stable population who have a close relationship with the forest and support a number of local businesses. The community's natural and built amenities, the long-term relationship many residents and visitors have with Mount Hood, and the area's affordability and proximity to Portland have been the foundation of its steady development as a retirement community.

Chapter 2: Trends in Socioeconomic Benefits From the Mount Hood National Forest, 1990–2002, and the Impact of the Northwest Forest Plan

Resource and Recreation Outputs

One of the socioeconomic goals of the Northwest Forest Plan (the Plan) was to produce a predictable and sustainable supply of timber and nontimber forest products and recreation opportunities on federal forest lands within the Plan area. Consistent with this goal, one of the monitoring questions posed in the Northwest Forest Plan Record of Decision (ROD) was, "Are predictable levels of timber and non-timber resources available and being produced?" (USDA and USDI 1994b: E-9). To answer this question, the ROD specifies that timber harvest levels, special forest products, livestock grazing, mineral extraction, recreation, scenic quality, and commercial fishing be monitored. We did not monitor scenic quality or commercial fishing. The following sections examine whether predictable levels of timber and nontimber resources and recreation opportunities have been produced on the Mount Hood National Forest since 1990, the baseline year for this monitoring program. The data presented below were collected through a combination of quantitative and qualitative methods. Chapter 2 is informed by Forest Service reports and documents and interviews with Forest Service employees. Community perceptions are not represented in this portion of the report.

Timber, Fish, and Wildlife

The timber resource program's goal is to help attain sustainable forest ecosystem conditions, produce a continuing supply of forest products, and provide a positive economic return (USDA FS 2003). The silviculture program includes work for thinning, reforestation, genetics, prescriptions for recreation management, site preparation, vegetation management, and more.

The allowable sale quantity[1] (ASQ) of the 1990 Mount Hood National Forest Plan was 189 million board feet (MMBF). Under the Plan, the probable sale quantity[2] (PSQ) was set at 67 MMBF, then lowered to 64 MMBF in 1995. Figure 5 shows the annual harvest volumes from the forest from 1923 to 2001. For three decades, between 1958 and 1988, the annual volume harvested averaged greater than 300 MMBF. Board feet harvested declined 90 percent between 1989 and 1995, before leveling somewhat to pre-World War II volumes in 1996. The volumes harvested annually were fairly stable between 1997 and 2000 at roughly 40 MMBF (fig. 6). Since the early 1990s, the forest has experienced a sharp decrease in budgets and outputs of the timber and vegetation management programs. The Mount Hood National Forest has twice offered and never attained PSQ between 1995 and 2002 (tabulation below and fig. 7).

Year	PSQ attainment[3]
	Million board feet
1995	36.8
1996	54.6
1997	52.7
1998	46.5
1999	26.2
2000	5.1
2001	29.3
2002	25.9

[1] Allowable sale quantity = The gross amount of timber volume, including salvage, that may be sold annually from a specified area over a stated period in accordance with agency management plans (FEMAT 1993: IX-27).

[2] Probable sale quantity = The allowable harvest level that could be maintained without decline over the long term if the schedule of harvest and regeneration from matrix is followed (USDI and USDA 1994a: Glossary 13).

[3] Source: Mount Hood National Forest Timber Program office. These data include convertible products such as firewood, posts, and poles.

Figure 5—Volume of timber harvested, Mount Hood National Forest, 1923 to 2001. (MMBF = million board feet). Source: Personal communication, Mount Hood National Forest Supervisor, October 2003.

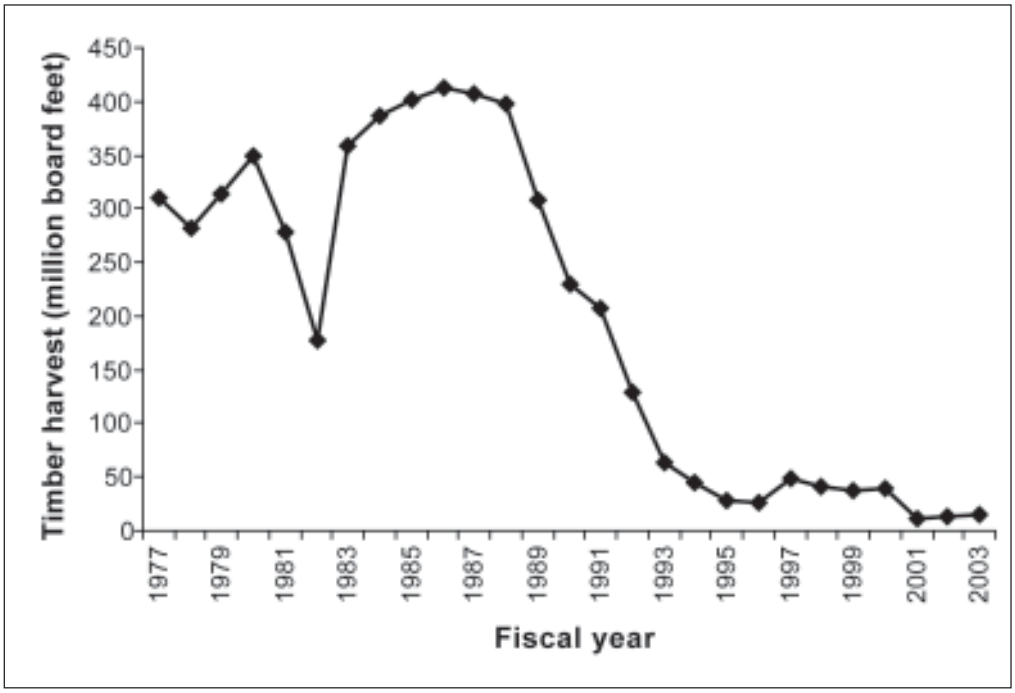

Figure 6—Volume of timber harvested on the Mount Hood National Forest, 1977–2003.

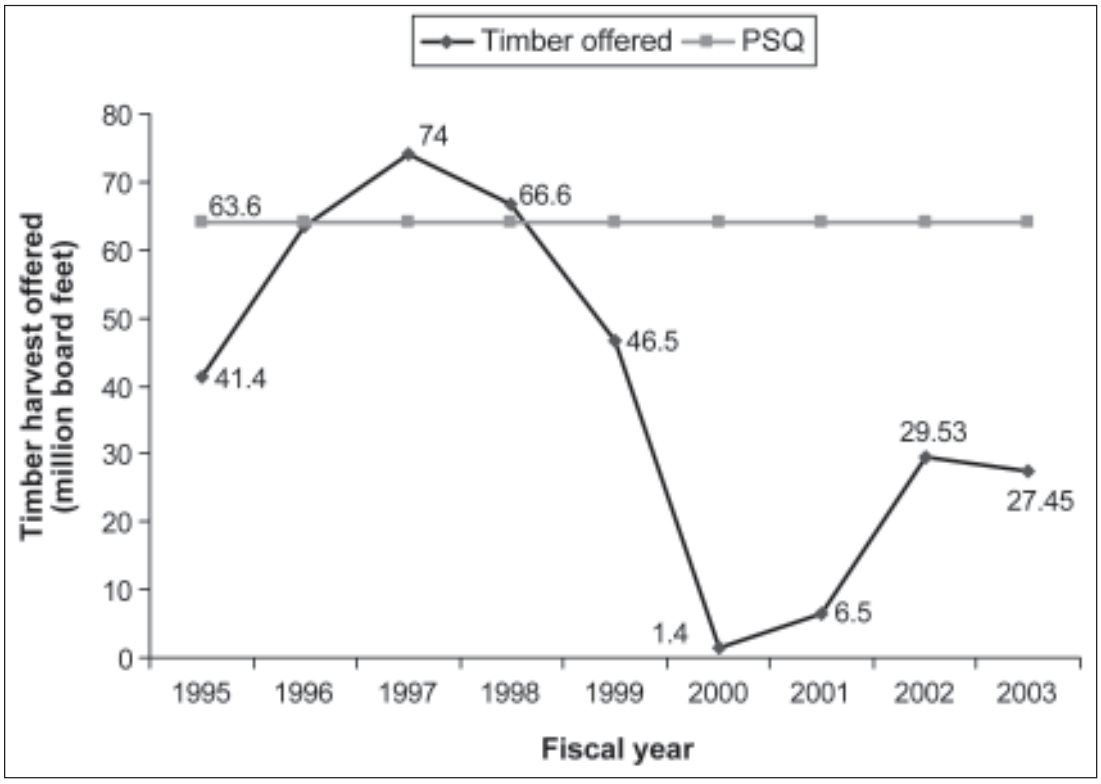

Figure 7—Volume of timber harvest offered and probable sale quantity (PSQ) on the Mount Hood National Forest.

Given the decreasing budgets and increasing needs of the programs, timber program staff believes the timber program budget will not likely be adequate for meeting the PSQ of 64 MMBF.

The ecology program has also experienced staff and budget cutbacks over the past decade. Despite these reductions, there has been an increased focus on inventory work with particular attention to species that appear under survey and manage requirements that did not receive emphasis prior to the Plan. Inventory work on streams has helped the Forest Service identify areas for restoration to support the increasing emphasis on restoration, especially fisheries, as part of the Plan's Aquatic Conservation Strategy (ACS). The ecology program's watershed analyses, also conducted as part of the Plan's ACS, have helped in planning at the landscape level. Furthermore, this work has led to employees working across programmatic units. The integrated approach at the watershed and landscape levels has required increased levels of in-house coordination and planning.

The wildlife program emphasizes maintaining persistent and viable populations of native and desirable nonnative wildlife by (1) protecting and restoring biological and physical components, functions, and interrelationships of forested and rangeland ecosystems; (2) providing quality recreation experiences with minimal impact to ecosystem stability and condition; and (3) conserving populations of threatened, endangered, and sensitive species through recovery and management efforts (USDA FS 2003).

The fisheries program focuses on the forest's populations of salmon, steelhead, and resident trout. There are over 1,600 miles of fish-bearing streams on the Mount Hood National Forest, including 300 miles of streams that support anadromous populations of steelhead and salmon (USDA FS 2003). Although specific trend data were not reported, the Mount Hood National Forest stated that the overall abundance of anadromous fish and bull trout continues to be low in the streams monitored by the forest fisheries program.

Although the distribution of bull trout is reportedly expanding, the overall abundance remains low. Since the Plan's implementation, the forest has increased its emphasis on partnerships with watershed councils and landowners adjacent to the forest to assist in all aspects of fish recovery.

Causes of change and the role of the Plan—
Land use allocations (LUAs) define allowable, restricted, and prohibited uses and activities. Land use allocations are expressed in terms of acres or miles, etc. Each allocation is associated with a specific management objective (USDA and USDI 1994b). Although many of the Plan LUAs were consistent with those found in the Mount Hood National Forest Plan that predated it, the delineation of matrix lands, late-successional reserves (LSR), and the development of the ACS, including the establishment of riparian reserves, led to an overall decrease in acreage where timber harvesting could take place. Matrix is the federal land outside the six categories of designated areas. It is the area in which most timber harvest and other silvicultural activities take place. The LSRs are used in combination with other allocations to "maintain a functional, interactive, late successional and old-growth forest ecosystem" and to "serve as habitat for late successional and old-growth related species including the northern spotted owl" (USDA and USDI 1994b). Riparian reserves are "areas along all streams, wetlands, ponds, lakes, and unstable or potentially unstable areas where the conservation of aquatic and riparian-dependent terrestrial resources receives primary emphasis" (USDA and USDI 1994b). The riparian reserves are interspersed throughout all land use allocations.

The change in LUAs had a number of impacts on the timber program's operations and outputs. The change in allocations interrupted existing management regimes in areas where plantations planted prior to the Plan now fall within the LSRs. One interviewee questioned whether the desired LSR stand structure can be achieved given existing regulations. The ACS, and LUAs in general, created highly dissected lands within matrix areas, resulting in tracts of forest where sales are a challenge to offer and consummate.

Whereas LUAs created new designations to establish the location of various land management activities, Plan procedural requirements affected the manner and timing of these activities. Procedural requirements associated with survey and manage and the ACS, in particular, added time, cost, and uncertainty to resource management activities. These procedural requirements were particularly burdensome during the initial years of the Plan. Although the requirements remain problematic today, recent changes in how they are implemented have reduced their impact on management planning and implementation. Many interviewees noted their program budgets were not adequate for achieving Plan-prescribed PSQ sales or harvest levels given the procedural requirements. Furthermore, they believe that procedural requirements have served as an effective point of leverage for public interest groups working to prevent timber sales.

The combined effect of the change in land use allocations and the procedural requirements of the Plan has been the additional time and cost of planning and carrying out stand management activities and timber sales. These in turn have contributed to a situation where supplies of timber are unpredictable from one year to the next.

The changes in the timber program, including declining harvest levels, budgets, and staff, have affected other programs. For instance, the genetics program is now less active, as there is less need for planting genetically improved trees. Other programs, such as recreation, roads, fire, and volunteers have been affected by the decline in timber program activities and budgets. The changes in these programs are discussed elsewhere.

Although many changes in the timber, fish, and wildlife programs were instigated by the adoption and implementation of the Plan, budget reductions and program integration activities that would have taken place even in the absence of the Plan, were also identified as causes of change. The scope of this project did not include gathering the data that would have allowed us to analyze the extent to which the Plan is responsible for budget declines and program integration. Some staff members indicated that, in their view,

changes in budgeting procedures that occurred independently of the Plan contributed substantially to the costs and complexity of timber management. For example, they noted that under the "primary purpose" funding approach, there has not been the money in the wildlife program to do the type of planning necessary for management actions to benefit wildlife in the LSRs.

Budgetary constraints and the Plan have both functioned to catalyze greater integration of timber, fish, and wildlife programs to achieve resource management goals on the forest. Reportedly, prior to the Plan, many programmatic areas functioned as fairly independent units. They are now more integrated. Although staff members viewed this as a positive change that has benefited resource management, the transition toward a more integrated approach has not occurred without some challenges and costs. For example, it has taken time for agency staff, particularly specialists (botanists, hydrologists, soil scientists, etc.), to work efficiently and effectively across programmatic lines. An integrated approach also requires a good deal of coordination and planning. At the same time, budget and staffing declines have increased employee responsibility or shifted the focus of their work. Some interviewees reported that budget and staff cuts have reinforced the need for coordination and integration.

Special Forest Products

The Forest's special forest products (SFP) coordinator is stationed on the Estacada District, the district with the highest level of nontimber forest product (NTFP) use on the Mount Hood National Forest. The coordinator manages the SFP program for all four districts on the Mount Hood National Forest. Because of the forest's proximity to a large urban population and the abundance of high-value products on the forest, the SFP program is relatively large (USDA FS 2003). The forest supplies NTFPs both for commercial and personal use: common commercial products include boughs for holiday wreaths, beargrass (*Xerophyllum* Michx.) for floral arrangements, and mushrooms; personal-use products include carving stock, landscape greenery transplants, mushrooms, firewood, huckleberries (*Vaccinium* spp.), and Christmas trees. Firewood and Christmas trees are the most commonly permitted personal-use NTFPs. Although the forest makes relatively little money from NTFPs, the products reportedly provide high value to the users. Allowing the harvest of Christmas trees and firewood serves an important public relations function for the forest, particularly with respect to local communities.

The program manager reported the demand for NTFP harvesting on the forest is strong for both commercial and personal uses. Forest data indicates fluctuating demand for NTFP permits between 1996 and 2002, with peaks in 2001 for many NTFPs (fig. 8). The total value of NTFP permits in 1996 was $243,343 and $194,118 in 2002 (fig. 9). The average annual value was just under $160,000 annually. In fiscal year 2002, sales amounted to $33,060 for firewood; figure 10 shows a downward trend in the number of cords sold. Christmas tree sales have fluctuated over the years (fig. 11), with sales amounting to $24,993 in 2002 (USDA FS 2003). For personal use permits, Christmas trees and firewood constitute roughly 30 percent of the total value of NTFPs, with bough, moss, cones, foliage, and fungi harvesting, posts and poles, transplants, and nonconvertibles contributing the difference. For volumes of mushrooms, limbs and boughs, cones, and poles and posts see figures 12, 13, 14, 15.

Program data indicate that the number of cords of firewood permitted has declined steadily since 1990. The program manager said that in 1994-95, roughly 2,700 to 3,000 firewood permits were sold, and 3,020 permits were issued in 1996. The number of firewood permits sold averaged 2,225 annually between 1997 and 2002, ranging from a low of 1,729 cords in 2000, to a high of 2,554 cords in 1994. The price per cord remained stable at $5 to $15 per cord, with the personal-use limit set at five cords per household. Demand for Christmas tree permits has also fluctuated from year to year. In 1996, 2,464 Christmas tree permits were sold, whereas in 2002, 1,770 permits were sold. The price of Christmas trees has been $5 per tree (limit five per household) for a number of years. The supplies of Christmas trees,

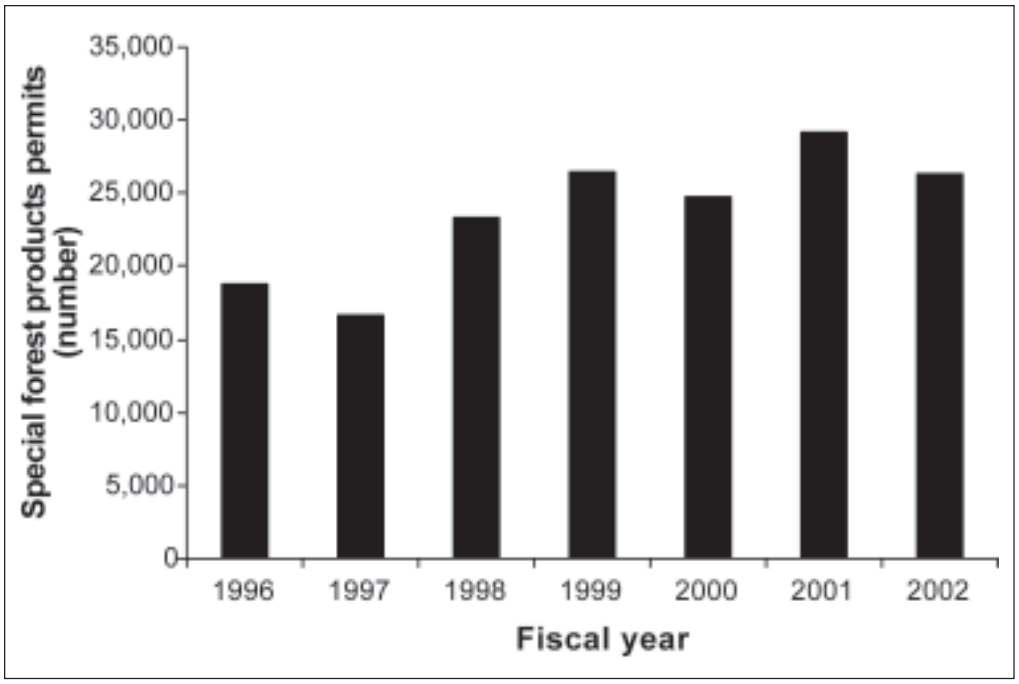

Figure 8—Number of special forest products permits sold, Mount Hood National Forest.

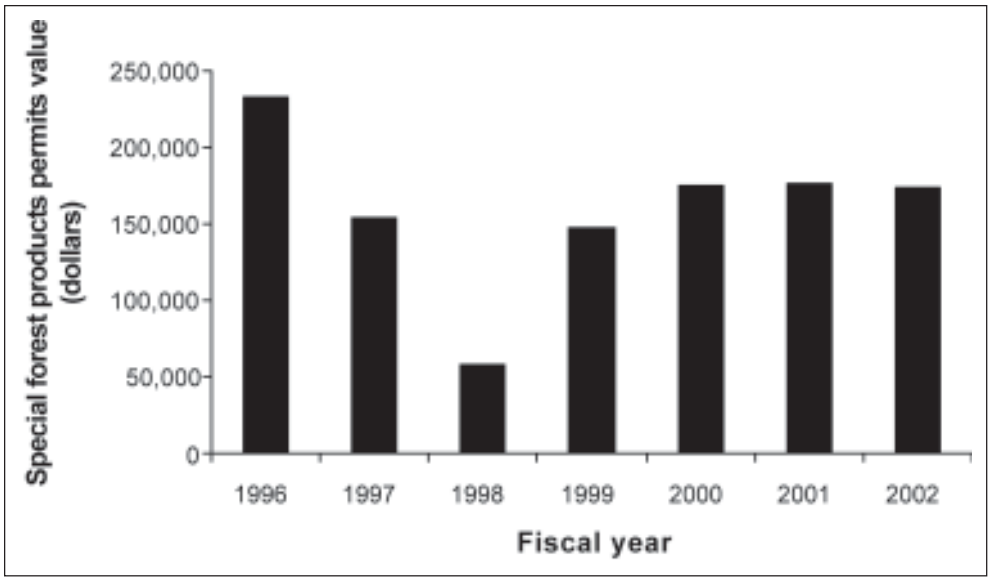

Figure 9—Value of special forest product permits sold, Mount Hood National Forest.

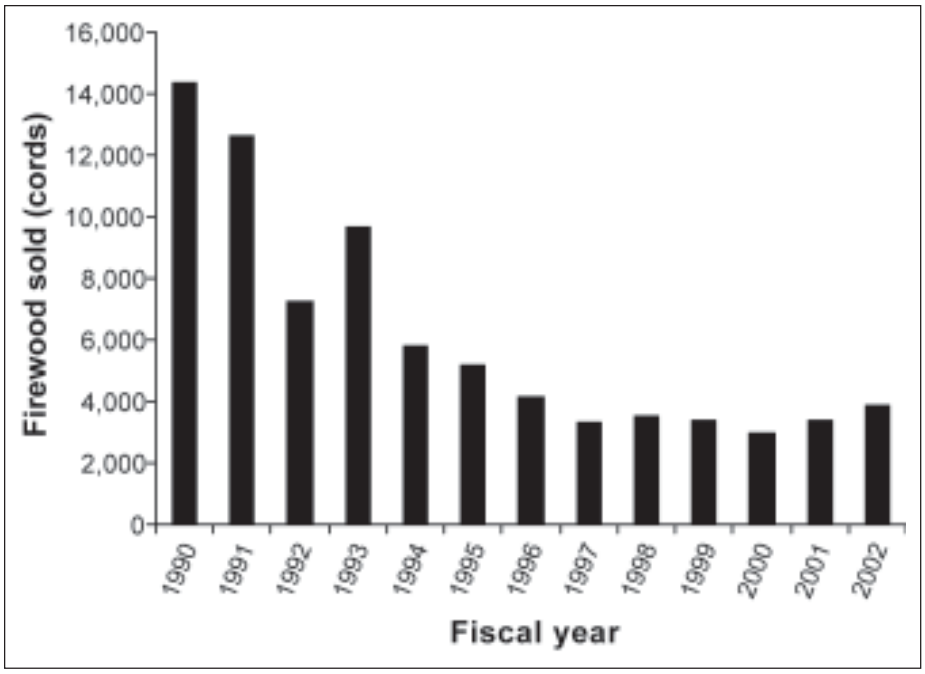

Figure 10—Volume of firewood sold, Mount Hood National Forest. (Piece x 1.1/80 = cords, cubic feet/80 = cords).

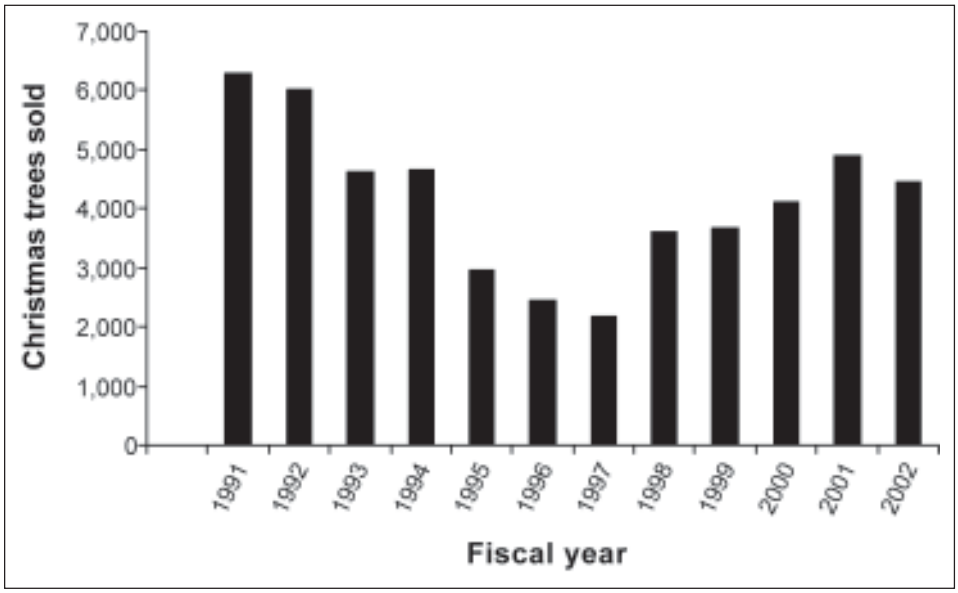

Figure 11—Number of Christmas trees sold, Mount Hood National Forest. (Linear feet/7 = 1 piece).

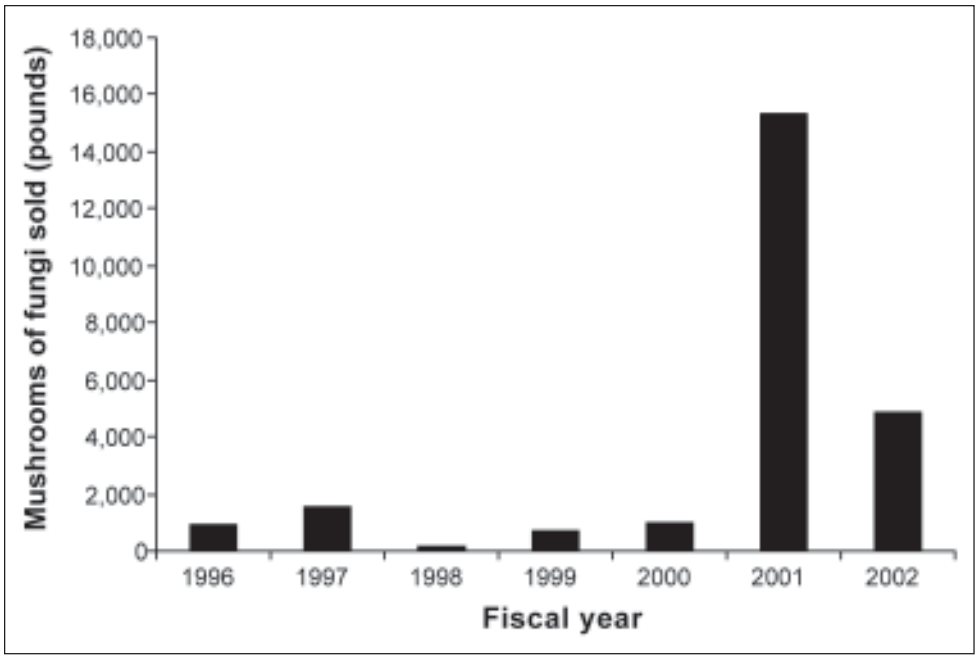

Figure 12—Quantity of mushrooms sold, Mount Hood National Forest.

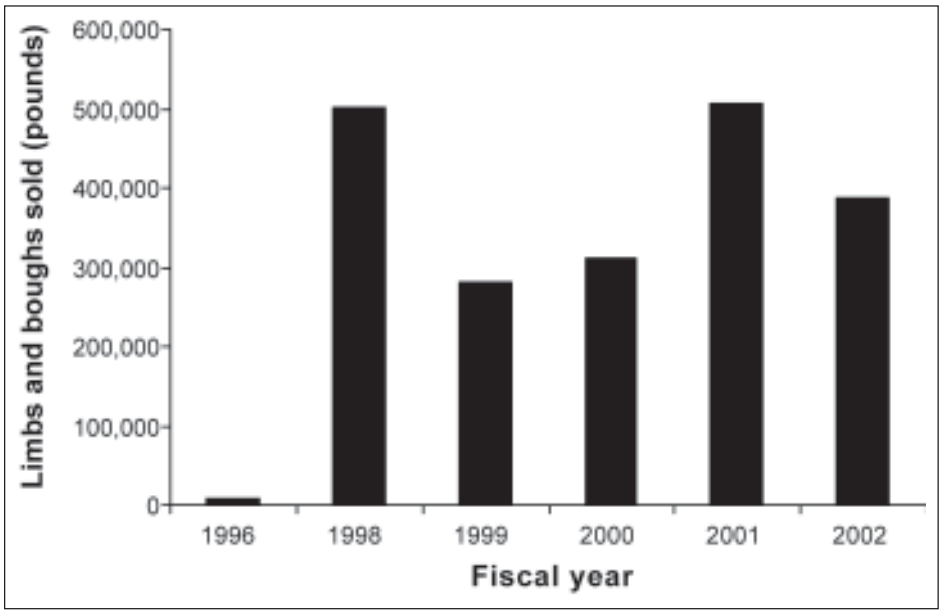

Figure 13—Quantity of limbs and boughs sold, Mount Hood National Forest. (1997 has been omitted owing to absence of verifiable data). (Tons x 2000 = pounds).

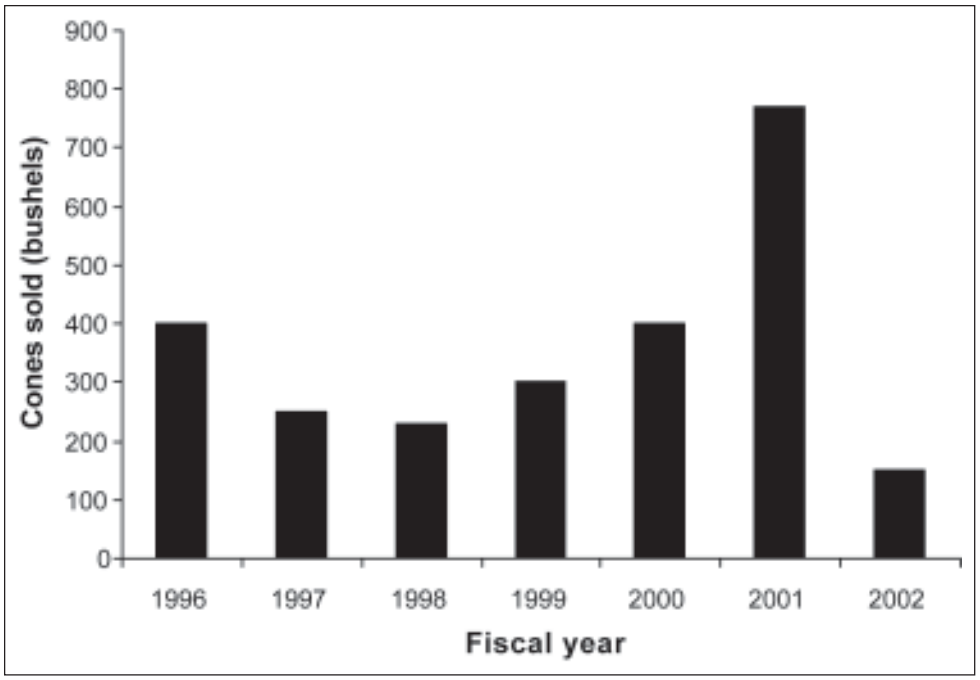

Figure 14—Quantity of dry and green cones sold, Mount Hood National Forest.

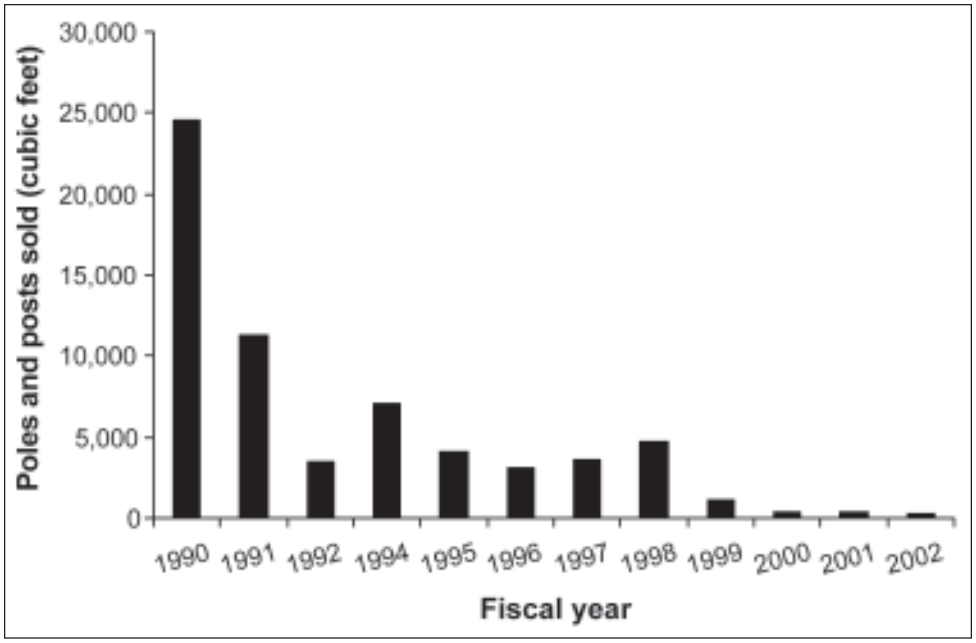

Figure 15—Volume of poles and posts sold, Mount Hood National Forest. (1993 has been omitted owing to absence of verifiable data). (Thousand board feet x 200 = cubic feet, linear feet x 0.3 = cubic feet, piece x 1.1 = cubic feet).

firewood, and boughs are expected to be lower in the future, owing to the decrease in acres of regeneration forests. The SPF program coordinator did not site specific reasons for trends, such as peak harvests in 2001 for many NTFPs.

Causes of change and the role of the Plan— The change in land use allocations, procedural requirements of the Plan, and the effects of decreased logging activity have combined to reduce the predictability of supply of NTFPs on the Mount Hood National Forest. The decrease in matrix lands and the allocation of land in late-successional reserves reduced acreage available for some NTFP harvesting activities. The ACS, and its accompanying riparian reserve requirements, impacted harvesting activities in riparian areas, notably ending cedar harvest for shakes and shingles. The change in land use allocations also shifted stand management regimes, which may one day reduce the supply of NTFPs available, such as Christmas trees and boughs.

Historically, SFP program operations have depended on the timber program. Timber sales and related management activities enhanced the availability of some NTFPs, such as Christmas trees and boughs. Roads constructed to facilitate timber harvest and provide fire protection also facilitated access to many NTFP harvesting sites. Given the high level of timber harvesting prior to the Plan, the NTFP manager typically viewed certain stands with the expectation they would be thinned and would issue NTFP permits accordingly. As stand management activities have become less predictable, the process for identifying sites for permits has been adapted to mesh with new forest management practices. For example, whereas permits once coincided with timber sales that were frequent, now they coincide with other activities, such as brush clearing along roads, that are less consistent and more varied. The SFP program administration is more challenging and time consuming as a result.

The cost of NTFP program administration has also increased. As fewer areas are available to harvesting activities, the process for identifying areas that meet the necessary criteria is more complicated and time consuming. Additionally, the changes in land management have led to a great deal of confusion among harvesters regarding what they can harvest and where they are allowed to harvest. This in turn has increased demands on the program manager to communicate with harvesters to address their concerns and to educate them on changes in forest management practices. Finally, many areas in the forest are no longer accessible owing to a decline in road maintenance activities and an increase in road closures. This is due to forest management changes that occurred as a result of the Plan's implementation and budget constraints.

Although access to NTFPs has declined overall, the supply of NTFPs remains sustainable. However, future supplies of some NTFPs may be available at a reduced level owing to changes in forest management practices tied to the Plan, such as a decline in easily accessible stands of young trees suitable for Christmas trees. Changes in demand for NTFPs, as indicated by permit numbers, are not clearly linked to changes in supply, with the possible exception of firewood. The change in firewood permits may result from reduced supplies related to the Plan, but the demand for permits may have diminished because fewer people are dependent upon firewood for heat. In short, the Plan has affected the SFP program by decreasing the area in which certain NTFPs are open to harvesting activity and by decreasing the predictability in some NTFP supplies.

Grazing

The range management program provides forage for domestic livestock on lands determined suitable and capable of producing range vegetation (USDA FS 2003). A program manager runs the range program and is responsible for meeting with permittees, monitoring permits for compliance, communicating with permittees about the need to move livestock, implementing range improvements, and more. The program manager shares his time with two national forests in the region. Owing to budgetary constraints there is no staff to assist the program manager. Consequently, the program has been slow in aligning itself with current management plans and programs.

The range program is relatively small, with five active allotments on three districts, and one vacant allotment. The

permittees are local individuals, some of whom have had permits in their family for many years. The allotments cover about 16 percent of the total acres on the Mount Hood National Forest. The vegetative composition on the allotments includes grass and shrub lands, meadow complexes, forested areas, and harvested lands, all located on the dry, eastern portions of the Mount Hood National Forest. Data supplied by Mount Hood National Forest indicate that between 1993 and 2002 allotted acres decreased, whereas authorized and permitted animal unit months (AUMS) increased (table 1).

An emerging issue for the range program is user conflicts resulting from unexpected encounters between recreationists and livestock. This has occurred owing to increased recreational uses. Allotment permits are renewed every 10 years, and there is likely to be discussion about whether or not to renew permits in areas where recreation use is high. Current management emphasis is on preventing resource damage, primarily in riparian areas. To do this, the program identifies resource improvements, such as fencing or water developments for livestock that are incorporated into the management plan for each allotment.

Causes of change and the role of the Plan—

To a great extent, the Plan is directed at achieving certain forest conditions and addressing issues on the west side of the Cascades, whereas the range program is implemented predominately on the east side of the Cascades. This has led to some challenges in interpreting and implementing the range program in the context of the Plan. These issues include land use allocations, procedural requirements, and the effects of changes in harvest management regimes.

The change in land use allocations has had relatively minor effects on the grazing program. One area where changes have been felt is in the number of acres of transitory range available to livestock. Owing to the decrease in timber harvesting and related activities, less acreage is open to temporary use by livestock. This trend is expected to increase and may have implications for allotments where transitory range makes up a significant portion of the available forage and where areas with forage converge with recreation sites.

Plan procedural requirements have increased the grazing program's costs as well as the demands on the program manager's time. Interpreting the ACS in the context of range management has been difficult; specifically, the program has struggled with clarifying how site-specific actions (e.g., fencing off a stream area) fit in the context of broader watershed management goals. Furthermore, it has been challenging to ensure compliance with procedural requirements in a cost-effective manner when dealing with allotments that cover up to 56,000 acres. The program manager has dealt with this issue by stratifying the acreage and focusing management attention on riparian sites. Another challenge has been communicating with and educating cattle grazers about the Plan's management standards.

The supply of land for the grazing program has remained predictable. How much land will be available for

Table 1—Grazing on the Mount Hood National Forest, 1993 and 2002

Year	Active allotments/leases	Allotment	Permittees	Authorized AUMs[a]	Permitted AUMs
	Number	*Acres*	——— *Number* ———		
1993	5	159,787	8	3,492	4,089
2002	5	152,564	9	5,587	5,613

[a] AUMS are animal unit months.

Sources: These data are from the Northwest Forest Plan Implementation Monitoring Module, which in turn obtained the data from the Forest Service INFRA database.

future use by livestock, however, remains an open question given the costs of administering the program and the increasing likelihood of user conflicts.

Minerals

The minerals program provides a flow of mineral resources while maintaining compatibility with other resources potentially affected by mineral extraction (USDA FS 2003). The minerals program on the Mount Hood National Forest is relatively small compared with other national forests, where there is higher supply and demand for minerals. Rocks are acquired by a variety of contractors and users; the Oregon Department of Transportation is the single largest user of minerals sold on the forest. Personal use permits for small quantities of mineral material are common on the Mount Hood National Forest, owing to the proximity of the forest to the heavily populated Portland metropolitan area. One employee manages the mineral program for the entire forest. This person is the only geologist on the forest and provides expertise to other programs where necessary. The forest has large quantities of high-quality rock, and with proper management, should be able to satisfy demand for many years (USDA FS 2003). Sources of easily accessible material known as "landscape rock" are being depleted and efforts to create additional loosened, accessible material may be needed.

The overall budget and staffing declines on the Mount Hood National Forest have not affected the personal use component of the mineral program; permits continue to be issued from the front desks of each district office. Implications of budget decreases on long-term planning are unknown. Currently funds are not going toward long-term planning for potential quarry development. The tabulations below indicate there have been few new mining claims and little mining activity since the Plan was initiated. The effect of the Plan on the minerals program has been minimal. Some quarries have been reduced or eliminated in the past decade, but not as a result of the Plan. Some expansions have been delayed owing to complications arising from survey and manage procedures. Because the forest's use of the material has decreased over the years with the decline of roadwork related to the timber program, the forest anticipates being able to meet demand for resources with its existing quarries.

Locatable minerals activity Mount Hood National Forest

Year	New claims located	New plans of operation
1991	2	No data
1995	0	0
1999	0	2
2003	0	0

Salable materials removed from Mount Hood National Forest

Year	Amount
	Tons
1994	No data
2000	158,538
2003	14,029

Recreation

The recreation program provides a range of year-round developed and dispersed recreation opportunities (USDA FS 2003). The Mount Hood National Forest estimates there were just over 4 million recreational visits each year. Most recreation users are from the Portland metropolitan area, but visitors also come from across the Nation and around the world. A recreation program officer works from the supervisor's office; in addition each district has a recreation manager. Some districts have one or two additional staff in the recreation program or staff who share duties with other programs.

The Mount Hood National Forest contains a number of developed recreation facilities of varying types, including Timberline Lodge and facilities that are geared toward auto camping, boat launching, or picnicking. Recreation use on undeveloped sites occurs throughout the Mount Hood National Forest. Dispersed recreation activities include hiking, rafting, kayaking, cross-country skiing, snowshoeing, and mountain climbing. The wilderness areas are smaller than many other Northwest wilderness areas, and visitor trip

duration is generally short. Recreation managers report that most recreation use is day use, and overnight uses are decreasing. Currently, 85 percent of the use of popular wilderness trails is day use (USDA FS 2003). Between 75 to 90 percent of all campsites are operated by concessionaries. Campground concessionaires of several popular campgrounds report that the campgrounds are often below full occupancy, particularly midweek.

Table 2 shows an increase in the number of outfitter and guide permits issued from 53 in 2000, to 89 in 2002. This increase may result from the expansion of the permitting system, particularly for rafting on the Clackamas River. The recreation program's budget has remained stable since the early 1990s. At the same time, receipts have approached the level of timber program receipts, as timber receipts have steadily declined (see "Forest Revenue" section). The periodic high points on recreation receipt data may coincide with good snow years when ski area use is higher (fig. 16). Overall, visits for skiing have steadily increased since 1994. Program specialists differ in their views regarding increases in use of the forest for recreational purposes, but all agree recreational uses are diversifying. Snowboarding, paint balling, mountain biking, and off-highway vehicle (OHV) use have all increased; snowboarding and paintballing represent new uses.

Program officers reported the Plan affected the recreation program. Most of the impacts derive from the procedural regulations of the Plan rather than from land use allocations. The Plan's procedural requirements have increased the time and cost of the planning and administrative processes. Survey and manage requirements, in particular, were identified as increasing the cost and time

Table 2—Recreation data, Mount Hood National Forest

Recreation indicator	1989–1990 (unless otherwise noted)	2001–2003
Annual forest visits		4,076,119[b] (2003)
Developed campgrounds[a]	There are over 100 developed	95[c] (2003)
Picnic sites	campgrounds and picnic sites	18[c] (2003)
Number of trailheads		131[c] (2003)
Miles of trails	1,200[a]	
Miles of system roads[d]	3,858 (1989)	3,430 (2001)
Recreation residences[c]	544 (2000)	589 (2002)
Acres of wilderness	186,200[a]	189,200[e]
Number of outfitter/guide permits[c]	53 (2000)	89 (2002)
Number of downhill ski areas	5[a]	5[f]
Lodges/hotels		3[c] (2003)

[a] Source: USDA FS Mount Hood National Forest 1990.

[b] Source: Kocis et al. 2004.

[c] Source: USDA Forest Service 2004 INFRA database.

[d] Source: Erkert 2004.

[e] Source: http://www.fs.fed.us/r6/mthood/

[f] Source: Hardcopy hand-written records kept by individual ski resorts, which use them to report to the Pacific Northwest Ski Areas Association.

Note: The Mount Hood recreation program officer stated that the recreation residence data reported here are inaccurate, and that the number of recreation residences did not change between 2000 and 2002. The number of lodges/hotels on the forest did not increase between 2000 and 2003.

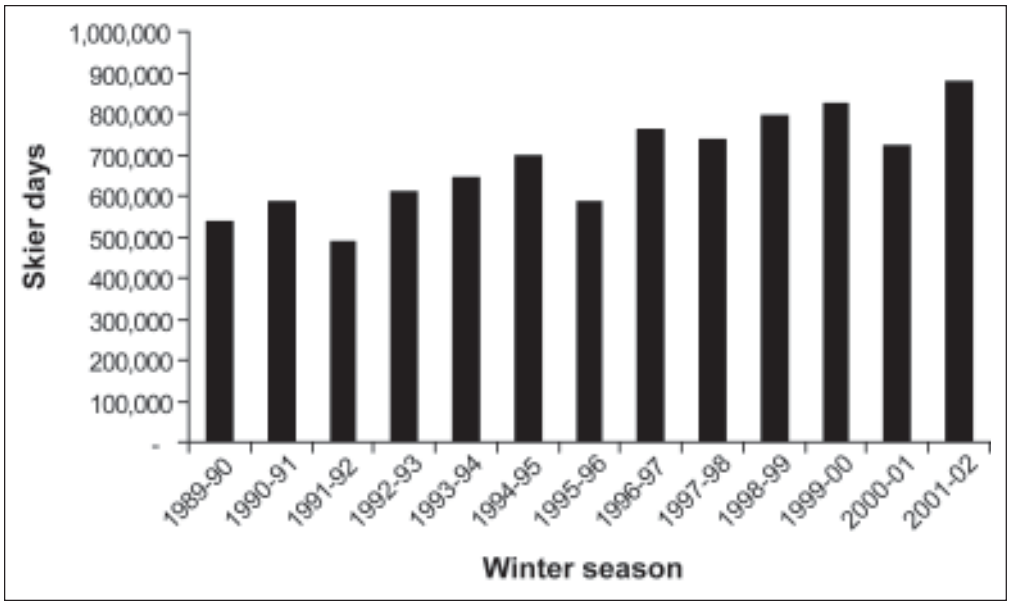

Figure 16—Annual visits to Mount Hood ski areas.

of the decisionmaking process. Trail construction or reconstruction and hazard-tree removal were two activities cited where survey and manage studies are required before management activities can take place. The cost of the studies places a financial strain on the recreation program.

High levels of planning, preparation, and costs are associated with the Plan for most recreation development activities. Plan regulations have reportedly reduced the program's flexibility to the point of inefficiency. Besides increasing the complexity and cost to the administrative process, the Plan also created a significant amount of uncertainty for the recreation program. This uncertainty results from both lack of clarity over how to manage recreational activities in the new land use allocations and increased public scrutiny of recreation projects. The lack of clarity about the aquatic procedural requirements has resulted in uncertainty when dealing with recreation sites that intersect with riparian areas. Two affected recreation resources include dispersed campsites and recreational residences, both of which often fall within riparian areas and are prevalent throughout the Mount Hood National Forest. Several campsites have been closed, and recreational residence permit renewals may be contingent upon meeting the requirements of the ACS. This reportedly affects the complexity and cost of the planning process.

These issues contribute to the concern that tradeoffs are made in recreation management between activities that can get through the procedural process in the quickest and least costly way, versus activities that might provide the biggest enhancements in long-term resource integrity. In addition, prior to the Plan, managers could make decisions and act in a timely manner. Managers now perceive that it is increasingly difficult to conduct business in a timely way, a situation they view as problematic given the increased demand for an array of recreational uses.

In addition to the effects of the Plan, broader changes in recreational uses on the forest and management trends have also affected the recreation program. These changes include the reduction in timber harvests, a shift to use of concessionaires and permittees, and the change in demand for recreational opportunities.

The diminution of the timber program has added to the management costs that the recreation program must pay. For example, the timber program formerly supported

the majority of the forest's overhead costs. As a result of the decline in the volume of timber sold and the associated decrease in funds available for the timber program, the recreation program has assumed an increased share of overhead costs even though its budget has remained relatively flat.

Another key change in recreation management is the Forest Service's shift from directly providing recreational services to delivering recreation services to visitors largely through concessionaires and permittees, including ski area, rafting, and campground vendors. Recreation program managers expressed concern that this trend decreases opportunities for the Forest Service to educate and communicate with the public. This comes at the same time as office closures, reduced operating hours, and increased use of automated phone systems. Many Forest Service personnel believe the agency's lack of visibility negatively affects their ability to manage the forest and carry out its mission.

Finally, there has been an increasing demand for a wider array of recreational opportunities. The Mount Hood National Forest is struggling to ensure that its infrastructure is adequate for meeting the needs and expectations of visitors. The Mount Hood National Forest views communication as particularly important for responding to public needs, to clarify policy (i.e., such as why certain roads are closed), and enforce regulations all while still meeting visitors' expectations. It is difficult to determine if the supply of recreational opportunities is adequate to meet current demand, and staff members are concerned whether the Mount Hood National Forest will be able to maintain even its current level of services over the long run.

Heritage and Scenic Program

The standards and guidelines of the Forest Plan stipulate that the Heritage Program is to locate, protect, maintain and/or enhance significant prehistoric and historic sites for scientific study, public enjoyment, education, and interpretation. In addition, the program ensures that American Indian rights are protected on national forest lands and that appropriate coordinating activities occur (USDA FS 2003). The Heritage Program manager also manages the Columbia River Gorge National Scenic Area.[4] The forest's fiscal year 2002 monitoring report describes recent consultations with nearby tribes, namely the Confederated Tribes of the Warm Springs Reservation, but does not provide information about how the program has changed since the Plan.

Fire

The fire management program is an umbrella program encompassing the fire prevention, preparedness, suppression, and emergency response, aviation, and fuels programs on the forest. The forest also dispatches its personnel to other regional and national fire assignments.

The hazardous fuels program coordinates a collaborative approach to reduce wildland fire risk to communities and to restore and maintain land health within fire-prone areas (USDA FS 2003). The fuels program is part of the fire management program but is integrated with timber sales, precommercial thinning, and other aspects of the timber program. The fuels program on the west side of the Cascades historically has been fairly small. The program on the east side, although not large, has been stable. The Mount Hood National Forest projects that it will treat 800 acres annually for hazardous fuels. Planning for prescribed fires is more extensive than it once was.

Although humans are the most common cause of fire on the Mount Hood National Forest (fig. 17), they do not result in the greatest amount of burned acreage. These fires typically occur in the more popular recreation areas and are expected to increase as the number of recreation users and types of uses expand. In terms of acreage burned, between 1998 and 2002, lightning-caused fires burned 48.7 percent of the total acres burned for that period. Human-related fires burned 5.57 percent, and fires of unknown origin burned 45.5 percent (USDA FS 2003). According to the fire program officer, 98 percent of the fires between 1998 and 2002 were less than 10 acres. Five fires that burned 10 or more acres

[4] This person is now also responsible for the Heritage Program on the Gifford Pinchot National Forest.

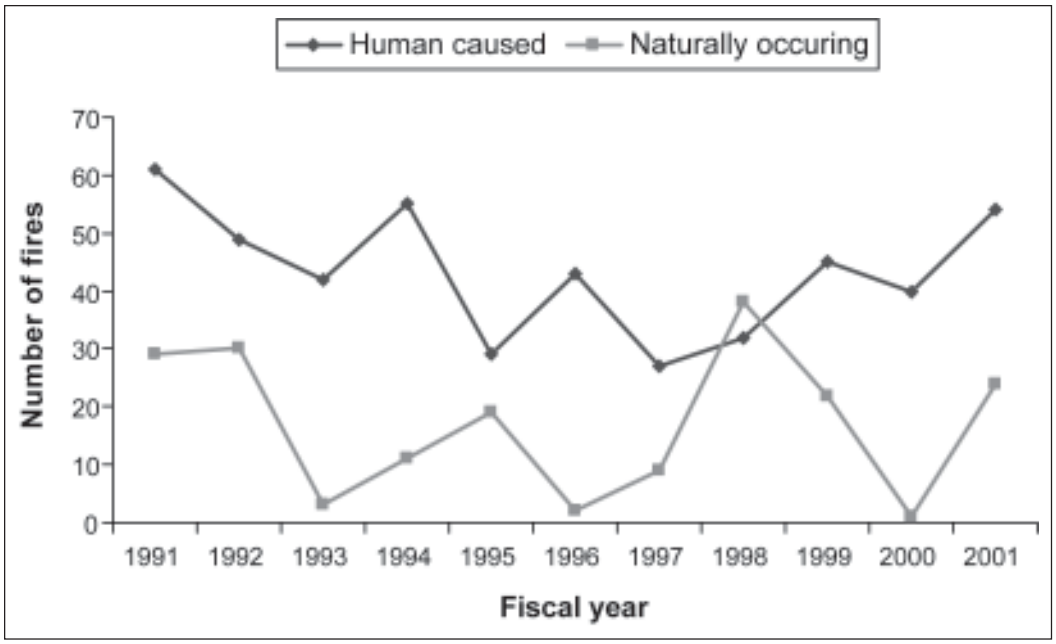

Figure 17—Human-caused and naturally occurring fires. Source: USDA FS 2002.

burned 87 percent of the total acres burned. Standards and guidelines for some of the new land use allocations, such as LSRs and riparian areas, have reduced the acreage and ability to work in areas historically considered for fuel treatments (fig. 18).

Roads

The roads/transportation program seeks to provide safe and efficient access for people who use the transportation system for recreation or management of the forest (USDA FS 2003). There are approximately 40 engineers in the roads and engineering program. The roads infrastructure on the Mount Hood National Forest is extensive, owing to decades of intensive timber extraction. There are over 4,000 miles of roads on the Mount Hood National Forest.

Reducing road densities in key watersheds is a primary road objective related to the Plan and is reflected in road obliteration and decommissioning trends. Figure 19 shows road work trends between 1991 and 2001. The spike in road reconstruction in 1997 reflects repairs made in response to damage caused by storm events in 1996. Since 1992, road densities have been reduced in 12 key watersheds and remained unchanged in 13 key watersheds (USDA FS 2003).

The roads program has been downsized as has the road system. Many roads have been closed or are maintained at a lower level of service. Where there are typically a number of routes into key recreation areas, the Mount Hood National Forest is identifying and targeting one route into each of these key recreation areas for road maintenance. The roads/transportation program is currently maintaining and improving 620 miles of mainline roads, and decommissioning, closing, or downgrading maintenance levels on the remaining 3,450 miles. This has resulted in reduced motor vehicular access to recreation areas and fewer landslides, subsequently decreasing the sediment load in waterways.

Project planning now involves specialists who carry out procedures required under the Plan. As a result, it reportedly takes longer to get road work done now than before the Plan. In some cases, the delays have increased the cost of management activities as roads have degraded further while studies were being conducted. On the positive side, following Plan procedures has reportedly led to the growing awareness of the interconnectedness of various types of management activities and better understandings of how management actions in one program potentially affect other

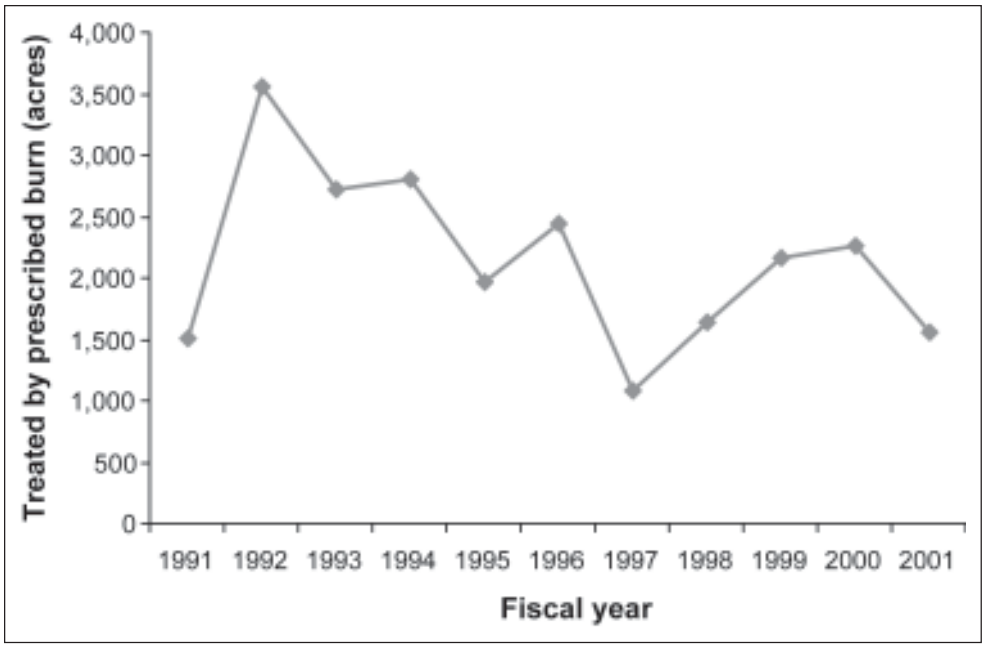

Figure 18—Acres treated by prescribed fire. Source: USDA FS 2002.

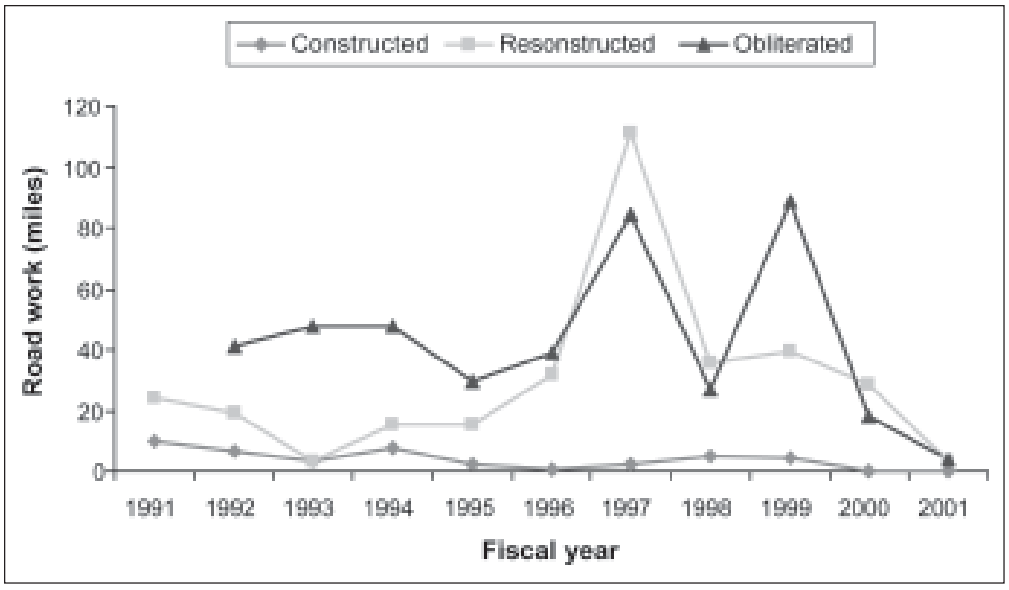

Figure 19—Road work.

programs and resource integrity. The connections between the roads program and other programs have increased, owing to budgetary necessity and a more holistic view of resource management. Overall, the number of miles of roads has been reduced, and there is concern whether the supply is adequate to meet agency and public demand.

Jobs and Income Associated With Timber, Grazing, and Recreation

Change in Budget

The Mount Hood National Forest's budget consists of permanent and trust funds, income from its various programs, including recreation, and annual federal allocations. The Forest Service receives its reforestation budget through trust funds and annual appropriations. Figure 20 shows a steady decline and leveling off of the annual budget for the Mount Hood National Forest from 1993 to 2003. Funding from permanent and trust funds declined by 82 percent. Another source of revenue that contributes to the forest's annual budget is the Recreation Fee Demonstration Program (Fee Demo).

The Knutson-Vandenberg Act of 1930 (act) established a special trust fund to collect a portion of timber sale receipts to pay for reforesting the area from which the timber was cut. The act provided a way for national forests to tap into funds independently of appropriations from the general treasury. The act was amended in 1976 to allow the Forest Service to use these funds for other activities, such as creating wildlife habitat or improving recreation facilities on the sale area lands. The Forest Service's oversight and management of the Knutson-Vandenberg Trust Fund (KV) and the reforestation program is decentralized. District rangers are ultimately responsible for overseeing the planning and implementing of KV projects. Figure 21 shows budget expenditures for 1993 to 2002, with predicted amounts for 1990. The KV funds were an income stream tied to timber sales that funded management activities in a number of programs. According to interviewees, without timber sales, some of the activities supported through KV funds are no longer receiving funds although the management activities they supported are still necessary. This is particularly evident in the road system. Many interviewees noted the loss of KV trust funds and the number of activities they supported. For instance, KV funds were used in the range program for range betterment, fences, water development, and salary support. For the range program, the decrease in KV funds has been substantial.

The Fee Demo Program was authorized by Congress in 1996. The program provides incentives to agencies to charge fees by allowing the agencies to retain all the revenues collected. Eighty percent of the fees are used for improvements at the site where the fees were collected and the remaining 20 percent are used agencywide.[5] Although the Fee Demo Program has tripled recreation revenues across the National Forest System, they doubled on the Mount Hood National Forest, increasing from approximately $150,000 to $370,000 annually.[6] These funds have helped to offset the loss of other funds and work that once resulted from the timber program and harvest activities. Recreation program managers say they now use Fee Demo dollars to support activities such as brushing (brush removal), grading, and signing of roads that were once funded through other programs. Such activities provided recreation goods and services, but were largely supported through timber budgets. One manager suggested that if the forest achieved PSQ, they would not be using Fee Demo dollars to brush roads, but would use those dollars for other resource improvements. Recreation managers rely heavily on these funds for trail maintenance and trailhead improvements.

The Pacific Northwest Region (Region 6) has been funded at levels that would permit the region's forests to produce only 38 to 42 percent of its PSQ, implying that even if the Mount Hood National Forest wanted to harvest at Plan levels, it would be hard pressed to do so. The timber orientation of the budgeting process does not reflect the mix of forest and recreation management needs of the

[5] Interim Report to Congress 2002.

[6] Estimate provided by Mount Hood National Forest.

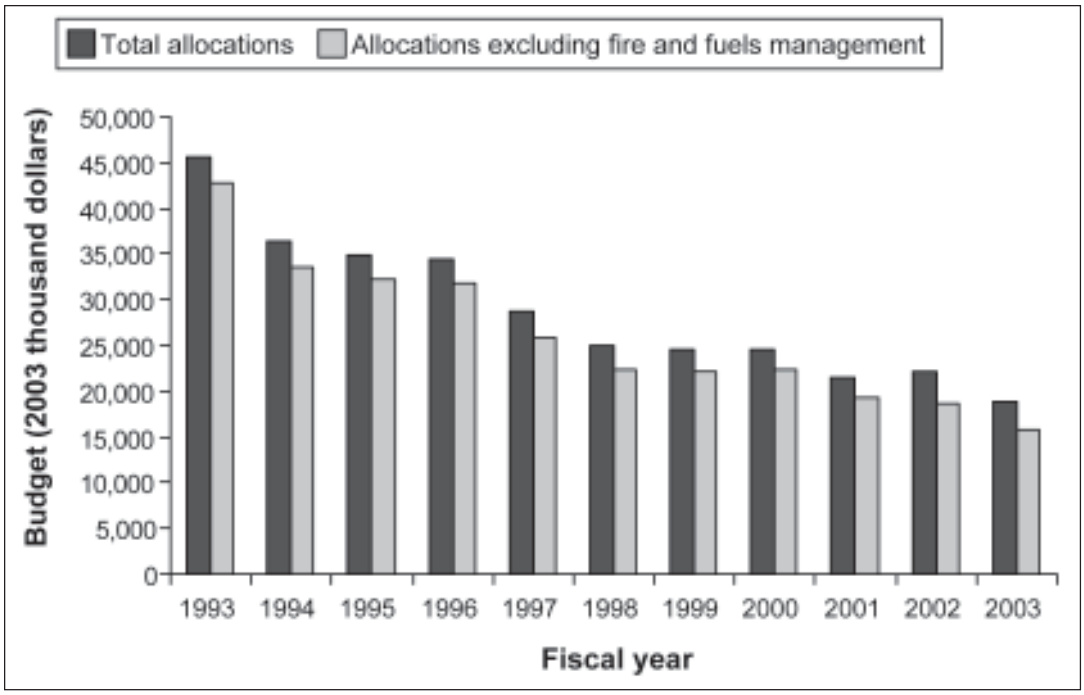

Figure 20—Budget, Mount Hood National Forest.

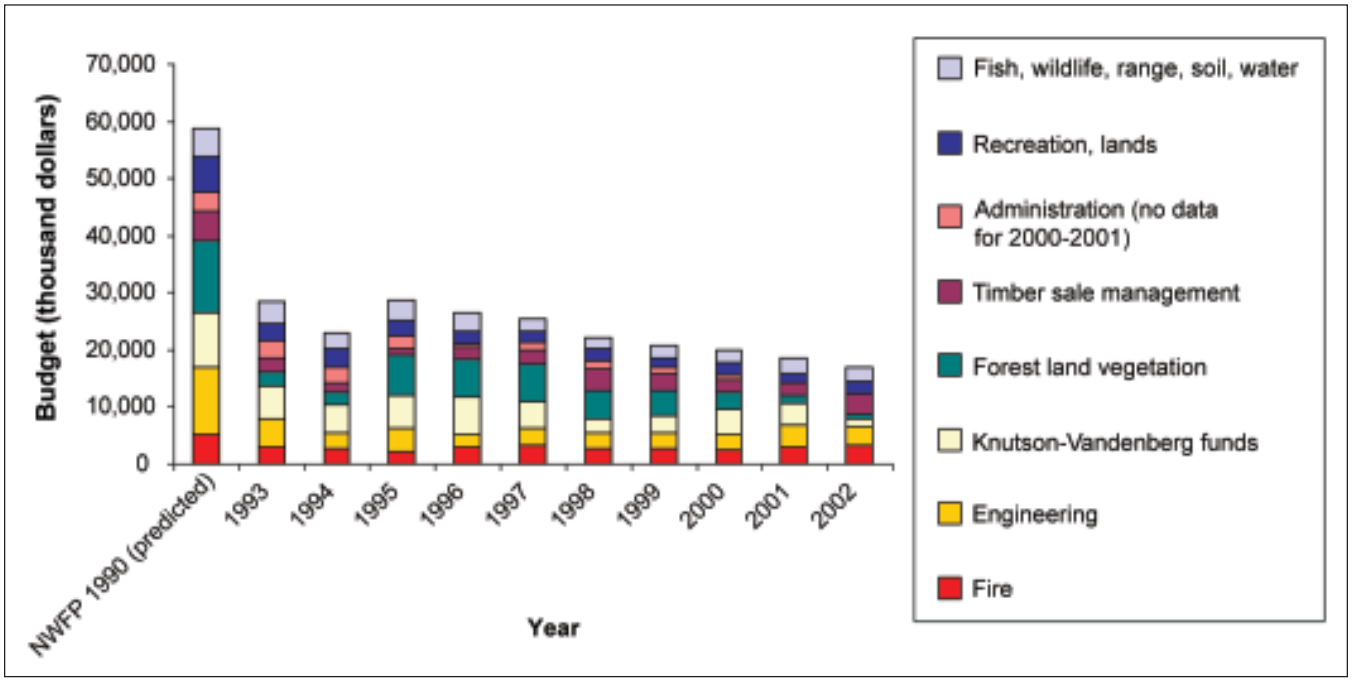

Figure 21—Budget by program area, Mount Hood National Forest. (Source USDA FS 2003).

Mount Hood National Forest. Such needs are brought on by 4 million recreation visitors a year and the Bull Run watershed that serves over a million residents and businesses. Managers are concerned that if the Forest Service does not have the financial resources to meet current demands, it will be unable to successfully manage its natural resources for the future.

Change in Staff

The number of employees on the Mount Hood National Forest dropped from over 700 in 1991, to about 320 full-time equivalents (FTEs) in 2000 (fig. 22). In 2004, there were 240 full-time employees. Because of the difficulty in obtaining accurate data, we were not able to discern employment changes by general schedule (GS) levels. Staffing cutbacks particularly affected the timber program and related specialist positions, including wildlife biologists and botanists. With fewer specialists, there are a limited number of employees qualified to perform specific functions. Reportedly, when specialists are not available to work on a project, projects are put on hold. Additionally, the reduced number of specialists has increased and diversified the responsibilities of remaining specialists. A commonly held perception is that backup people are no longer around, employees are spread thin, and programs are "just holding on" in their ability to achieve program goals. There are fewer field staff members to support program areas, and program and project managers are now doing work that was performed by field staff employees, such as planning and supervising volunteer activities. Program managers for the special forest products, grazing, and minerals programs are the only employees of their programs and cover the entire forest, whereas a decade ago they had support staff on some districts. Finally, many of the employees that remain are at higher grade levels and have higher salaries. This contributes to the budget concerns within many programs.

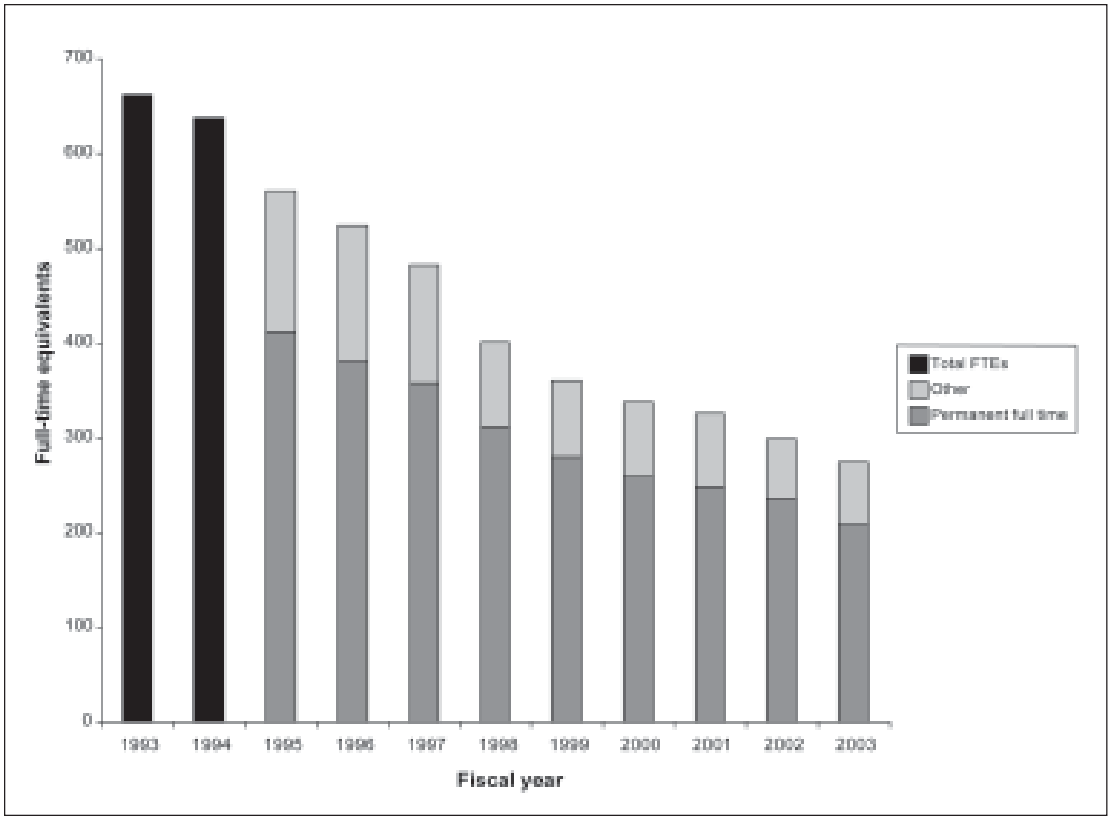

Figure 22—Full-time equivalents (FTEs), Mount Hood National Forest. Source: Stuart 2006.

Reorganization

Reorganization on the Mount Hood National Forest took place to address declining budgets and management needs, owing in large part to the diminution of the timber program. For many program officers, "reorganization" meant moving employees from the timber program into other programs. Reorganization was also part of the forest's effort to meet high-priority programmatic areas, such as meeting PSQ and emphasizing partnerships and collaboration. The program areas that serve collaborative functions, namely public relations, volunteer coordination, and partnerships, have recently integrated to reduce duplication of services, to enable better communication, coordination, and service delivery, and to serve as a resource for staff that engage in partnerships.

Forest Revenue

Timber receipts, which include purchaser road credits, KV collections, and salvage sale fund payments, have been and continue to be the largest component of collections (fig. 23). The next most important program for collection is recreation (fig. 24). The majority of recreation fees collected by the Forest Service are fees from special use permits such as recreation residences, ski areas, and outfitter guides. These fees all go to the U.S. Treasury and are not retained by the Forest Service. The recreation fees generated by concessionaires operating Forest Service facilities are based on a percentage of revenue generated by the facilities and can be used for landlord maintenance of the facilities. Fees received from facilities managed by the agency are deposited in the U.S. Treasury and are not retained for maintenance. Receipts collected under the Fee Demo program are not a component of the Payments to States[7] revenue sharing.

[7] Since 1908, 25 percent of Forest Service revenues have been returned to states in which national forest lands are located as payment in lieu of taxes. Because receipts from timber sales fluctuated so much over time, the Secure Rural Schools and Community Self-Determination Act of 2000 (referred to as Payments to States) was developed to stabilize payments to counties. Beginning in 2001 and through September 30, 2006, payments are based on the average of the state's high three payments between fiscal year 1986 and fiscal year 1999.

Figure 23 was presented to several program managers to obtain employee perceptions of forest revenue trends in the 1990s. The recreation program manager commented that the closing gap between timber and recreation receipts was consistent with her perception of trends, but does not reflect the actual economic benefit of the resources. She suggested that the value of recreation resources to local communities and the region, through purchases of recreation goods and services, greatly exceeds the value of timber resources. She also said that the value of the Bull Run Watershed as a source of clean water for the Portland metropolitan area also exceeds the value of the timber resources. One recreation program manager commented that the convergence of the timber and recreation receipts lines in figure 23 would have been inconceivable 15 years ago.

Role of Plan in Changes in Budget and Staff

Line officers and program specialists had varying perceptions about the effect of the Plan on staffing and budget levels. Some interviewees attributed budget and staff declines to the Plan. Some were not clear about the reasons for change. A few noted that reduced timber harvests have led to decreased program budgets and staff.

The 82-percent decline in KV funds–the largest single funding stream–reduced funds available for roads and restoration activities. This is a direct result of the reduction in timber harvests, in part owing to the PSQ set by the Plan, which is lower than the harvest levels in previous decades. Many agency personnel report that the Mount Hood National Forest's budget has been reduced because of the lower PSQ and the forest's inability to attain the PSQ.

The Plan had both intended and unintended consequences on the flow of socioeconomic benefits associated with the forest. Many interviewees noted the connection between the declining timber program budget and the subsequent impacts on other programs. As a line officer described, a decade ago the forest was a large organization with the institutional capacity to carry out many forest management activities. Back then, it was appropriate for the timber program to carry a large share of costs for facilities, firefighting, and other functions because it was generating the need for those specialists (e.g., wildlife biologists,

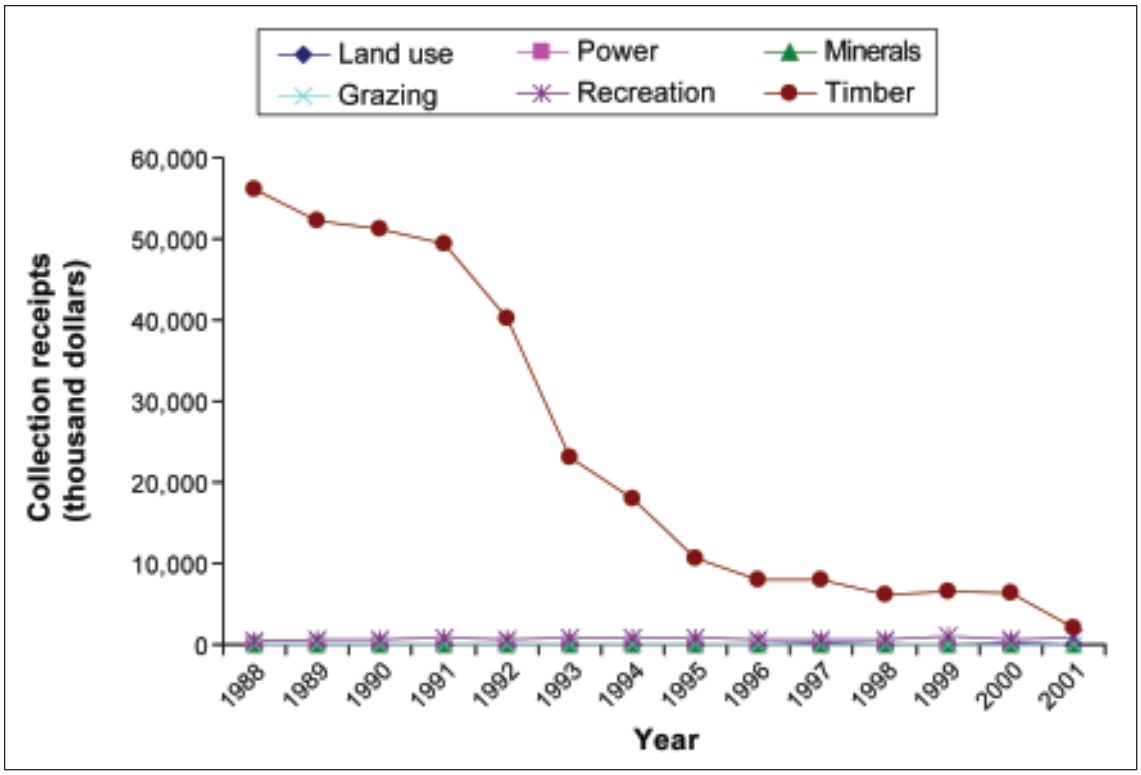

Figure 23—Mount Hood National Forest collection receipts by program area.

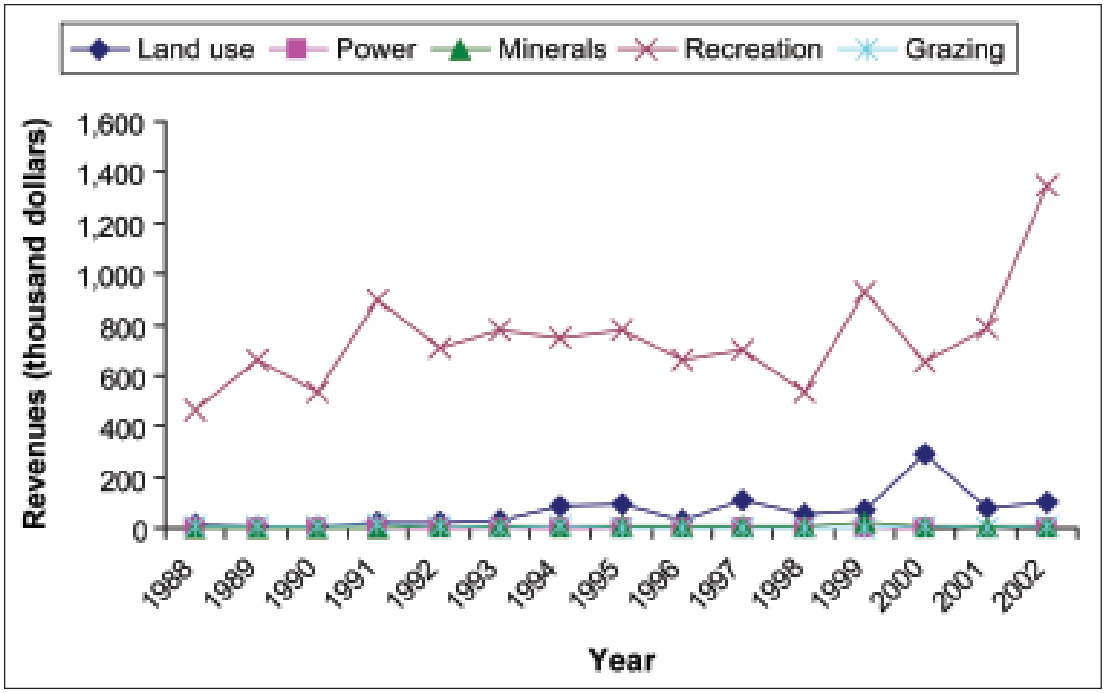

Figure 24—Mount Hood National Forest collection receipts by program area, excluding timber.

engineers, etc.) and infrastructure. The forest has encountered difficulties in reconfiguring its budgets and programming to fit the new management conditions engendered by a considerably scaled-down timber program. In part, these difficulties stem from the large number of functions the timber program performed or funded beyond timber management. In the late 1980s and early 1990s, the timber program's budget items constituted roughly 60 percent of the forest budget. Staffs were organized and foci were set based on supporting the timber program. When the timber program's budget declined, other program areas that had previously received a large portion of their funding through timber-related activities, also experienced declines in their budgets. Monies to support programs, such as wildlife biology and fisheries, both of which acquired greatly enhanced relevance beyond their timber management support functions under the Plan, were not forthcoming. Thus, when the timber program declined, the budget for supporting those specialists decreased while the need for their services increased under procedural requirements under the Plan.

Procurement Contracting for Land Management

Land Management Through Procurement Contracting

Between 1990 and 2002, the Mount Hood National Forest spent $76.2 million procuring land management services. Of this, the forest spent $29.7 million on labor-intensive activities, $33.3 million on equipment-intensive activities, and $13.1 for technical work. The Mount Hood National Forest procured a total of $19.7 million during 1990-92 and $16.8 million during 2000-2002, a 15-percent decline (fig. 25). The 1997 spike most likely reflects activities related to storm events in 1996.

Most of the Mount Hood National Forest is located in Hood River and Clackamas Counties. Data from the Federal Procurement Data Center show that, in 1990-92, the Forest Service spent $15 per acre on national forest land in Hood River County and $18 per acre in Clackamas County on the procurement of land management services. Indicative of the overall decline in spending, by 2000-2002, these numbers dropped to $8 and $15 per acre, respectively.

Spending on labor-intensive contracting declined between 1990 and 2002 while procurement spending for equipment-intensive and technical work increased (fig. 26). The change in contract activities is reflective of a shift in forest management activities from labor-intensive activities to more equipment-intensive and technical work. For example, spending on tree planting, the largest category of labor-intensive activities, declined by over 87 percent from 1990-92 to 2000-2002 (fig. 27). Simultaneously, procurement of production of seeds and seedlings, the raw materials of tree planting activities, declined. Unlike spending for tree planting, spending on thinning declined from 1990-92 to 1995-97, but increased again in 2000-2002. Among equipment activities, the most noticeable change was the increase in spending over time on road construction (fig. 28). The forest's contract registers show that of its $4.6 million road construction spending in 1995-97, at least $609,000 was spent on road obliteration and decommissioning. The remaining amounts could not be more clearly identified than the general category of "road work." Additionally, in 1995-97, the forest contracted $785,000 worth of flood-related road maintenance and another $733,000 in 2000-2002. Other road maintenance activities included bank stabilization, reconstruction, ripping, and subsoiling.

In addition to increased spending on equipment-intensive contracting, the forest also increased its spending on technical work. The category, "other natural resource management and conservation" increased throughout the study period and represented the largest portion of technical contracting spending (fig. 29). This category includes surveys for threatened and endangered species. The forest's contract registers document $276,000 in 1990-92, $948,000 in 1995-97, and $617,000 in 2000-2002 in contracted surveying. There are likely other surveys recorded only in the Federal Procurement Data Center data that could not be distinguished from "other natural resource management and conservation" activities. In addition to increased spending on surveys, the forest spent more on environmental assessments and natural resource and wildlife studies,

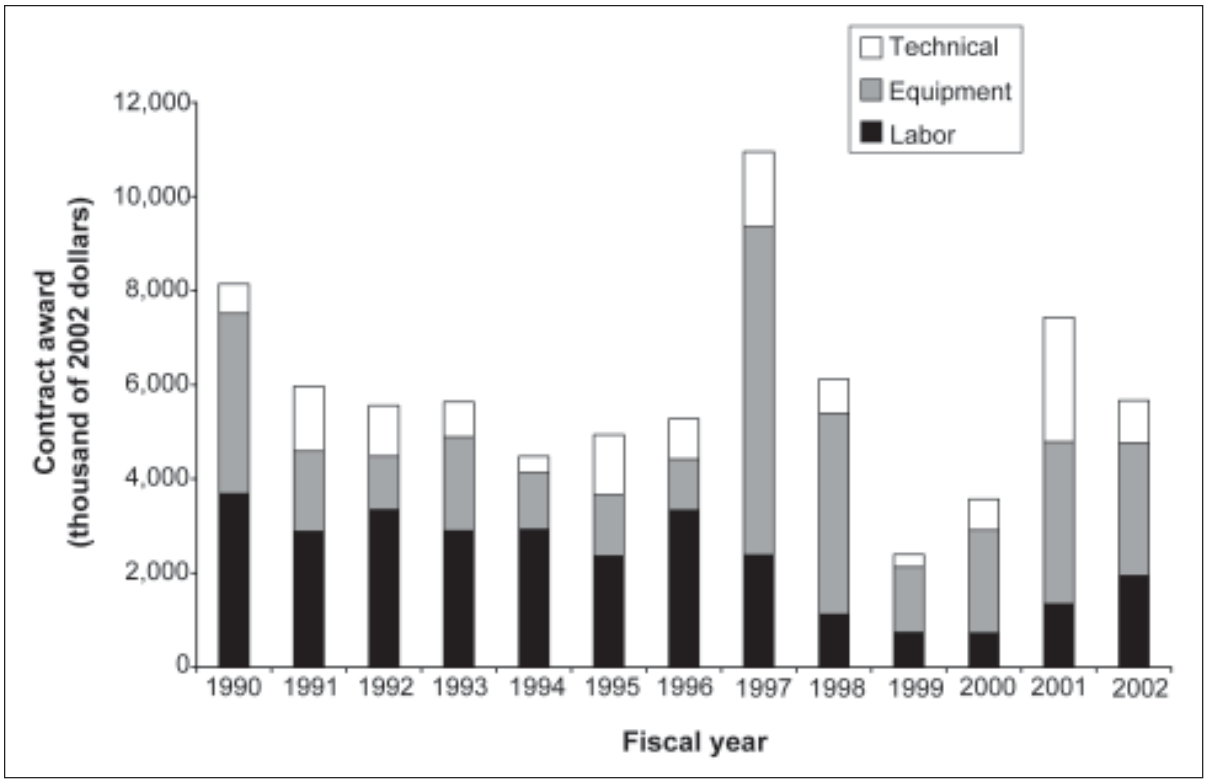

Figure 25—Annual land management procurement spending by work type, Mount Hood National Forest.

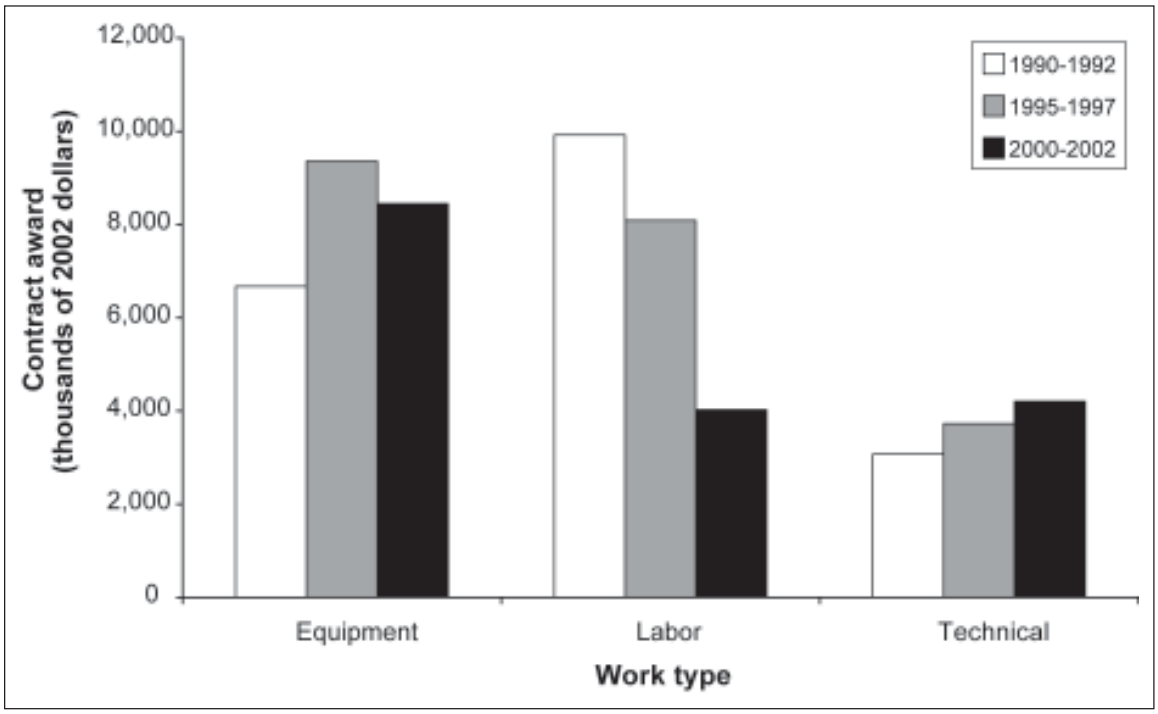

Figure 26—Land management procurement spending by work type, Mount Hood National Forest, fiscal years 1990–92, 1995–97, and 2000–2002.

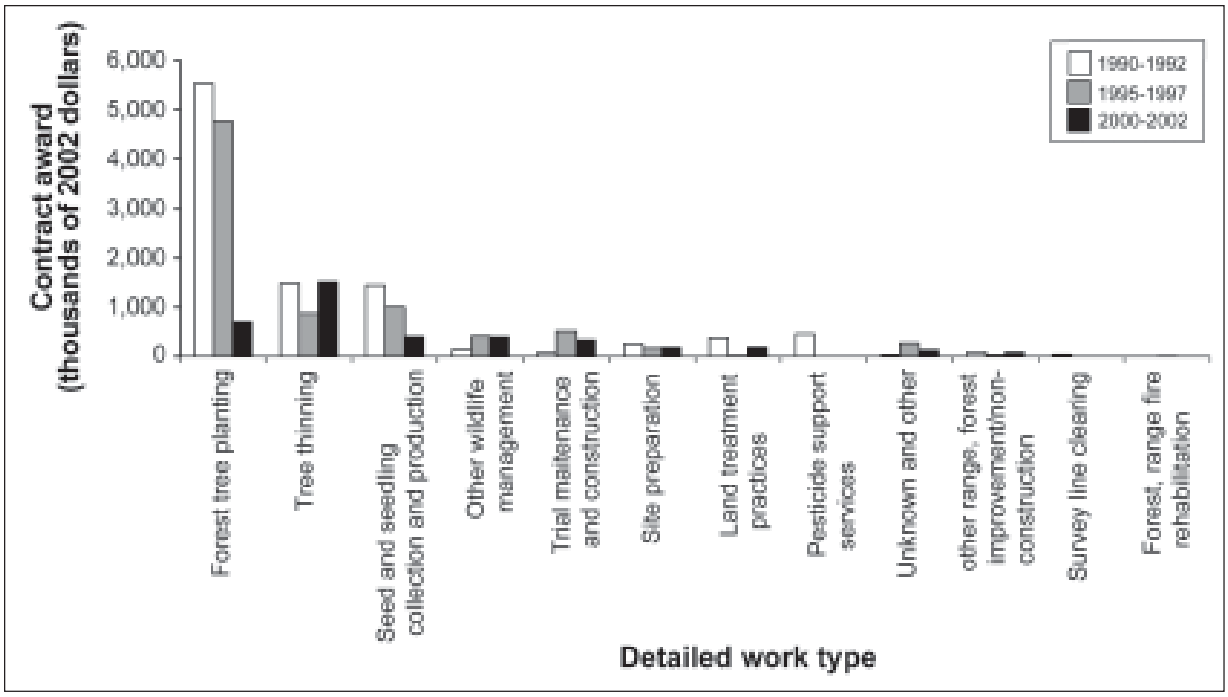

Figure 27—Labor-intensive contracting by detailed work type, Mount Hood National Forest, fiscal years 1990–92, 1995–97, and 2000–2002.

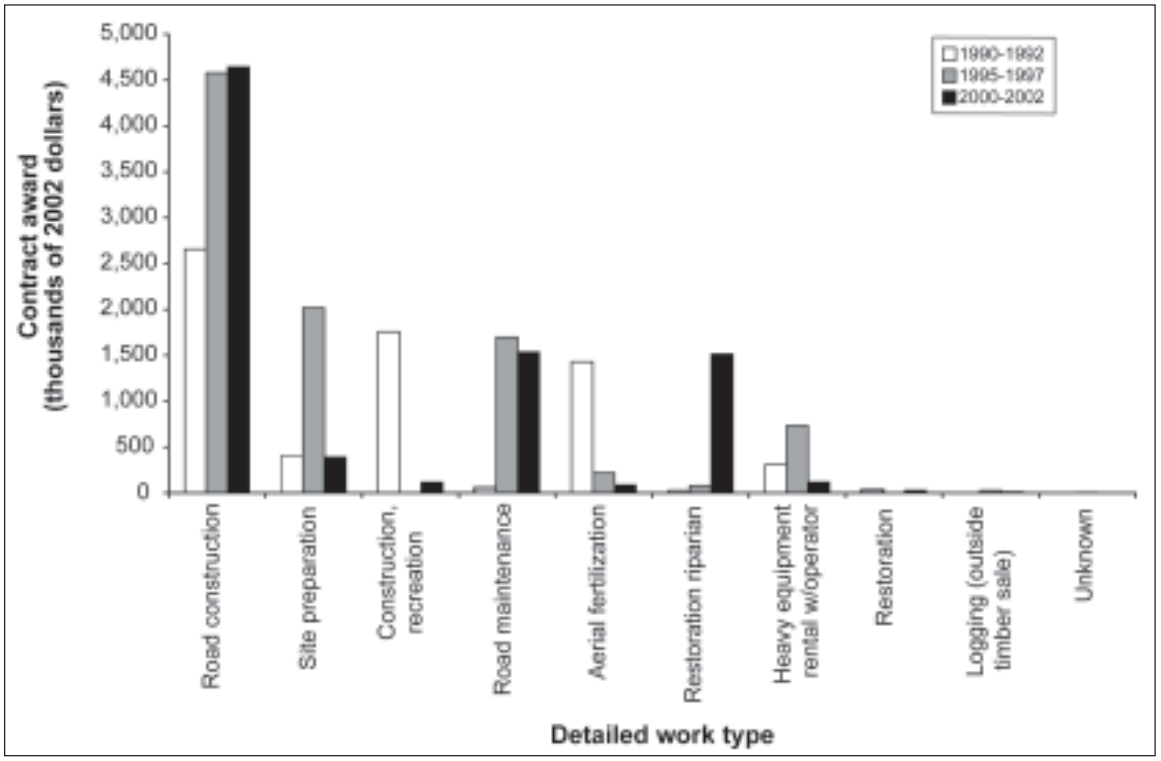

Figure 28—Equipment-intensive contracting by detailed work type, Mount Hood National Forest, fiscal years 1990–92, 1995–97, and 2000–2002.

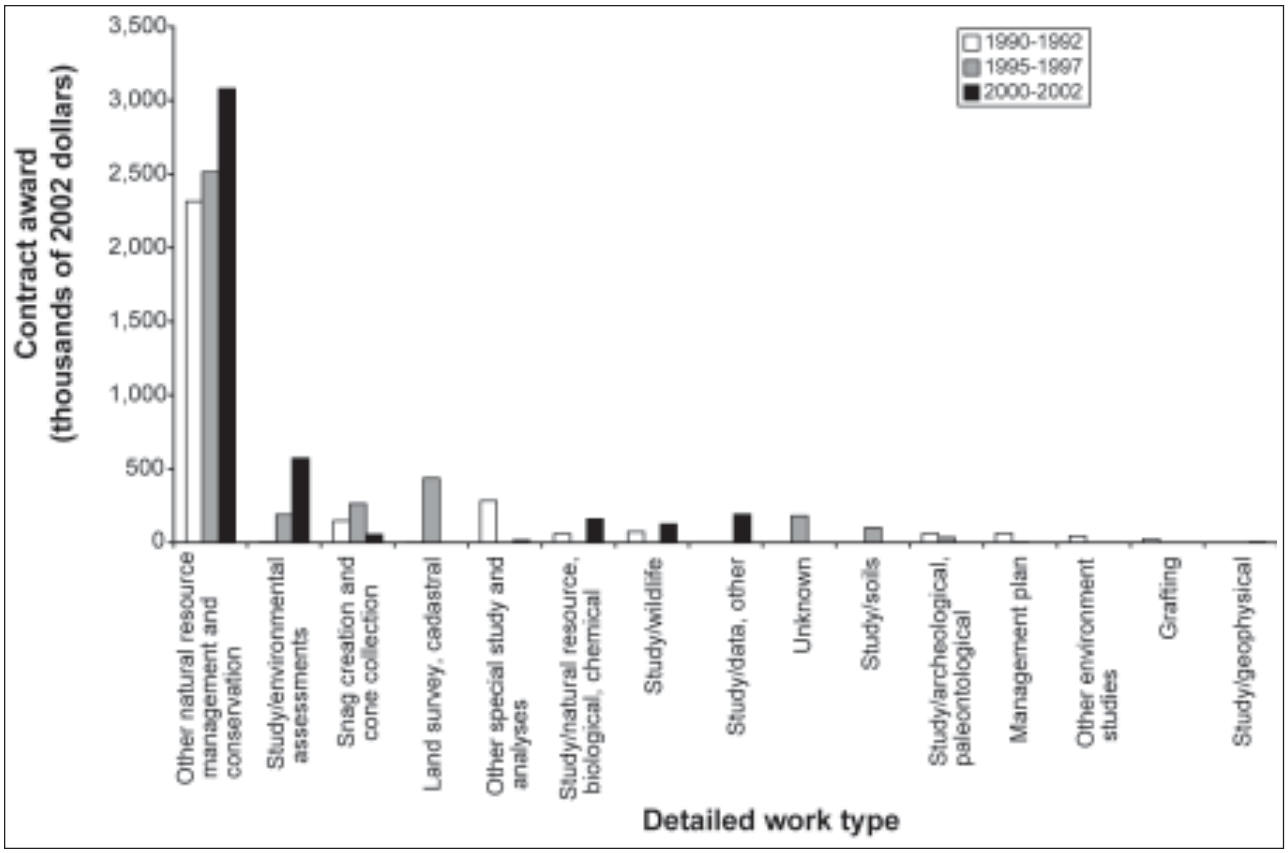

Figure 29—Technical contracting by detailed work type, Mount Hood National Forest, fiscal years 1990–92, 1995–97, and 2000–2002.

although these activities make up a relatively small percentage of the overall contracting of technical activities.

Contractor Concentration and Turnover

The number of contractors working for the Mount Hood National Forest declined by 38.7 percent (from 178 to 109) between 1990-92 and 2000-2002. This decline was more than double the rate of decline of the Mount Hood National Forest's procurement spending, which fell 15.2 percent. The decline in contractors did not occur evenly across the size classes of contractors. Rather, concentration increased among contractors receiving the largest-valued contracts. In 1990-92, 10.1 percent of the contractors captured 50 percent of the forest's contract value. However, by 2000-2002, 5.6 percent of contractors captured 50 percent of the contract value (table 3).

Of the 178 contractors working for the Mount Hood National Forest in 1990-92, 70 of them were no longer working for the forest a decade later, and new contractors replaced 98 of them. Ten contractors worked for the forest in both periods, capturing 9.5 percent of contract value in 1990-92 and 13.4 percent in 2000-2002, indicating that a limited number of contractors' businesses grew slightly. On average, these returning contractors captured more contract value on the Mount Hood National Forest than the rest of the contractor pool.

Location of Mount Hood Contractors

Contractors that worked on the Mount Hood National Forest were heavily concentrated in the Willamette Valley to the west of the forest. If we compare labor-intensive to equipment-intensive contracting, we see that even on the

Table 3—Number of contracting awards by size of contract, Mount Hood National Forest, fiscal year 1990–1992 and 2000–2002

Contract value	Contracts awarded			
	1990–92		2000–2002	
	Number	*Percent*	*Number*	*Percent*
1st quartile	4	2.25	1	0.93
2nd quartile	14	7.87	5	4.63
3rd quartile	31	17.42	15	13.89
4th quartile	129	72.47	88	81.48
Total	178	100.00	109	100.93

Note: This table groups contracts by size of contract awards.

The largest contracts that together capture one-fourth of the contract value are in the first quartile. The smallest contracts that together capture one-fourth of the contract value are in the 4th quartile. Thus, for example, the largest 4 contracts in 1990–92 captured the same total value as the smallest 129 contracts.

Chi square: $p < 0.609$.

Mount Hood National Forest, where the forest is close to a major center of contracting capacity, labor-intensive contractors came from up and down Interstate-5, whereas equipment-intensive contractors were more concentrated in towns and cities in and near the Portland metropolitan area (fig. 30). For both equipment and labor-intensive contracting, there is a small scattering of distant rural contractors who worked on the Mount Hood National Forest during the study period.

In 1990-92, the Mount Hood National Forest awarded contracts to contractors in and around the Portland area, as well as throughout the Interstate-5 corridor in Oregon and Washington. Over time, contractors became increasingly concentrated in the Willamette Valley and in the Portland area (fig. 31). The level of information on contracts in the Mount Hood National Forest does not allow reliable statistical tests to be performed. However, the apparent increasing localization of contract recipients may be attributable, in large part, to the decline in the amount of labor contracting that the Mount Hood National Forest undertook between 1990 and 2002.

Awards to Rural Contractors

The forest awarded more contract value to urban contractors (businesses located in cities with populations of more than 50,000 people) than to rural contractors (businesses located in communities with fewer than 5,000 people). For example, in 1990-92, urban contractors captured 32.6 percent of the forest's contract value, and in 2000-2002, this number increased to 48.2 percent (table 4). At the same time, contract awards to rural contractors decreased slightly from 23.3 percent to 22.8 percent. Contract awards to communities with between 5,000 and 10,000 people also declined over the study period. Given the general decline in contract awards, rural and small-town contractors captured considerably less contract value in 2000-2002 than they did in 1990-92 (a decrease of $2.8 million).

Awards to Affected Counties

Over the course of the study period, the Mount Hood National Forest awarded 91 percent of its contract value to contractors located in the Plan-program-affected counties (fig. 32). The purpose of the program is to provide more jobs to workers in counties affected by the Plan. The proportion of contract value awarded to contractors from affected counties increased from 92.7 percent in 1990-92 to 96.8 percent in 1995-97, but then dropped to 83 percent in 2000-2002. The increase in contract awards during the mid 1990s may be attributable to the Jobs-in-the-Woods program, which sought to create new employment opportunities for people

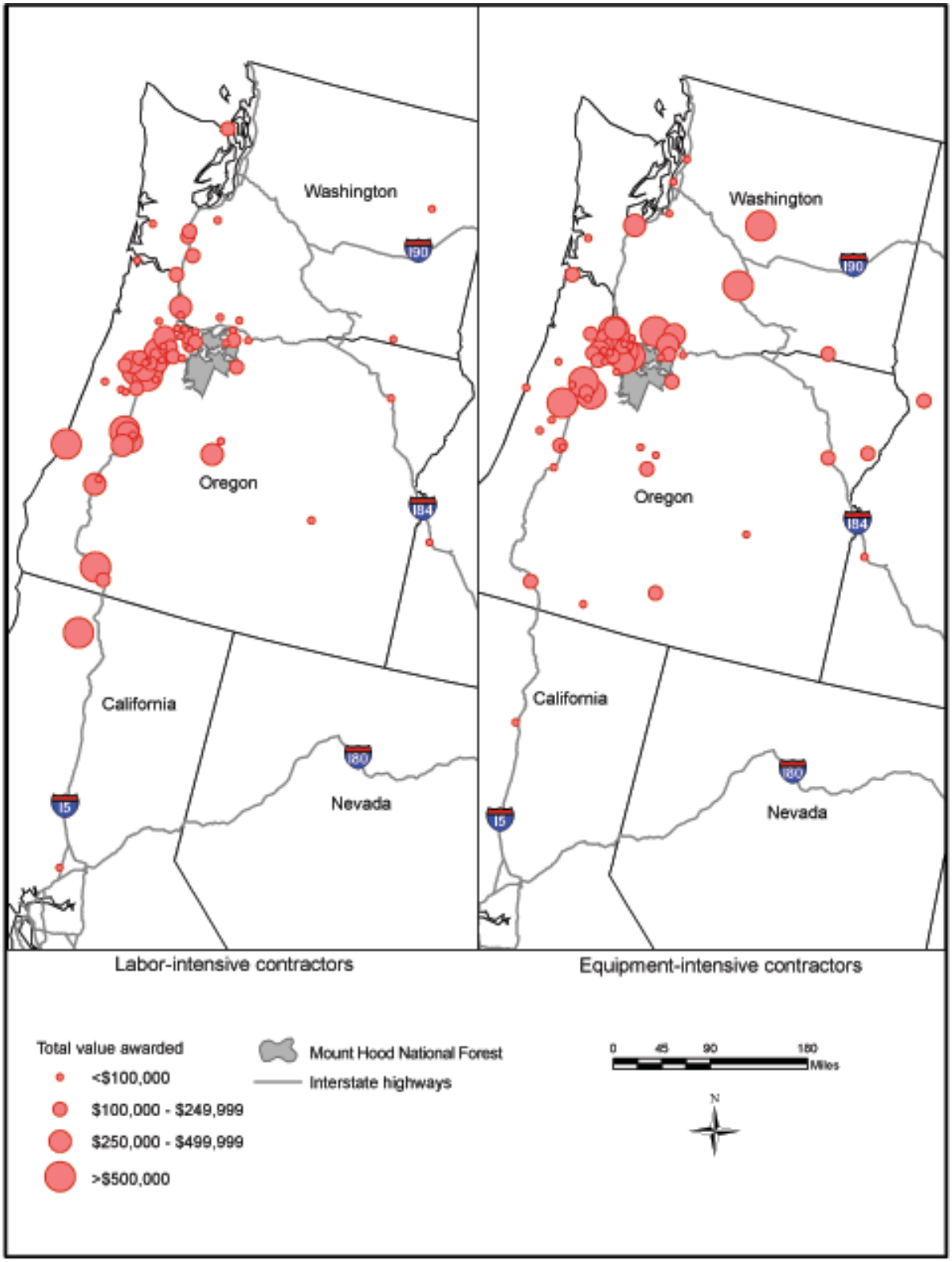

Figure 30—Comparison of labor-intensive and equipment-intensive contractor locations by ZIP code, Mount Hood National Forest, 1990-2002.

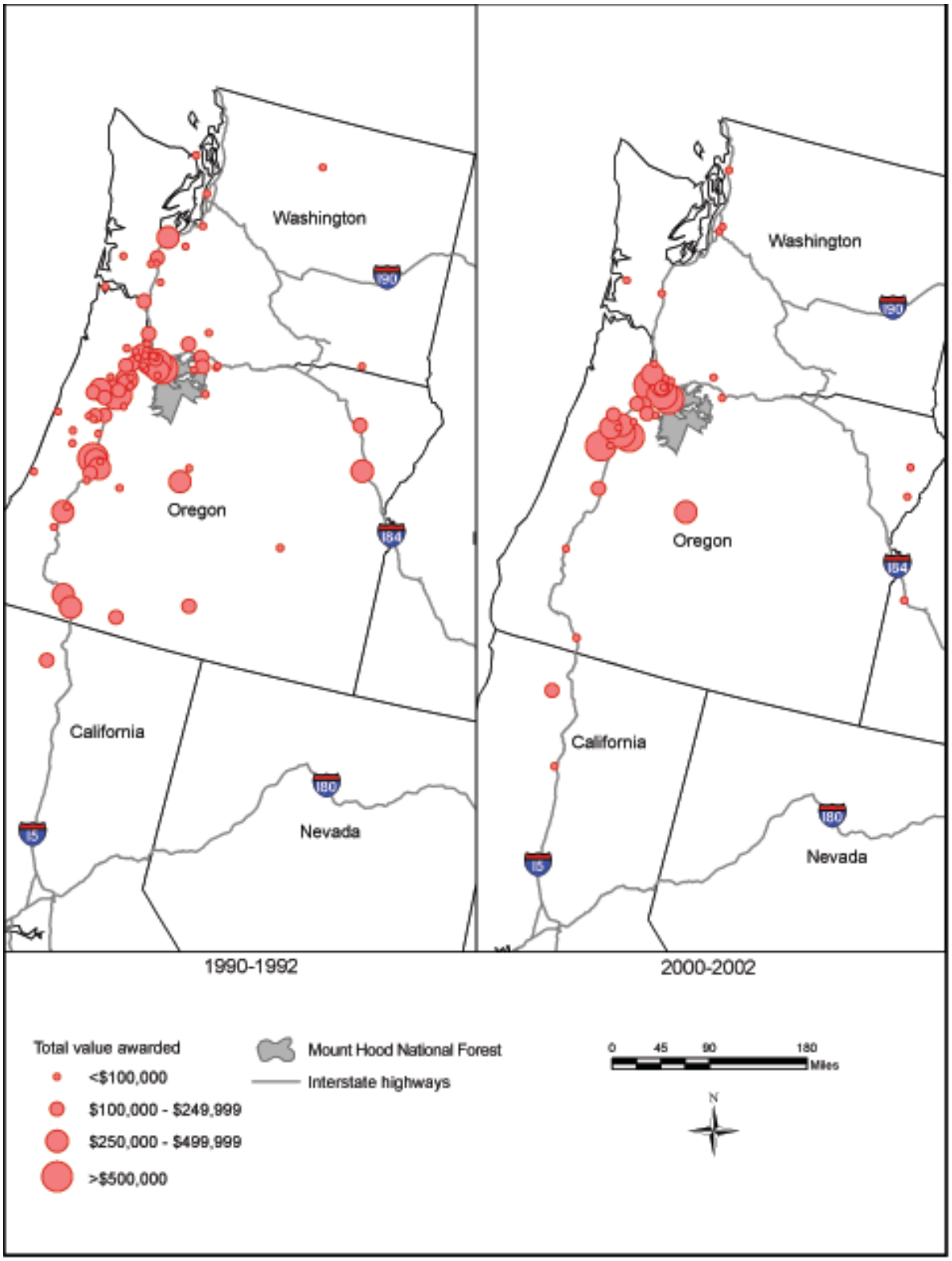

Figure 31—Location of contractors by ZIP code and total contract awards, Mount Hood National Forest, fiscal years 1990–92 and 2000–2002.

Table 4—Percentage of contract value by contractor's community size, Mount Hood National Forest, fiscal year 1990–1992 and 2000–2002

Community population (1998)	1990–1992		2000–2002	
	Real dollars	*Percent*	*Real dollars*	*Percent*
<5,000	4,588,000	23.3	3,764,000	22.8
5,000-9,999	3,113,000	15.8	1,178,000	7.2
10,000-50,000	3,516,000	17.9	2,945,000	17.9
>50,000	6,406,000	32.6	7,945,000	48.2
Unknown	2,042,000	10.4	641,000	3.9
Total	19,664,000	100.0	16,472,000	100.0

Chi square: $p < 0.064$.

Chi square: $p < 0.065$ (excluding unknown category).

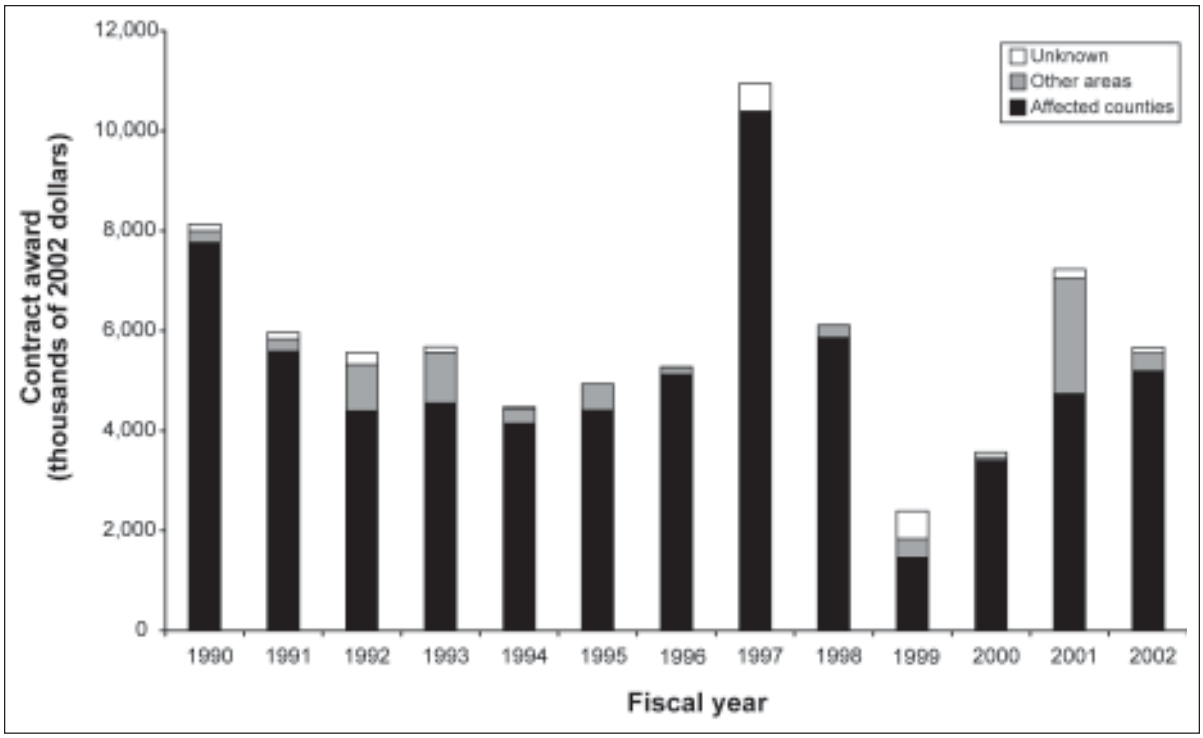

Figure 32—Contract awards to Plan-affected counties, Mount Hood National Forest.

displaced by the decline of the timber industry by training them in restoration and technical work. However, this effect was short lived.

Procurement Summary

Procurement spending on the Mount Hood National Forest declined less than for the Forest Service as a whole during the study period (Moseley 2006). Contracting for labor-intensive activities and activities associated with intensive forest management shifted toward ecosystem management work. Despite this shift, the Mount Hood National Forest contracted activities associated with timber management activities into the late 1990s. Procurement spending on the forest did not decrease significantly over the study period, but spending per acre decreased. Rural and small-town contractors captured a lower percentage of contract value by the end of the study period. However, local contractors in the greater Portland area appear to have captured more contracts than distant contractors by 2000-2002.

Community Economic Assistance

Changes in Community Assistance/Grant Programs

Community Economic Assistance made available by the Mount Hood National Forest increased substantially between 1994 and 2002 as a result of the Northwest Economic Adjustment Initiative (NEAI). The Rural Community Assistance (RCA) program was initially administered by program staff located on each district. Between 1992 and 2003, communities and counties around the Mount Hood National Forest received approximately $47.7 million in grants and loans associated with the NEAI (table 5), disbursed through the forest's RCA, USDA Rural Development, the Economic Development Administration, and the Department of Labor. For example, the RCA program awarded approximately $588,000 in grants and another $575,000 in Jobs-in-the-Woods contracts to entities in Hood River and Clackamas Counties. The NEAI grants funded small business development, worker retraining, physical infrastructure development, planning activities, and community development projects. As part of the NEAI, the Mount Hood National Forest awarded approximately $100,000 for planning activities, $350,000 for physical infrastructure, and the remaining funds for technical assistance (table 6).

The RCA program's funding was cut to pre-Plan levels when the NEAI ended in 2000; one program coordinator remains on the Mount Hood National Forest. New sources of funds have been made available to communities through resource advisory committees (RACs) as part of the Secure Rural Schools and Community Self-Determination Act. Funds are also available through the National Fire Plan.

Mount Hood National Forest staff reported that interagency coordination increased during the administration of NEAI funds. Some reported that because the funds were administered at a regional level, however, the role of the forest in contributing funds to a local community was not always obvious. As a result, the program did little to retain or reestablish relations between communities and the forest.

Payments to County Governments

Under the Payments to States Act of 1908, county governments received 25 percent of National Forest revenues generated through collection receipts. Timber receipts (including purchaser road credits, KV collections, and salvage sale fund payments) were reportedly the largest source of revenue to the Mount Hood National Forest during the 1970s and 1980s. The 25-percent payments to counties were used by counties to fund public schools and roads. In 1993, Congress passed the Omnibus Budget Reconciliation Act, which provided an alternative payment to 72 counties in Washington, Oregon, and northern California affected by the drop in federal timber harvest and associated timber revenues that resulted from administrative and judicial decisions designed to protect the northern spotted owl (*Strix occidentalis caurina*). These payments were known as "spotted owl safety nets" or "owl guarantee payments." Under this act, counties were to receive a declining percentage of the average annual payment they received between 1986 and 1990. This percentage would decline until the

Table 5—Economic program grants to communities, Northwest Economic Adjustment Initiative, 1992–2000

Year of award	Amount funded	Applicant	Project name
	Dollars		
1994	5,500	Clackamas County	Establish North Clackamas County Watershed Council
1994	385,912	Employment Training and Business Services	Dislocated worker training
1994	429,559	Employment Training and Business Services	Dislocated worker training
1994	120,072	Estacada	Estacada Industrial Park Waterline Extension
1994	382,500	One business	Guaranteed loan
1994	67,500	Two businesses	Guaranteed loans
1994	425,880	Two businesses	Guaranteed loans
1994	70,505	Oregon Consortium	Dislocated worker training
1994	1,039,205	Seven businesses	Guaranteed loans
1994	95,994		Jobs-in-the-Woods contracts
1994	39,000	Confederated Tribes of Warm Springs Reservation	Planning grant
1994	1,000,000	Confederated Tribes of Warm Springs Reservation	Infrastructure, machinery for mill site
1994	27,900	Maupin	Visitor center parking area
1994	70,505	Oregon Consortium	Dislocated worker training
1994	25,000	Wasco County	Strategic action plan
1994	52,000	Mid-Columbia Economic Development District	Capacity building
1994	63,000	Mid-Columbia Economic Development District	Planning grant
1995	810,350	Colton	Water system improvements
1995	8,065,835	58 businesses	Guaranteed loans
1995	68,847	Sabin Skills Center, North Clackamas School District	Project bridge
1995	194,000	Oregon Consortium	Dislocated worker retraining
1995	2,241,882	Seven businesses	Guaranteed loans
1995	200,000	Confederated Tribes of Warm Springs Reservation	Warm Springs Composite Products
1995	250,000	Maupin	Maupin City Park and comfort station: phase 2
1995	128,000	Oregon Consortium	Dislocated worker retraining
1995	88,000	Mid-Columbia Economic Development District	Columbia Gorge economic opportunity study and industrial land inventory
1995	137,472	Mid-Columbia Economic Development District	Capacity building
1995	34,097	Mid-Columbia Economic Development District	Comprehensive analysis
1995	29,100	Wasco County Soil and Water Conservation District	Fifteenmile Creek watershed improvement project phase 1
1996	5,957,000	City of Sandy	Sewer system planning, design and construction
1996	4,917,500	City of Sandy	Tickle Creek stormwater runoff treatment
1996	45,000	City of Estacada	Estacada storm drainage master plan

Table 5—Economic program grants to communities, Northwest Economic Adjustment Initiative, 1992–2000 (continued)

Year of award	Amount funded	Applicant	Project name
	Dollars		
1996	200,000	Confederated Tribes of Warm Springs Reservation	Warm Springs water treatment plant automation
1996	32,205	Wasco County	The Kitchen Collaborative
1996	160,000	Wasco County	Columbia Gorge Discovery Center and Wasco County Historical Museum
1996	32,000	Mid-Columbia Economic Development District	Comprehensive analysis
1997	33,334	Clackamas County Development Agency	Technical assistance for Molalla and Estacada
1997	150,060	Port of Cascade Locks	Port of Cascade Locks marina project
1997	175,000	Hood River	Hood River County economic development action plan
1997	55,000	Columbia Gorge Community College	Columbia Gorge Community College commercial kitchen
1997	13,700	South Wasco County High School	South Wasco County community kiosk
1997	60,000	Wasco County	Wasco County infrastructure project 2000
1997	80,000	Wasco County	Riverfront Trail
1997	40,000	Mid-Columbia Economic Development District	WASCO 2000
1997	175,000	Mid-Columbia Economic Development District	Capacity building
1997	16,000	White River Health and Living Center, Inc.	White River Health and Living Center—initial project consultation
1998	3,079,500	City of Estacada	Estacada water system improvements
1998	27,000	City of Estacada	Wastewater facility plan
1998	10,000	City of Dufur	Dufur wastewater treatment system improvements
1998	117,955	Port of The Dalles	Chenoweth Creek site subdivision and infrastructure development
1998	54,000	Wasco County	The Dalles Convention Center design
1999	2,152,600	City of Estacada	Industrial property infrastructure extension
1999	4,983,189	City of Hood River	Wastewater treatment plant renovation
1999	398,569	Port of Cascade Locks	Industrial park infrastructure improvement phase II
1999	36,000	City of Mosier	Waterfront project
1999[a]	80,000	City of The Dalles	Downtown renaissance
1999	450,000	Public Works Department	Chenoweth area storm sewer
1999	50,000	Wasco County	Discovery Center water treatment improvement project
1999	1,000,000	Mid-Columbia Economic Development District	Loan: small business revolving loan fund for rural Wasco, Sherman, and Hood River Counties
Total	41,128,227		

[a] Indeterminate additional funding was received in 2000.

Table 6—Economic program grants to communities, Mount Hood National Forest, 1994–2000

Year award	Amount funded	USFS	Applicant	Project name
	– – – Dollars – – –			
1994	11,890	11,890	Government Camp	Government Camp trail information network
1994	30,996	30,996[a]	Estacada	Community Action Plan
1994	394,758	394,758		Jobs-in-the-Woods contracts
1994	5,500		Clackamas County	Establish North Clackamas County Watershed Council
1994	385,912		Employment Training and Business Services	Dislocated worker training
1994	429,559		Employment Training and Business Services	Dislocated worker training
1994	120,072		Estacada	Estacada industrial park waterline extension
1994	382,500		One business	Guaranteed loan
1994	67,500		Two businesses	Guaranteed loans
1994	425,880		Two businesses	Guaranteed loans
1995	810,350		Colton	Water system improvements
1995	8,065,835		58 businesses	Guaranteed loans
1995	32,000	32,000[a]	Estacada Chamber of Commerce	Fisher Fabrication modernization
1995	68,847		Sabin Skills Center, N. Clackamas School District	Project bridge
1996	5,957,000		City of Sandy	Sewer system planning, design, and construction
1996	4,917,500		City of Sandy	Tickle Creek stormwater runoff treatment
1996	22,500	22,500	City of Molalla	Main Street program (revitalizing downtown Molalla)
1996	45,000		City of Estacada	Estacada storm drainage master plan
1997	29,892	29,892	Molalla	Molalla River Civic Auditorium equipment
1997	33,334		Clackamas County Development Agency	Technical assistance for Molalla and Estacada
1998	3,079,500		City of Estacada	Estacada water system improvements
1998	60,000	60,000	City of Molalla	Bear Creek Green Space Trail engineering and planning
1998	27,000		City of Estacada	Wastewater facility plan
1999	22,500	22,500	Clackamas County Development Agency	Geothermal heating district
1999	2,152,600		City of Estacada	Industrial property infrastructure extension
Total	27,578,425	604,536		

[a] Forest Service-Rural Community Assistance grant.

Source: William M. Kay/Forest Community Research.

year 2003, when it would have reached 58 percent of the 1986-90 average, and then expire.

In 2000, Congress replaced the spotted owl safety net measure with the Secure Rural Schools and Community Self-Determination Act, set to expire in 2006. Under this act, counties receive money each year equal to the average of the payments received during the three highest years between 1986 and 1999. At least 85 percent of this money must be used to fund education and transportation projects (Title I). The remaining 15 percent is used to fund RACs and their activities (Title 2), and the general county budget (Title 3). Resource advisory committees were established by the act to promote collaborative relationships and to advise the Secretary of Agriculture on the use of Title 2 money. They comprise 15 members that represent a balance between the environmental community; industry, commodity, and recreation interest groups; and government officials, educators, and general members of the public. Resource advisory committees review and recommend funding for projects that are proposed by members of the public. These projects must focus on enhancing or restoring forest ecosystem health (including water quality), promoting land stewardship, or maintaining or improving existing infrastructure. The projects can occur on federal land, or on nonfederal land where they would benefit federal land. Not only do RACs promote collaborative relationships between members of the public and federal agencies, the projects they fund provide employment opportunities for local residents.

Figure 23 summarizes the downward trends in forest collection receipts that occurred on the Mount Hood National Forest between 1988 and 2001. Revenues generated by nontimber programs were meager compared with those that had come from the timber program. Figure 33 shows the amount of money county governments received from the Mount Hood National Forest between 1990 and 2002. The "Not Adjusted" bars to the left represent the amount that county governments would have received based on 25 percent of the Mount Hood National Forest collection receipts alone, without the mitigating legislation. The "Owl Adjusted" bars to the right indicate the amount of money that county governments actually received under the owl safety net payments and the Secure Rural Schools Act. The act resulted in substantially higher payments to counties than they would have received through forest revenue sharing alone. The Secure Rural Schools Act has provided the highest level of payments to counties since 1990. Figure 34 shows how these payments have been distributed between the counties that contain Mount Hood National Forest land. This demonstrates the importance of mitigation measures for maintaining a stable flow of payments to counties.

Summary of Trends in Socioeconomic Benefits

Resource and Recreation Outputs

Under the Plan, the PSQ was set at 67 MMBF and then lowered to 64 MMBF in 1995. Board feet harvested declined 90 percent between 1989 and 1995. The Mount Hood National Forest offered the PSQ only twice between 1994 and 2001.

The roads/transportation program is currently maintaining and improving 620 miles of mainline roads, and decommissioning, closing, or downgrading maintenance levels on the remaining 3,450 miles. Since 1992, road densities have been reduced in 12 key watersheds and remained unchanged in 13 key watersheds (USDA FS 2003).

The total value of NTFP permits for commercial and personal use was $243,343 in 1996 and $194,118 in 2002. The average annual value is just under $160,000. Christmas trees and firewood permit sales constitute roughly 30 percent of the total value of NTFPs, with bough, moss, cone, foliage, and fungi harvesting, posts and poles, transplants, and nonconvertibles contributing the difference.

Over 4 million recreational users visit the Mount Hood National Forest each year seeking developed and dispersed recreation opportunities. Recreational uses are diversifying, and snowboarding, paintballing, mountain biking, and OHV use have all increased. At the same time, concessionaires of several campgrounds report that the campgrounds

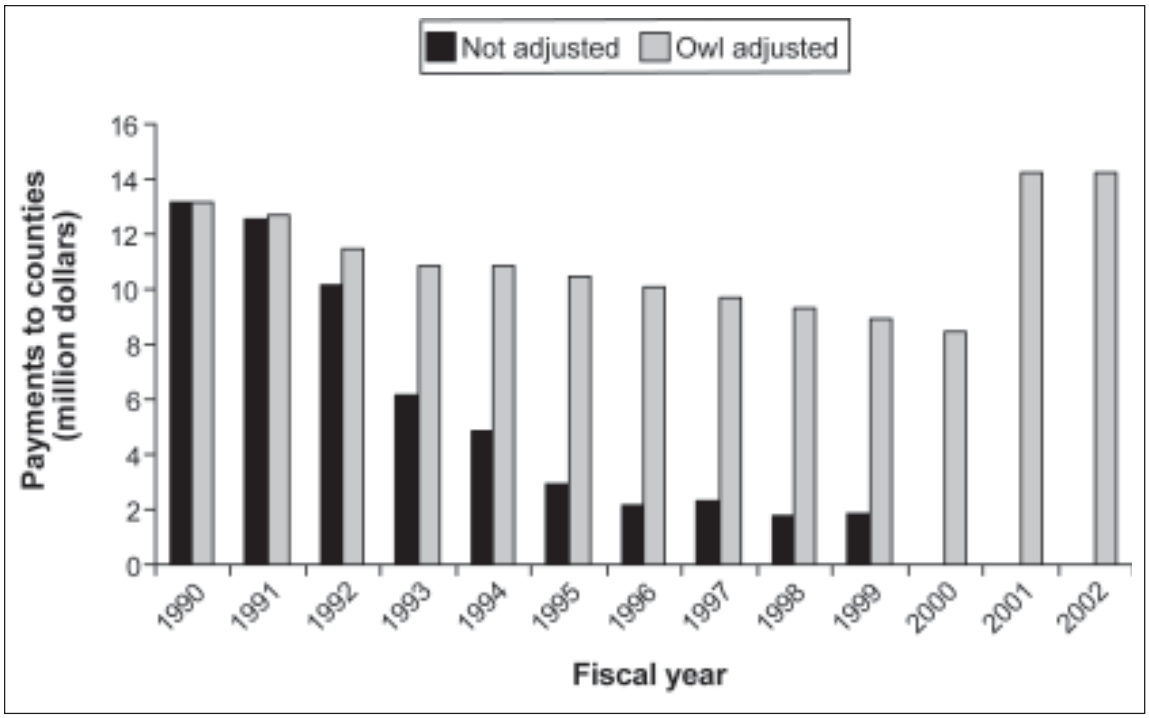

Figure 33—Mount Hood National Forest payments to counties 1990–2002. Source: Philips 2003.

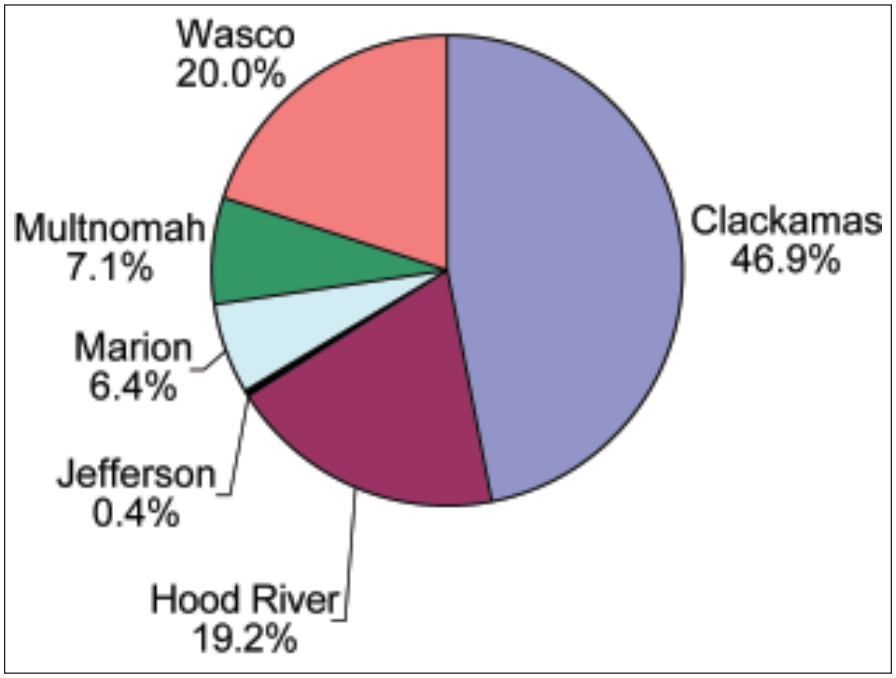

Figure 34—Distribution of payments to counties, 2000.

are often below full occupancy, particularly midweek. Between 75 and 90 percent of all campsites are now operated by concessionaries.

The Minerals, Heritage and Scenic, and Fire programs changed little or insufficient data were available to determine changes since the implementation of the Plan.

Jobs and Income Associated With Timber, Grazing, and Recreation Programs

Funding from permanent and trust funds declined by 82 percent. In 1991, KV trust funds were the largest budget item totaling $15 million. By 2000, KV trust funds declined to approximately $2.5 million. Employment on the Mount Hood National Forest dropped from over 700 FTEs in 1991, to about 320 FTEs in 2000. In 2003, there were 240 full-time employees. The Fee Demo Program has resulted in an increase of funds available for recreation, approximately $350,000 annually.

Community Economic Assistance

Between 1992 and 2003, communities and counties around the Mount Hood National Forest received approximately $47.7 million in grants and loans associated with the Plan; $588,000 was disbursed through the forest's RCA program.

Payments to County Governments

Payments to county government decreased from roughly $13 million annually in 1990 to $8 million in 2000. Payments have since increased to just over $14 million annually as a result of the Secure Rural Schools Act of 2000 and will remain at that level through fiscal year 2006.

Linking Change in Flow of Socioeconomic Benefits to the Plan

The trends above indicate there was change in the nature of the socioeconomic benefits associated with the forest, including a demonstrable decline in the flow of benefits to communities near the forest. A number of forces affected resource and recreation outputs on the forest. These include but are not limited to land use allocations, procedural requirements, and staff and budget reductions. Land use allocations and procedural requirements were part of the Plan. However, we were not able to determine the extent to which budget and staffing reductions were linked to the Plan. It is clear, though, that budget and staff reductions directly affected the flow of socioeconomic benefit.

Land Use Allocations and Procedural Requirements

The shift in natural resource management goals were expressed in part by new or altered LUAs. Land use allocations define allowable, restricted, and prohibited uses and activities and are associated with specific management objectives (USDA and USDI 1994b). Across the region, the most notable changes in LUAs under the Plan were the decrease in land available to timber harvesting (i.e., of matrix lands), an increase in land with much greater restrictions on timber harvesting (i.e., LSRs), and the development of the ACS, which included the establishment of riparian reserves. The Mount Hood National Forest had considerable acreage in LSR-like allocations, namely wilderness areas and the Bull Run watershed, prior to the Plan and had provisions for riparian area management. However, the change in land use allocations under the Plan reduced the amount of acreage available for timber production, special forest products, access to recreational resources, and fuels management.

Plan procedural requirements affected the manner and timing of management activities taking place in the newly established land use allocations. Procedural requirements and administrative processes–survey and manage requirements in particular–added time, cost, and uncertainty to resource management activities. The time, cost, and uncertainty of resource management activities led to lower predictability of the supplies of resources available for harvest or extraction on the Mount Hood National Forest in the near term. The obstacles—time, cost, and uncertainty–presented by procedural requirements at the outset of the Plan remain problematic today, albeit to a lesser extent.

Interviewees reported that procedural requirements have:

- Rendered timber program budgets inadequate for achieving PSQ sales or harvest levels indicated in the Plan.
- Reduced funds available for overall program management needs.
- Reduced the recreation program's capacity to construct and reconstruct trails and conduct ongoing maintenance activities, such as hazard-tree removal.
- Increased the need of forest employees to communicate with and educate forest users to ensure compliance with new regulations.

The lack of clarity about LUAs and how to apply procedural requirements of the Plan has contributed to the delays and increased the cost of management activities. Interviewees reported the following:

- Interpreting the ACS in the context of range management has been difficult: specifically, clarifying how site-specific actions (e.g., fencing off a stream area) fit in the context of achieving a broader watershed management goal.
- The lack of clarity about the aquatic procedural requirements has resulted in uncertainty when dealing with recreation sites that intersect with riparian areas.
- Work delays and increases in the costs of management activities: roads have degraded further while studies were being conducted.
- Procedural requirements of the Plan have served as a point of leverage for environmental interest groups to bring legal action against the forest.

Probable Sale Quantity and Implications of the Decline of the Timber Program

The forest's 64 MMBF PSQ level under the Plan is viewed by several program and line officers as a commitment to nearby communities and to the region. For most years since the initiation of the Plan in 1994, the forest has been unable to deliver 64 MMBF in timber sales. Some employee-interviewees perceive this as a failure in the Mount Hood National Forest's ability to honor its commitments to local communities.

At least one staff person perceived that budgeting processes at the national level have reallocated dollars away from regions that seem less able to get the cut out to those that are able to deliver timber volumes closer to the PSQs noted in the Plan.

The change in management activities has resulted in a shift in procurement contracting trends. Where stand management activities and contracts were once common, contracts for surveys and road work (decommissioning) are now more common. This has affected the location and distribution of businesses that receive contracts to work on the forest. Many of the contracts to do survey and other intensive work have been awarded to contractors on the Interstate-5 corridor as opposed to those based in the study or other buffer communities. The Plan had immense impacts on timber harvest levels and harvest-related activities, as indicated by the reduction in volumes harvested and the consistent below-PSQ level of timber sales.

In anticipation of the loss of income that resulted from decreased timber sales, two programs were strengthened or otherwise altered to ensure that the flow of capital to communities would continue. The Economic Assistance Program (EAP) was significantly expanded from 1994 to 2000 to replace the loss of timber and related jobs, and to help communities transition away from timber dependency. Likewise, payments to county governments that were linked directly to timber sales were supplemented temporarily through the spotted owl guarantee system to ensure county governments received funds for roads and schools. As of 2004, the EAP had become virtually nonexistent, but the payments-in-lieu-of-taxes remained in place.

We were not able to determine the extent that budget and staff cuts from 1994 onward can be attributed to the Plan. However, several issues associated with staff and budget cuts bear mentioning. The budget and staff cutbacks

have affected the Mount Hood National Forest's ability to achieve some programmatic goals in a timely and effective manner. This, in turn, has affected its ability to maintain effective working relations in the communities adjacent to the Mount Hood National Forest and with the numerous stakeholders who use or are concerned about the Mount Hood National Forest. Additionally, the recreation program that serves millions of forest users each year, is not able to meet all the demands and needs of society. Managers of the recreation, NTFP, and grazing programs note that the diminishing number of forest personnel has led to a situation in which the forest has less contact and communication with the public and permit holders. As a result, forest personnel have fewer opportunities to educate, share information, and build connections with the public. Employees are concerned the decrease in connections with the public will compromise the ability of the forest's programs to fulfill their objectives.

Compounding the limitations imposed by lean staffing levels, specialists have encountered difficulties in planning and prioritizing their work owing to the lack of clarity about agency priorities. These types of inefficiencies and frustrations were mentioned for projects relating to fuel management, timber planning, fisheries, recreation, and others. For instance, a silviculturist may be needed for both a recreation and a timber project, yet it may not always be clear which project has priority.

The socioeconomic goal of the Plan was to produce a predictable and sustainable supply of timber and NTFPs, as well as recreation opportunities on federal forest lands within the Plan area. Answering the monitoring question, "Are predictable levels of timber and non-timber resources available and being produced?" can help assess whether this goal is being achieved. This analysis suggests that the answer differs by the resource in question. For example, the volume of timber put up for sale by the Mount Hood National Forest from 1994 to 2003 was significantly lower than the volumes sold in years prior to the Plan, and also has been relatively unpredictable, ranging from a high of 75 MMBF in 1997 to a low of 5.1 MMBF in 2000. In contrast, although the volume of firewood sold by the forest also declined significantly from pre-Plan levels (from an average of roughly 11,000 cords per year from 1990 through 1993 to an average of roughly 3,950 cords per year from 1994 to 2002), the amounts sold annually since 1994 have been somewhat steady, with a high of 5,803 cords in 1994 and a low of 2,947 cords in 2000.

The Plan does not appear to have significantly affected availability of livestock forage or minerals from the forest, neither in terms of absolute quantities nor in terms of variability in quantities available from year to year. Recreation program managers report that a combination of budget cuts, reduced staffing levels, and procedural requirements of the Plan has resulted in disinvestment in the forest's recreational infrastructure, such as trails and dispersed camping sites. However, the statistical data on Mount Hood National Forest's recreational use and facilities is inadequate to permit us to draw clear conclusions regarding the predictability in availability of recreational opportunities since the implementation of the Plan. Similarly, the data for Christmas trees is inadequate to determine whether the observed decline in number of permits (which predated the Plan by 2 years) is linked to lack of supplies or to changes in demand. Likewise, the data for other NTFPs, such as wild mushrooms, boughs, and posts and poles, do not permit us to determine whether changes observed in numbers of permits issued are due to supply or demand factors.

The interview data suggest that the Plan has had short- and long-term impacts on the capacity of the Mount Hood National Forest to provide predictable flows of socioeconomic benefits. In the short term, higher levels of planning, preparation, and costs have been associated with the Plan for most resource management activities. Plan regulations have reportedly reduced the timber, roads, and recreation

program flexibility to the point of inefficiency and sometimes inaction. Despite the overly prescriptive nature of the Plan, many Forest Service employees believe that they have overcome many of the procedural and land use allocation obstacles and found ways to achieve resource management goals.

Program managers interviewed during this study expressed concerns about the potential effects of the Plan's requirements in the long term. Specifically, they noted that they often must make tradeoffs between management activities that they know will get through the procedural process in the quickest and least costly way, versus activities that might provide the biggest enhancement in long-term resource integrity. Additionally, many managers expressed frustration over the length of time it now takes to make decisions regarding resource management actions. In particular, recreation program managers stated that in their view, the delays they experienced in decisionmaking hampered the Mount Hood National Forest's ability to meet the growing demand for an array of recreational uses.

Chapter 3: Community-Level Change and the Impact of the Northwest Forest Plan

Introduction

Chapter 3 focuses on three case-study communities associated with the Mount Hood National Forest, using them to assess the following: (1) how communities around the Mount Hood have changed since 1990; (2) how changes in forest management and the flow of socioeconomic benefits from the forest under the Northwest Forest Plan (the Plan) have contributed to those changes; (3) how communities have adapted to change, and the role the forest has played in helping them do so; and (4) changing relations between the Mount Hood National Forest and the case-study communities since 1990. This assessment is informed by U.S. census data and interviews with community residents. Statements made by residents are noted when they reflect commonly held views or when they are indicative of the range of perspectives that exist within the community.

To put the case-study communities in perspective, we examined changes in community socioeconomic well-being that occurred between 1990 and 2000 in all of the communities lying within 5 miles of Mount Hood National Forest boundaries. Each community was ranked on a scale of 1 to 5, with 1 representing very low well-being, and 5 representing very high well-being. The well-being index was calculated on the basis of six U.S. census indicators (Donoghue and Sutton 2006): percentage unemployment, percentage of the population living below the poverty level, household income inequality, percentage of the population 25 years and older having a Bachelor of Arts degree or higher, average travel time to work, and diversity of employment by industry. Well-being as reported here serves as a coarse indicator of the nature of change that has occurred in communities around the forest since 1990. Figure 35 shows that more communities within 5 miles of the Mount Hood National Forest had low well-being in 2000 than in 1990, and that there was a corresponding drop in the number of communities that had high well-being during this period. Table 7 shows the change in socioeconomic well-being in the three case-study communities. The socioeconomic well-being average for the Villages of Mount Hood decreased slightly, from 73.74 to 72.97, while that of the Upper Hood River Valley increased slightly, from 71.31 to 72.01. The Greater Estacada Area had a higher percentage decrease in socioeconomic well-being, dropping from 61.74 to 58.36. The case examples provide deeper insight into the observed changes in social and economic well-being.

Greater Estacada Area

Community Change and the Effects of Forest Management Policy

Population in the Greater Estacada Area increased 11 percent, from 8,098 in 1990 to 8,335 in 2000. Change in the racial composition of the local population cannot be adequately determined because the U.S. Census Bureau collected these data differently in 1990 and 2000. However in 2000, about 90 percent of the area's population was Caucasian. As to changes in ethnic diversity, the Hispanic population more than doubled, from 260 people in 1990 to 682 people in 2000. Hispanics now make up 7.3 percent of the area's population (table 8).

The median age in the Greater Estacada Area increased at nearly three times the rate of the whole county's age increase. However, at 37.4, it remains a tick under 37.5, the median age of Clackamas County residents (table 8). In terms of age distribution, the Greater Estacada Area lost 34.1 percent of its 0–4-year-old population and 15.8 percent of its 20–29-year-old population. It experienced a 2.1 percent increase in its 30–44-year-old age group. The 45–64-year-old age cohort grew most rapidly, increasing by 62.3 percent. The same age group increased roughly 56 percent in Clackamas County. The 65-and-older cohort also increased but only by 2.5 percent (table 9). The area's school-age population increased nearly 15 percent, and as a

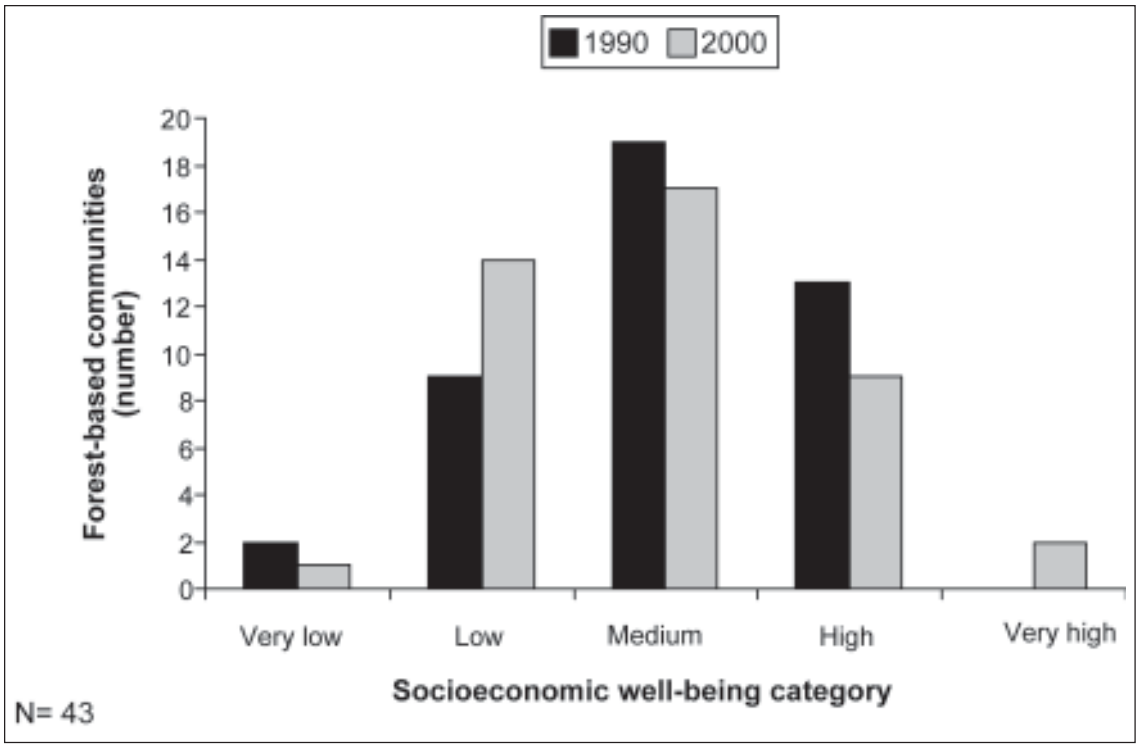

Figure 35—Socioeconomic well-being of communities within 5 miles of the Mount Hood National Forest.

Table 7—Socioeconomic well-being (SEWB) in case-study communities near the Mount Hood National Forest, 1990 and 2000

	1990		2000			
Case-study communities	**SEWB category**	**Average SEWB**	**SEWB category**	**Average SEWB**	**Change**	**Change**
						Percent
Greater Estacada Area	Medium	61.74	Low	58.36	-3.38	-5.47
Villages of Mount Hood from Brightwood to Rhododendron	High	73.74	Medium	72.97	-0.77	-1.05
Upper Hood River Valley	Medium	71.31	Medium	72.01	0.70	0.98

Source: U.S. Census Bureau 2000.

Table 8—Greater Estacada Area and Clackamas County population, 1990 and 2000

Indicator	1990	2000	Change
			Percent
Total population, Greater Estacada Area	8,098	8,335	3.00
Total population, Clackamas County	268,989	308,512	21.35
Population by race, Greater Estacada Area[a]:			
Total Caucasian population		8,335	
Total African American population		0	
Total Native American population		135	
Total Asian population		91	
Other		412	
2+ races (recorded in the 2000 census only)[a]		342	
Hispanic population (percent)	3.10	7.32	136.13
Median age, Greater Estacada Area	31.7	37.4	17.98
Median age, Clackamas County	35.2	37.5	6.53

[a] Census questions about race were different in 1990 and 2000 and are not comparable, so 1990 data cannot be shown.

Source: U.S. Census Bureau 2000.

Table 9—Age distribution, Greater Estacada Area and Clackamas County population, 1990 and 2000

	Age classes					
	0–4	5–19	20–29	30–44	45–64	65 and up
1990 Greater Estacada Area	718	2,069	1,189	2,018	1,572	830
2000 Greater Estacada Area	473	2,377	1,001	2,061	2,552	851
Change (percent)	-34.12	14.89	-15.81	2.13	62.34	2.53
1990 county	19,373	61,969	33,239	75,740	56,543	31,986
2000 county	21,875	74,796	37,475	78,395	88,327	37,523
Change (percent)	12.91	20.70	12.74	3.51	56.21	17.31

Source: U.S. Census Bureau 2000.

result, school enrollment has also increased, by 13.4 percent (table 10). These data indicate that Clackamas County and Greater Estacada Area are increasingly populated by a middle-aged population, including some families with school-age children. The percentage of the population with high school diplomas, bachelor's degrees, and graduate degrees has increased but remains lower than in surrounding areas.

The median household income in the Greater Estacada Area increased 11.4 percent between 1990 and 2000. In 1990, the average household in the Greater Estacada Area earned $35,898 (2000 dollars), 82 percent of the county average (table 11). That gap increased in 2000, when the median household in the Greater Estacada Area earned $40,010, falling to 77 percent of the county median. Despite the rise in median household income, the percentage of the population living in poverty increased, from 11.5 percent in 1990 to 12.4 percent in 2000. During the same period, poverty decreased from 6.9 to 6.6 percent in Clackamas County.

In the 10-year period between 1990 and 2000, the unemployed population increased from 8.5 percent to 9.6 percent. The number of people employed in agriculture, forestry, fishing, hunting, and mining decreased 25 percent, from 239 to 179. Forestry and agriculture are both in the same census category and it is likely that the growth of employment on Christmas tree farms and in nurseries obscures the full extent of the decline in people reporting employment in forestry. There was an 11-percent decline in the number of residents reporting employment in manufacturing, from 781 to 694. At the same time, employment in transportation and utility industries increased 52 percent, from 185 to 281. The construction industry and the education, health, and social service industry each increased just less than 50 percent. Only moderate increases occurred in the percentage of people employed in professional services, such as finance and real estate.

Figure 36 shows employment by each industry as a percentage of total employment. Relative to other categories, agriculture, forestry, fishing, hunting, and mining, and manufacturing had the biggest decreases in percentage of total employment (2.2 percent and 4.5 percent, respectively), whereas construction, and education, health, and social services had the greatest increases (2.8 percent and 3.7 percent, respectively).

Residents of the Greater Estacada Area attributed the decline along various dimensions of well-being to the spotted owl injunctions in the late 1980s and subsequent changes in forest management on the Mount Hood National Forest. Although respondents noted that forest management was not directly responsible for all of the changes in the area, most people identified it as the impetus for change, and thus partly attribute the protracted decline of timberrelated businesses and the constriction of the local economy to forest management policy. There was lack of clarity about the relation between forest management policies and changes in the community, but most residents stated that the reductions in timber harvests, loss of employment opportunities for logging contractors, the downsizing of the Forest Service, and curtailments in local mill activity were connected.

The changes in the timber industry and employment trends caused a broad constriction of the local economy. Many residents described a stagnating local economy, noting that timber-related business, such as fueling stations and logging supply stores, had closed down, downsized, or changed their focus. As a result, a number of other retail businesses closed down. Businesses in the city of Estacada now serve a smaller number of people who are, for one reason or another, dependent on local goods and services. According to interviewees, these changes created hardship for many residents and businesses.

The decline in timber harvesting and harvest-related business activities caused profound shifts in the community's social and economic composition. The mill stopped buying federal timber sales, and its operations have fluctuated over the years; opportunities for logging and other contractors diminished perhaps 90 percent, and the Forest Service closed and downsized local offices. The result was a substantial drop in employment opportunities and earnings for area residents and an outmigration of the

Table 10—Education indicators, Greater Estacada Area and Clackamas County, 1990 and 2000

Indicator	1990	2000	Change
			Percent
School enrollment, Greater Estacada Area	1,832	2,078	13.43
School enrollment, county	55,146	71,830	30.25
Completed high school, Greater Estacada Area (percent)	76.30	80.08	4.95
Completed high school, county (percent)	85.67	88.95	3.83
Bachelor's, graduate, professional degrees, Greater Estacada Area (percent)	9.67	14.07	45.50
Bachelor's, graduate, professional degrees, county (percent)	23.63	28.37	20.06

Source: U.S. Census Bureau 2000.

Table 11—Economic indicators, Greater Estacada Area and Clackamas County, 1990 and 2000

Indicator	1990	2000	Change
	– – *Dollars*[a] – –		*Percent*
Median household income, Greater Estacada Area	35,898	40,010	11.45
Median household income, Clackamas County	43,955	52,080	18.48
	– – – – – – *Percent* – – – – – –		
Unemployed, Greater Estacada Area	8.49	9.63	13.43
Unemployed, Clackamas County	4.23	5.00	18.20
In poverty, Greater Estacada Area	11.50	12.40	7.83
In poverty, Clackamas County	6.92	6.56	-5.20

[a] Adjusted for inflation.

Source: U.S. Census Bureau 2000.

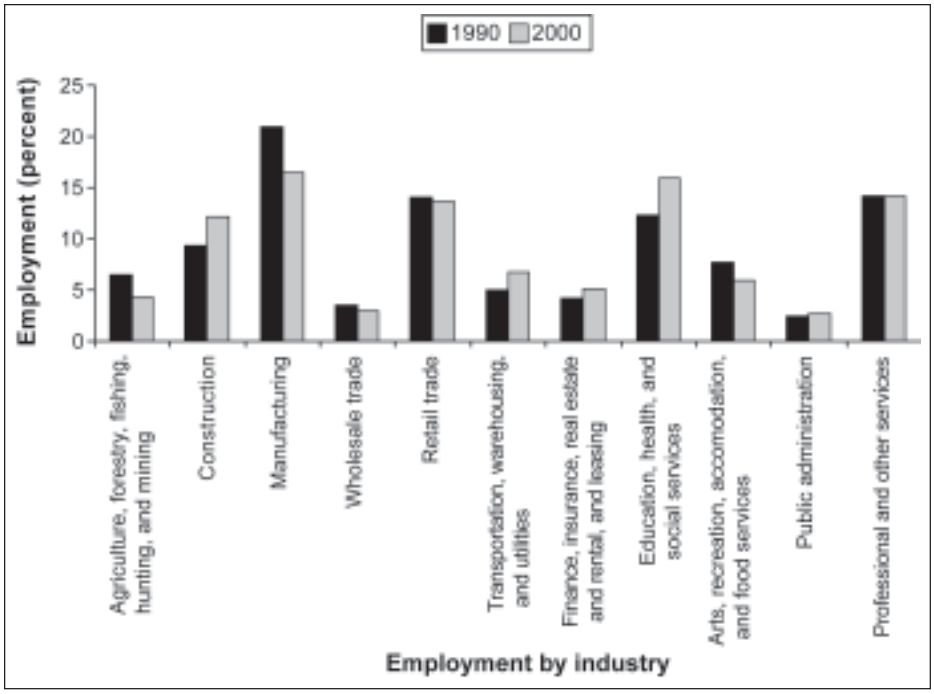

Figure 36—Employment by industry for Greater Estacada Area.

0-to-4 and 20-to-44-year-old segments of the population. The decrease in local job opportunities prompted many residents to obtain work requiring them to commute to Clackamas, Oregon City, and other locations in the Portland metropolitan area.

Perhaps owing to the dynamic nature of the area, business turnover has been steady for the past 10 to 15 years. Many of the people who moved to the Greater Estacada Area, predominantly into the unincorporated areas, retained their jobs in the Portland metropolitan area. Combined with the increase in number of long-term residents commuting, this has further hastened its transition into a bedroom community.

Adaptation to Change and the Role of Forest Service Assistance

Individuals, groups, and governmental entities in and around Estacada implemented a number of strategies to assist the community in adapting to changing social and economic circumstances. These efforts included broad-based community planning, infrastructure upgrades to spur business and industrial development, uncoordinated individual and group efforts, and "belt-tightening" measures by local government to make the most of scarce resources. Residents responded to the decrease in the number of available timber industry jobs in different ways. A number of loggers sought out work in other areas, such as Alaska, on a seasonal basis, whereas several contractors remained in the area but bid on sales situated in a wider geographic area. An equally sized or larger group of loggers retired, moved out of the area, or found work in construction or with retail and service businesses on the Interstate-205 and Interstate-5 corridors. Interviewees noted that working elsewhere on a seasonal basis did not prove an effective strategy and observed that, owing to competition and the instability of the wood products market, only a small number of loggers who remain in the area stayed in business. Many Forest Service employees retired early or relocated.

A small number of area residents continue to work in the industry or for the Forest Service. One local logging business employs about 30 people—half its former workforce. The firm is not able to bid competitively on sales on the Mount Hood National Forest and does not log sales on the Mount Hood National Forest. Whereas in the past, 90 percent of the contractors' logs went to mills in the county, now the mill's supply of logs comes from private lands or is harvested on lands located out of the area. The RSG mill in Estacada reports that it has not bid on a sale in the Clackamas District in 10 years.

Despite the downturn in the local timber economy and the Forest Service's diminished role in the community, the Forest Service continues to provide economic benefits through contracting opportunities, direct employment, grants, and other activities and programs. Several local businesses still obtain contracts awarded by the Forest Service. Additionally, a local logging supply business derives some income from sales of supplies to the Forest Service and logging contractors from Estacada and other areas.

The Forest Service was formerly one of the largest employers in the Greater Estacada Area. Employment with the Forest Service declined 60 percent on the Mount Hood National Forest from 1990 to 2000, including the loss of a number of high-paying jobs in the Greater Estacada Area. Some community members whose positions were eliminated moved out of the area. Nevertheless, the Forest Service is still a large and highly valued local employer. In addition to direct employment, the Forest Service has expanded use of the Clackamas River for rafting and kayaking by increasing the number of commercial use permits, thus supporting some opportunities for small business development.

Finally, as a beneficiary of Northwest Economic Adjustment Initiative (NEAI) investments, Estacada received over $5 million in grants and loans. These funds were used for water and sewer system improvements, business loans and development, and planning activities. The Forest Service awarded three grants to Estacada, each intended to address emerging needs in the community (table 12). The Forest Service funded a community action planning process in 1994, the first year of the NEAI. Estacada residents used the strategic plan as the basis for developing, getting funding

Table 12—Forest Service Rural Community Assistance grants awarded to Estacada as part of the Northwest Economic Adjustment Initiative

Year	Recipient	Project	Grant award
			Dollars
1994	City of Estacada	Community action plan	20,000
1995	Estacada Chamber of Commerce	Fisher Fabrication	32,000
1996	City of Estacada/Clackamas River Area Chamber	Visitor center facilities	20,742

Source: William M. Kay/Forest Community Research.

for, and implementing a number of community development projects. A number of projects have been successfully implemented, including a murals project. According to some interviewees, these projects helped the community maintain a positive community spirit and construct a new identity in the wake of the loss of the timber-based elements of Estacada's economy and heritage. Although some interviewees doubt the benefits of the projects, a greater number of interviewees thought that it was too soon to tell if the infrastructure developments will have the results intended.

Changing Relations Between the Greater Estacada Area and the Mount Hood National Forest

Between 1990 and 2000, local forest use and relations with the Mount Hood National Forest have changed markedly. Specifically, community members indicated that recreational use of the forest among local residents, as well as local reliance on the Mount Hood National Forest for subsistence activities, such as hunting and fishing, have declined. Nevertheless, a small number of residents continue to use the forest for recreation, a few maintain their livelihoods by working in the forest, and a number of newer residents report they appreciate the benefits derived from simply living adjacent to forested public lands.

Some interviewees reported that in recent years residents have been unable to access areas they were accustomed to using for camping, hunting, fishing, or gathering firewood. Several people specifically mentioned the Fish Creek road closure that resulted from floods in 1996 as the reason for the increasingly limited access to the Mount Hood National Forest. The area was a very popular destination for residents and tourists and it remained closed for an extended period of time. Some interviewees attributed this closure to the time-consuming nature of the procedural requirements of the Plan. Other interviewees, however, linked the closures of certain areas of the forest to destructive behavior on the part of local residents, such as illegal dumping, the shooting of trees, and using motorized vehicles in areas designated as off-limits to motorized use. Many interviewees reported using the forest less because they felt less secure owing to the increased incidence of vandalism.

Upper Hood River Valley

Community Change and the Effects of Forest Management Policy

The Upper Hood River Valley experienced moderate population growth between 1990 and 2000. The population increased 14 percent, roughly two-thirds the level of growth experienced in Hood River County (table 13). The median age increased only slightly while the 45-to-64-year-old age cohort increased nearly 80 percent between 1990 and 2000 (table 14).

The data on race (table 13) are reported for 2000 only, because the census survey question on race differed from 1990 to 2000 and data are not comparable. The census asked similar questions pertaining to Spanish, Hispanic, or Latin origin in 1990 and 2000, thus comparisons can be made. In 2000, nearly 30 percent of the population in the Upper Hood River Valley reported Hispanic ancestry, up

Table 13—Upper Hood River Valley and Hood River County population, 1990 and 2000

Indicator	1990	2000	Change
			Percent
Total population, Upper Hood River Valley	3,752	4,288	14.29
Total population, Hood River County	16,903	20,410	20.75
Population by race, Upper Hood River Valley[a]:			
Total Caucasian population		3,204	
Total African American population		21	
Total Native American population		6	
Total Asian population		101	
Other		845	
2+ races (recorded in the 2000 census only)[a]		110	
Hispanic population (percent)	21.48	29.04	35.20
Median age, Upper Hood River Valley	32.9	34.9	6.08
Median age, Hood River County	34.2	35.4	3.51

[a] Census questions about race were different in 1990 and 2000 and are not comparable, so 1990 data cannot be shown.

Source: U.S. Census Bureau 2000.

Table 14—Age distribution, Upper Hood River Valley and Hood River County population, 1990 and 2000

	Age class					
	0–4	5–19	20–29	30–44	45–64	65 and up
1990 Upper Hood River Valley	267	950	420	1,101	614	400
2000 Upper Hood River Valley	273	1,067	469	963	1,098	418
Change (percent)	2.25	12.32	11.67	-12.53	78.83	4.50
1990 Hood River County	1,402	3,620	2,073	4,393	3,037	2,378
2000 Hood River County	1,479	4,740	2,515	4,666	4,391	2,620
Change (percent)	5.49	30.94	21.32	6.21	44.58	10.18

Source: U.S. Census Bureau 2000.

from 21.5 percent in 1990, a 35-percent increase in the number of Hispanics. The population reporting Hispanic ancestry increased nearly 60 percent in Hood River County.

The percentage of the population that completed high school increased in the Upper Hood River Valley and Hood River County but both remain lower than the regional average at 72 percent and 78 percent, respectively, for 2000. The percentage of the population with high school degrees increased from 67.5 to 72.5 percent in the Upper Hood River Valley and the percentage of the population with bachelor's, graduate, or professional degrees increased from 16.9 to 21.8 percent (table 15).

Unemployment and poverty decreased in the Upper Hood River Valley and Hood River County. The unemployment rate dropped nearly 25 percent in the Upper Hood River Valley but remains high at 7.5 percent (table 16). The median household income (adjusted for inflation) increased in Hood River County but remained nearly unchanged in the Upper Hood River Valley. Categorical data on income distribution are difficult to adjust for inflation. However,

Table 15—Education indicators, Upper Hood River Valley and Hood River County, 1990 and 2000

Indicator	1990	2000	Change
			Percent
School enrollment, Upper Hood River Valley	892	1,071	20.07
School enrollment, Hood River County	3,386	4,562	34.73
Completed high school, Upper Hood River Valley (percent)	67.48	72.49	7.42
Completed high school, Hood River County (percent)	71.35	78.15	9.54
Bachelor's, graduate, professional degrees, Upper Hood River Valley (percent)	16.91	21.84	29.15
Bachelor's, graduate, professional degrees, Hood River County (percent)	17.99	23.06	28.18

Source: U.S. Census Bureau 2000.

Table 16—Economic indicators, Upper Hood River Valley and Hood River County, 1990 and 2000

Indicator	1990	2000	Change
	– – Dollars[a] *– –*		*Percent*
Median household income, Upper Hood River Valley	32,533	33,073	1.66
Median household income, Hood River County	31,326	38,326	22.35
		– – – – – Percent – – – – –	
Unemployed, Upper Hood River Valley	10.03	7.46	-25.62
Unemployed, Hood River County	8.60	6.55	-23.84
In poverty, Upper Hood River Valley	17.32	13.22	-23.67
In poverty, Hood River County	15.66	14.23	-9.13

[a] Adjusted for inflation.

Source: U.S. Census Bureau 2000.

there was between a ten- and twentyfold increase in the number of households earning more than $75,000 between 1990 and 2000 (table 17).

Figure 37 shows employment by each industry as a percentage of total employment. Manufacturing, wholesale trade, transportation, and professional services sectors experienced decreases in percentage of total employment between 1990 and 2000. Construction, retail trade, and other service sectors experienced the largest increases. Logging is one of many subcategories that appear under the agriculture, forestry, fishing, hunting, and mining sector. Employment in agriculture, forestry, fishing, hunting, and mining increased marginally, from 22 to 23 percent, likely reflective of changes in the orchard industry. Wood product manufacturing, including sawmills and other millwork, falls under the manufacturing sector, along with many other types of manufacturing. Employment in manufacturing jobs dropped in half, from 14 percent to 8 percent of total employment.

Population data obscure the extent of the in- and outmigration of residents. The population grew 14 percent, but given the 35-percent increase in the population with

Table 17—Household income distribution, Upper Hood River Valley (UHRV) and Hood River County, 1990 and 2000

	Household income (dollars[a])								
	<10,000	**10,001–14,999**	**15,000–24,999**	**25,000–34,999**	**35,000–49,999**	**50,000–74,999**	**75,000–99,999**	**100,000–149,999**	**150,000 and up**
	Number of households								
1990 UHRV	220	163	254	310	244	147	12	0	0
2000 UHRV	74	53	206	295	258	226	128	80	41
1990 county	1,098	699	1,361	1,206	1,038	701	173	97	13
2000 county	523	502	987	1,256	1,459	1,487	507	383	156

[a] Categorical income data are not adjusted for inflation.

Source: U.S. Census Bureau 2000.

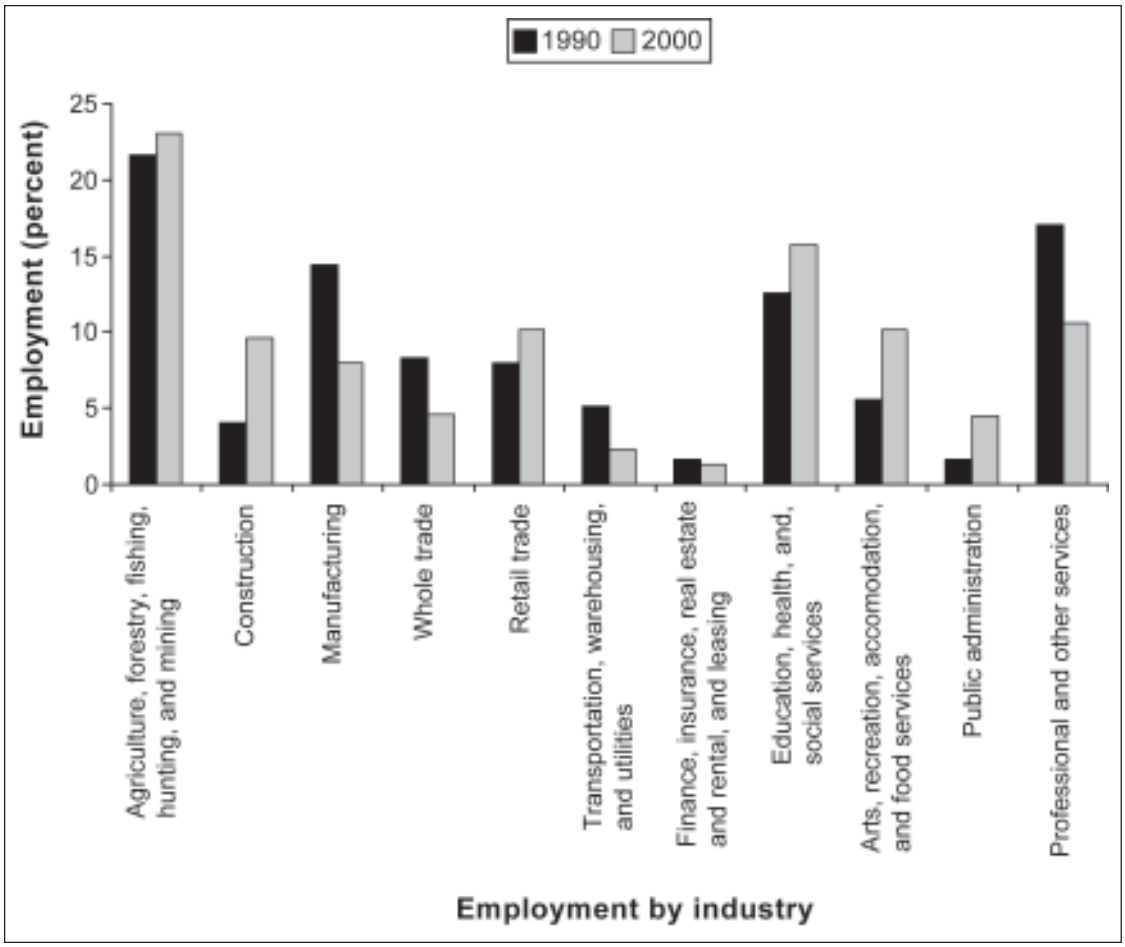

Figure 37—Employment by industry for Upper Hood River Valley area.

Hispanic ancestry, the increase of up to 200 households that now earn more than $75,000 annually, and the increases in educational attainment, it is likely the growth of the area's population obscures the loss of a substantial number of residents.

Interviewees noted that over the past 10 years many retirees and people who are seen as financially well off have moved to the Upper Hood River Valley. The increase in the 45-to-64-year-old population and the number of households earning more than $75,000 annually are indicative of this inmigrant population. Furthermore, they noted a high level of inmigration of people of Hispanic decent. They attribute the increase to single migratory workers with a history of working in the area bringing their families to the Upper Hood River Valley. Although the Hispanic population was historically largely migratory and connected to agriculture, as they have settled the area, their involvement in the community has broadened. There are several Hispanic-owned businesses, for example.

In discussions about changes in the timber industry, most interviewees refer to recent history and the closure of the three mills in the Upper Hood River Valley. All three mills closed in the 1990s. One was a fiber plant that burned down. Some residents believe that if the Plan had functioned as it was supposed to there would still be a mill in the Upper Hood River Valley. Others report that the area's mills were headed for closure independent of the supply of federal timber because the industry was not economically viable in the area.

In the mid-1990s, the mill that people in the area refer to as the "lower Hanel mill" closed. A portion of this mill site has been converted to a glass manufacturing plant and was scheduled to open in 2004. The last mill, "the upper Hanel mill," closed in the late 1990s. Some residents remain hopeful that the upper mill may reopen in the near future. Residents report that a couple of decades ago the local economy was supported by the timber and orchard industries. The local mills, for instance, supported about 300 to 400 jobs. Interviewees reported times were difficult for a number of residents after the mill closures. The poorest of the population who could no longer afford to live in the area left for work elsewhere. One person estimated that about half the people who lost jobs in the timber industry found replacement jobs locally in the fruit industry, manufacturing (welding), trucking, service industries, or work odd jobs or as handymen, although these were at wages below what they made in the timber industry. This shift could be accounted for in the larger increase in employment in the construction industry.

Adaptation to Change and the Role of Forest Service Assistance

Historically, residents of the Upper Hood River Valley were economically and culturally connected to agriculture and timber industries. Changes in the timber industry and how the community coped with these changes are numerous and diverse. Despite obvious shifts in demographics and economics, the Upper Hood River Valley has outwardly changed little as the resident population and economic base have diversified. Much of the adaptation to change for longer term residents in the community was individual; residents simply moved to find work in other areas or changed occupations. Many residents work outside the Upper Hood River Valley, and for this reason residents do not think of the area as having a functional economy.

Despite the downturn in the local timber economy and the Forest Service's diminished role in the community, the forest tries to provide economic and other benefits through contracting opportunities, direct employment, grants, and other activities and programs in addition to providing a supply of timber or access to firewood. By and large, however, residents have not been able to access contract opportunities, timber sales, or firewood for personal use or otherwise capture benefits. Insofar as employment with the Forest Service, residents report there are few full- or part-time opportunities. Several interviewees noted decreases in Forest Service personnel at the district level and decreases in seasonal jobs, in general. Some say the loss of local Forest Service positions and the outmigration of Forest Service employees has reduced dollars coming in to local businesses and has been detrimental to the community.

The Upper Hood River Valley derived minimal benefit from the NEAI. According to NEAI records, Hood River County received over $15 million dollars in NEAI dollars between 1994 and 1999. One grant for $10,000, for the Mount Hood Town Hall Technical Assistance, may have been for the Upper Hood River Valley. The project was reportedly derailed owing to the strong and opposing views on the issue of development.

Changing Relations Between the Upper Hood River Valley and the Mount Hood National Forest

A prevalent concern among community members is that the Forest Service, in recent years, has not been living up to their expectations of what a resource management agency should be, in terms of leadership, decisionmaking authority, and action. Interviewees recall when, over a decade ago, employees at the district office made decisions and responded to inquiries from the public. Residents perceive that local employees lack decisionmaking authority, and that decisions that are made are heavily influenced by people in Washington, D.C. Many people also spoke of a lack of trust in the Forest Service resulting from what they perceive to be a poor track record of forest management. People believe it is important for the Forest Service to rebuild that trust and suggest that it could best be achieved by working with high-quality contractors and logging companies. A few people noted the lack of Forest Service involvement in community activities.

Many interviewees said that they live in the Upper Hood River Valley area because of the amenities offered by Mount Hood and the Mount Hood National Forest. Residents value the clean water, clear air, and scenic vistas of their area. People value the peace and quiet of living near the forest. And although it was once common for local residents to use the forest to hunt, fish, hike, and engage in other activities, no resident described him/herself as an avid outdoor enthusiast or skier. A number of interviewees mentioned that residents gather mushrooms and berries.

Villages of Mount Hood From Brightwood to Rhododendron

Community Change and the Effects of Forest Management Policy

Between 1990 and 2000, the population in the Villages of Mount Hood increased more than 50 percent, from 2,445 to 3,670 (table 18). During the same period, Clackamas County grew 21 percent. Although the area's median age is 38.7, comparable with Clackamas County, the median age was 32.9 in 1990, low compared to 35.2 in Clackamas County. Nearly all age cohorts increased except the 0-to-4-age group, which experienced a 1.5-percent decline (table 19). This contrasts with a 13-percent increase in Clackamas County. The school-age population, i.e., residents aged 5 to 19, grew nearly 25 percent and school enrollment increased 25 percent as well. In the Villages of Mount Hood, the 20-to-29-year-old population grew 55 percent. By contrast, the same age cohort grew only 13 percent in Clackamas County. The 30-to-44-year-old population increased by 8.5 percent, just over twice the rate of increase experienced in Clackamas County. The most notable change was in the 45-to-64-year-old population, which grew 206 percent from 330 people to 1,012. The same age group increased 56.2 percent in Clackamas County, twice the area's overall population increase. The 65-and-up age cohort also expanded greatly, increasing 83 percent from 221 in 1990, to 405, in 2000 (table 19). These data indicate that the Villages of Mount Hood community is increasingly populated by younger couples, families with school-age children, retirees, and people approaching the traditional retirement age.

Because of changes in the census questions and reporting methods, it is impossible to accurately determine how racial composition changed between 1990 and 2000. However, the percentage of the population reporting Hispanic ethnicity increased slightly from 4.6 percent of the population in 1990 to 5.3 percent of the population in 2000 (table 18). During the same period, the county's Hispanic population doubled from 2.5 percent of the population in 1990 to 5 percent, in 2000.

Table 18—Villages of Mount Hood and Clackamas County population, 1990 and 2000

Indicator	1990	2000	Change
			Percent
Total population, Villages of Mount Hood	2,445	3,670	50.10
Total population, Clackamas County	278,850	338,391	21.35
Population by race, Villages of Mount Hood[a]:			
Total Caucasian population		3,369	
Total African American population		23	
Total Native American population		12	
Total Asian population		19	
Other		146	
2+ races (recorded in the 2000 census only)[a]		101	
Hispanic population (percent)	4.62	5.34	15.58
Median age, Villages of Mount Hood	32.9	38.7	17.63
Median age, Clackamas County	35.2	37.5	6.53

[a] Census data on race is not comparable between 1990 and 2000, so 1990 data cannot be shown.
Source: U.S. Census Bureau 2000.

Table 19—Age distribution, Villages of Mount Hood and Clackamas County population, 1990 and 2000

	Age class					
	0–4	5–19	20–29	30–44	45–64	65 and up
1990 Villages of Mount Hood	204	610	262	818	330	221
2000 Villages of Mount Hood	201	759	406	887	1,012	405
Change (percent)	-1.47	24.43	54.96	8.44	206.67	83.26
1990 Clackamas County	19,373	61,969	33,239	75,740	56,543	31,986
2000 Clackamas County	21,875	74,796	37,475	78,395	88,327	37,523
Change (percent)	12.91	20.70	12.74	3.51	56.21	17.31

Source: U.S. Census Bureau 2000.

In 1990, area residents were more educated than Clackamas County residents. However, with a 2.5 percent decline in the percentage of the population with bachelors, graduate, or professional degrees, this was no longer true in 2000 (table 20). As the area's population changed, so has the economic well-being of its residents. The median income in the Villages of Mount Hood community increased 25 percent between 1990 and 2000, unemployment decreased by nearly 13 percent, and the percentage of the population living in poverty decreased 8.25 percent. Although these data suggest area residents were better off at the time of the 2000 census than at the time of the 1990 census, they continue to lag behind the Clackamas County population (table 21).

In 1990, the median household income in the Villages of Mount Hood was $35,872. The median household income increased 25 percent, to $45,143 in 2000. Household income in Clackamas County increased 18.5 percent, from $43,955 in 1990, to $52,080 in 2000 (table 21). As should be expected, the percentage of the population living in poverty declined with the rise in median household income.

Table 20—Education indicators, Villages of Mount Hood and Clackamas County, 1990 and 2000

Indicator	1990	2000	Change
			Percent
School enrollment, Villages of Mount Hood	581	726	24.96
School enrollment, Clackamas County	55,146	71,830	30.25
Completed high school, Villages of Mount Hood (percent)	89.10	91.85	3.09
Completed high school, Clackamas County (percent)	85.67	88.95	3.83
Bachelor's, graduate, professional degrees, Villages of Mount Hood (percent)	28.21	27.50	-2.52
Bachelor's, graduate, professional degrees, Clackamas County (percent)	23.63	28.37	20.06

Source: U.S. Census Bureau 2000.

Table 21—Economic indicators, Villages of Mount Hood and Clackamas County, 1990 and 2000

Indicator	1990	2000	Change
		– – Dollars[a] *– –*	*Percent*
Median household income, Villages of Mount Hood	35,872	45,143	25.84
Median household income, Clackamas County	43,955	52,080	18.48
		– – – – – Percent – – – – –	
Unemployed, Villages of Mount Hood	6.87	6.00	-12.66
Unemployed, Clackamas County	4.23	5.00	18.20
In poverty, Villages of Mount Hood	6.91	6.34	-8.25
In poverty, Clackamas County	6.92	6.56	-5.20

[a] Adjusted for inflation.

Source: U.S. Census Bureau 2000.

The unemployed population decreased from 6.9 percent in 1990 to 6 percent in 2000. Countywide unemployment increased from 4.2 percent to 5 percent (table 21). There were some revealing changes in employment by industry sector. There was a 23-percent decline–a loss of 12 jobs–in agriculture, forestry, fishing, hunting, and mining. Additionally, there was a 10-percent decline, from 242 to 218, in employment in professional and other services industries. Employment in the retail trade industry increased 49 percent, from 123 in 1990 to 183 in 2000. Employment in the wholesale trade industry increased 50 percent from 31 to 46. Employment in the finance and real estate sector increased nearly 500 percent, from 27 in 1990 to 159 in 2000. Employment in health and education services increased 28 percent, from 223 in 1990 to 287 in 2000.

Figure 38 shows employment by each industry as a percentage of total employment. A given industry sector may have increased in percentage of people employed in that sector but may have decreased in percentage of total employment. For instance, employment in retail trade increased by almost half, but actually decreased slightly in its share of percentage of total employment. Also notable

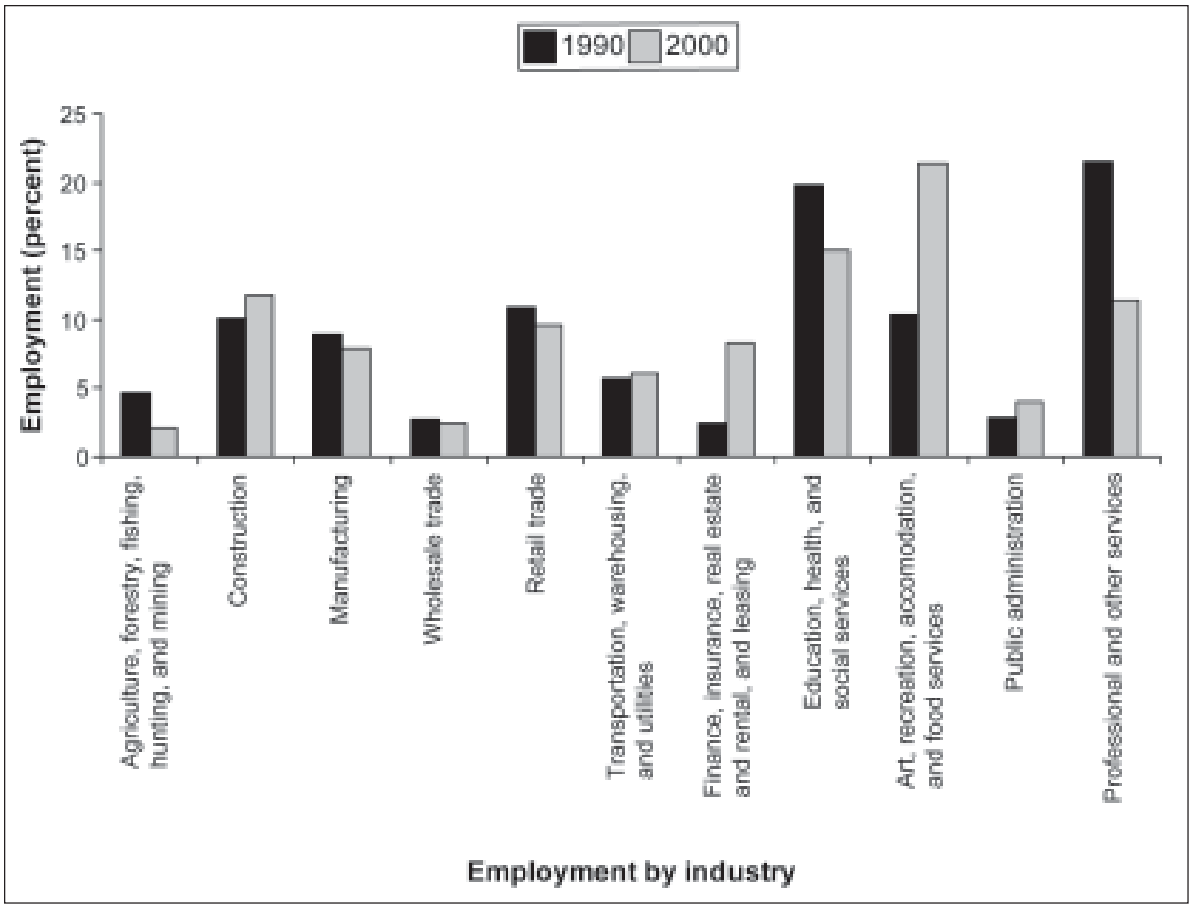

Figure 38—Employment by industry for Villages of Mount Hood area.

is that although employment in agriculture, forestry, fishing, hunting, and mining declined 23 percent, it made up only 5 percent of total employment in 1990 and even less (2 percent) in 2000.

The area's socioeconomic well-being category dropped from "high" to "medium," but its score dropped less than a point, from 73.74 to 72.97 (table 7). Although there has been little change in the area's socioeconomic well-being, demographic and economic data suggest the area has experienced a good deal of change over the past 10 years. Residents reported the following changes: an increased number of people commuting to work elsewhere; more partially retired residents; and a larger "lower income" population. They reported there was little change in the local economy besides the housing and real estate market and the proliferation of snowboard camps.

The housing market was reportedly affected by downsizing within the Forest Service. Whereas residents formerly lived on the mountain and worked for the Forest Service, in the logging trades, or visited seasonally, people now live on the mountain for a number of different reasons. The central reasons are to take advantage of the housing market and to live in the forested environment for the recreational opportunities it provides. Several residents said Forest Service employees who transferred to other locations, retired early, or lost their jobs and moved elsewhere left a supply of "affordable" houses. Forces external to the community also came into play. The housing market was affected by the growth and the demographic composition of the Portland metropolitan area and the Villages of Mount Hood's location in proximity to Portland. According to a

number of residents, what were once "recreational homes" became affordable housing for first-time homeowners willing to commute to the Portland metropolitan area. Although many residents said newer full-time residents were "at the lower economic scale," census data indicated there was a decline in the number of households that earned less than $45,000 annually. This suggests that "first time" or "lower economic scale" home-buyers are earning above the median household income.

Most residents commented on the importance of the Forest Service presence in the community, but few drew con-nections between forest management or the Plan, and social and economic changes that have taken place in the Villages of Mount Hood.

Some of the connections interviewees made between the Plan and social and economic change included the following. Some interviewees stated that the loss of Forest Service jobs was likely due to changes in forest management resulting from the Plan. Some interviewees noted that the Plan's implementation was accompanied by a loss of local, family-wage jobs and a slight reduction in the number of residents with graduate educations or professional degrees. The loss of Forest Service employees affected the local housing market by temporarily increasing the stock of affordable houses and expedited the community's transition toward a bedroom community. Aside from the loss of permanent and part-time positions with the Forest Service, people report there were no appreciable changes in employment in forestry, manufacturing, and transportation occupations. Residents noted logging activity on private lands offset the loss of employment opportunities on the Mount Hood National Forest for the few contractors and log haulers that remained in the area.

Business owners generally said the Plan did not affect them. Many business owners said the loss of Forest Service employees was the biggest change in the community that "might be related" to the Plan. The reduction in Forest Service employees, however, was offset by a 50-percent increase in the area's population. Many of the new residents are retirees on fixed incomes or relatively high-paid commuters; both provide a stable customer base to the small number of local businesses.

Interviewees identified the following factors as the key drivers for social and economic changes taking place in the community: increased traffic on Highway 26, the expanding regional economy, developments at the Mount Hood ski areas, and weather. Local business and the residents in the community employed by local service businesses rely heavily on visitors that bring money into the local economy.

Adaptation to Change and the Role of Forest Service Assistance

The Villages of Mount Hood experienced a good deal of change over the past decade. Much of this change was the continuation of trends that began in the 1970s: the growth of the retirement and commuter populations, the continued growth and development of the recreation-based economy, and the contraction of forest-based employment. Each of these trends continued along on their own trajectories and spurred some changes but had little effect on overall community socioeconomic well-being.

The community has grown steadily over the past 10 to 15 years; at least a third of the population is new to the community since 1990. Groups such as the Neighborhood Missions provided emergency help to residents in need. Traditional community service groups such as the Lions Club—formerly a "rallying point" in the community—did community projects. The local Citizen's Planning Organization, a citizen group dealing with land use planning issues, convened regularly, but interviewees reported that its meetings were poorly attended unless controversial issues were on the meeting agenda. In addition to the strategic planning group, local businesses are organized under the chamber of commerce, whose activities ebb and flow, partly owing to the steady turnover of business owners, the time demands of running a business, and the fluctuations in the economy. Generally, the chamber promotes the area to draw more visitors to the community and the Mount Hood National

Forest. Finally, interviewees indicated that low rent and inexpensive housing had resulted in the increase in methamphetamine labs and drug use. A few residents successfully organized efforts to root out the labs and decrease drugs, earning statewide recognition for their work.

Residents cited a number of reasons for the lack of success of community-wide efforts including lack of governance, the level of volunteerism required to support the efforts, fragmentation within community, and polarized views about the community's development. The outmigration of Forest Service employees combined with the community's changing composition has affected the ability of community members to work together and address changing economic and social conditions. Residents report that Forest Service employees and resources constituted important elements in the organizing capacity of the community in the past; as individuals they played an active role in holding the community together and enabling it to address issues as they arose.

Until fairly recently, the Forest Service had done little to help build community capacity or to support economic development. Residents were unaware of Forest Service or NEAI grants. We were unable to find any records of NEAI funds that were awarded to the community. The Forest Service and the Chamber of Commerce worked together under a cooperative grant to provide "guest services," sharing the responsibility of selling permits and giving information and directions to visitors. The cooperative efforts did not have the desired results initially, but efforts were renewed after the NEAI ended. There is also a broad-based initiative to address recreation on the Mount Hood National Forest, but the local business community is not engaged in the process.

According to interviewees, the forest has not played a significant role in residents' adaptation strategies. Contracting, employment, and grants have not contributed in a meaningful way to change within the community over the past 10 years. Few residents were aware of contracting opportunities with the Forest Service. Residents associated with logging and the timber industry reported that most of the small number of contractors moved out of the area. The loggers who remain in the area reportedly log private lands, work that primarily involves falling trees on residential properties. Employment related to the Mount Hood National Forest has declined and its local workforce has been cut substantially. One resident claimed the Zig Zag District office eliminated or transferred up to 70 percent of its employees to Sandy or other locations. The result is there are fewer Forest Service employees working in the Villages of Mount Hood and fewer Forest Service employees living in the area.

Changing Relations Between the Villages of Mount Hood and the Mount Hood National Forest

Many people live in the Villages of Mount Hood because they want to live in a mountain community, they work in businesses that serve tourists and people that visit the area to recreate, or because the area is affordable. For many, there is a very intimate relation between the forest and themselves. As such, they are concerned about access to and management of the forest for recreation but also for water quality and habitat for wildlife populations. However, unlike in the past, very few residents rely on the Forest Service for their livelihoods.

The reduction of the local Forest Service workforce has certainly diminished the Forest Service's presence in and relations with the community. Although the local community views itself as a stakeholder with an interest in forest management, this entails much less of a direct, multifaceted, and meaningful relation with the Forest Service than in the past.

Summary of Community-Level Change and Perception of the Northwest Forest Plan

Types of Communities

The three communities selected for the Mount Hood National Forest study differ considerably in location, history, and demographic and economic composition. It is not surprising therefore, that the effects of changes in flows

of socioeconomic benefits from the forest were notably different in each community. How the communities are similar and different and the changes they experienced in the 1990s are summarized here.

The Greater Estacada Area and the Villages of Mount Hood are located in Clackamas County, an urban county that includes portions of the Portland metropolitan area. The Greater Estacada Area is located on a state highway 34 miles from Portland, Oregon. The study area encompasses the City of Estacada and surrounding unincorporated areas. The City of Estacada includes established commercial, industrial, and residential areas. Areas outlying the city are sparsely populated agricultural and timber lands with a limited amount of commercial and industrial development.

Just to the north and east, the Villages of Mount Hood from Brightwood to Rhododendron (Villages of Mount Hood) begin 41 miles east of Portland. The villages comprise a narrow strip of private lands along Highway 26, a major transportation route from the Portland metropolitan area over Mount Hood to the Warm Springs Reservation, Madras, Bend, and other destinations in Central Oregon. From west to east, the Villages of Mount Hood transition from more strictly commuting to more strictly recreation-based communities and economies.

Located on the drier and more sparsely populated east side of the forest, the Upper Hood River Valley is the southernmost third of the Hood River Valley that extends south from the city of Hood River, which is located on Interstate-84 next to the Columbia River. Private land in the Upper Hood River Valley consists of residential, agricultural, and some commercial land. Most commercial and government services in the Upper Hood River Valley are located in the town of Parkdale.

A significant portion of the area surrounding the case-study communities is under Forest Service management. This includes tracts of U.S. Department of the Interior Bureau of Land Management (BLM), state, and county lands and private industrial timberlands. Although the types of relations with the forest are varied, the connection between the forest and the people remains important to the social and economic well-being of the communities.

All three communities evolved over time to include forest-based economies. Of the three communities, the Greater Estacada Area, developed as the most timber-dependent community in which a mill, loggers, Forest Service employees, and a host of support business relied on the flow of timber from the national forests. Although the supply of timber from the forest was important for community socioeconomic well-being in Villages of Mount Hood and Upper Hood River Valley, other sectors provided for economic diversity, namely agriculture in the Upper Hood River Valley, and recreation and tourism in the Villages of Mount Hood.

The timber-based element of the Villages of Mount Hood's economy has been in steady decline since the beginning of the 1970s, and perhaps earlier. There was little or no timber industry infrastructure or employment left in the Villages of Mount Hood during the 1980s and 1990s. The most significant legacy of the timber-based economy was the number of people employed by the forest, a substantial number of whom lived in the community. As jobs were cut or transferred in the 1990s, these people and their families left the area. Development trends in the 1970s and 1980s, led to a more diversified community incorporating resort, retirement, recreation and tourism, and bedroom community elements.

Services for tourism and recreation exist in all three communities. Tourism and recreation serves as an important component of the Villages of Mount Hood community, and therefore the number of services and development of resources is greatest there. This is not to say there are not significant developments in Upper Hood River Valley however. Some major draws in the Upper Hood River Valley include Mount Hood Meadows Ski Resort and Cooper Spur Mountain Resort. Increasingly, visitors are accessing the forest via Highway 35—the Mount Hood Highway—that runs through the Upper Hood River Valley. There are limited recreation and tourism services in the Greater Estacada Area, but it provides access to the upper Clackamas River, Table Rock, Bull of the Woods, and portions of the Salmon-Huckleberry Wilderness Area, as well as Timothy Lake and Bagby Hot Springs. Recreational

tourism has played a minor but consistent part of the area's development and its local economy. Increasingly, residents and entrepreneurs are focusing on generating income from tourists who pass through Estacada on their way into the Mount Hood National Forest.

Recreation and tourism are playing increasingly important roles in the socioeconomic well-being of the Upper Hood River Valley community, although recreation and development are controversial issues among residents. Until the 1980s, the Upper Hood River Valley was primarily supported by timber and agriculture (orchards) industries. Although the local mills played important roles in the local economy throughout the 1970s, 1980s, and early 1990s, agriculture also was a primary source of local employment in the Upper Hood River Valley. Agriculture played an integral role in Estacada's early history and remains a vital component of the local economy and culture. Specialty nurseries, and Christmas tree farms in particular, dominate the local agriculture sector.

The similarities between the three communities stem from commonalities in their histories and their geographic placement adjacent to the forest. However, a few key differences between the communities have served to either facilitate or constrain the communities' development over time. A significant factor affecting the study communities' development is governance. The Upper Hood River Valley and Villages of Mount Hood are both unincorporated areas. As such, land use zoning strictly determines the location, intensity, and type of development. Estacada, on the other hand, includes an incorporated area and therefore has greater flexibility in pursuing commercial, industrial, and residential development. The presence of local government also provides Estacada greater connectivity to state and federal funds and programs for development. Despite its incorporation, however, Estacada does not provide a diversity of goods and services, and many residents travel to the metropolitan area for them. Residents in the Villages of Mount Hood and Upper Hood River Valley must leave their communities for most goods and services. A second key difference is the location of the study communities with respect to the Portland metropolitan area. The Greater Estacada Area and the Villages of Mount Hood are close enough to the metropolitan area to support bedroom-community development. This has proved vital for supporting strong construction industries in both communities over the past 10 to 15 years.

Changes Taking Place 1990 to 2000

The Plan socioeconomic assessment interpretive report (Charnley 2006), of which this report is a related publication, examined changes in community socioeconomic well-being that occurred between 1990 and 2000 in all of the communities lying within 5 miles of Mount Hood National Forest boundaries. In 2000, more communities fell into the medium category and fewer in the low and high categories. The Upper Hood River Valley remained in the medium category, Villages of Mount Hood slipped slightly from high to medium, although its average changed less than one point, and the Greater Estacada Area fell most dramatically (3.38 points) from medium to low.

Overall, the communities' populations increased; the majority of the inmigrants were 45 to 64 years old. There was an outmigration and loss of nearly all other age categories, particularly the 19-to-34-age group. The populations are increasingly diverse, particularly in terms of ethnicity, as the percentage of the population reporting Hispanic ethnicity has increased in all three communities. The following summarizes some of specific changes in demographic composition and social and economic well-being.

Population—

Population growth was most explosive in the Villages of Mount Hood, which grew over 50 percent, from 2,445 in 1990, to 3,670 in 2000. The Greater Estacada Area population grew 11 percent, to 9,315 and the Upper Hood River Valley's population grew to 4,288, a 14-percent increase from 1990.

Race and ethnicity—

Race is difficult to determine given changes in census categories and reporting trends by residents. In general however, racial diversity appears to have increased

slightly in all communities, where between 5 and 10 percent of the populations are non-Caucasian. The percentage of the population reporting Hispanic ethnicity increased in all three communities. The Hispanic population nearly doubled in the Greater Estacada Area and the Villages of Mount Hood, and increased 35 percent in the Upper Hood River Valley. Whereas Hispanics now represent nearly 30 percent of the population in the Upper Hood River Valley, they represent 5 and 7 percent of the populations in the Villages of Mount Hood and Estacada, respectively.

Age—
Whereas the median age rose to 37.4 in the Greater Estacada Area and to 38.7 in the Villages of Mount Hood, it increased but remained young, at 34.9, in the Upper Hood River Valley. The 45-to-64-year-old age cohort increased the most in all three study communities; it increased over 200 percent in the Villages of Mount Hood. All other age groups in the Villages of Mount Hood experienced growth except the 0-to-4 age cohort. Greater Estacada Area's population up to age 44 decreased, whereas only the 30-to-44 cohort decreased in the Upper Hood River Valley.

Median household income—
Although the median household income increased in all three communities, residents in the Greater Estacada Area and Upper Hood River Valley are falling further behind their county counterparts. The median household income remains quite low at $35,898 in the Greater Estacada Area and $33,073 in the Upper Hood River Valley. The average household in the Villages of Mount Hood, however, earns $45,143. Whereas the median household income is low in the Greater Estacada Area and Upper Hood River Valley, the number of households earning $75,000 or more annually doubled in the Greater Estacada Area, increased fourfold in the Villages of Mount Hood, and increased ten- to twentyfold in the Upper Hood River Valley.

Poverty and unemployment—
In the Greater Estacada Area, the percentage of the population living in poverty increased from 11.5 percent in 1990, to 12.4 percent in 2000, whereas the percentage of the population living in poverty in the Villages of Mount Hood and Upper Hood River Valley dropped. The rate of poverty in the Villages of Mount Hood is nearly half the rate in Upper Hood River Valley, which remained high at 13.2 percent, in 2000. Although unemployment rates dropped in both the Upper Hood River Valley and Villages of Mount Hood, it remains high in the Upper Hood River Valley, at 7.5 percent. The unemployment rate increased to 9.6 percent in the Greater Estacada Area.

Employment by industry—
Employment in agriculture, forestry, fishing, hunting, and mining industries increased 8 percent in the Upper Hood River Valley, and fell 60 percent in the Villages of Mount Hood, and roughly 33 percent in the Greater Estacada Area. Masking the loss of employment in forestry was the increase in employment in agriculture in the Greater Estacada Area and the Upper Hood River Valley. Employment in the construction industry played an important role in the local economies. It more than doubled in the Upper Hood River Valley and increased 33 percent in the Greater Estacada Area. Notable are increases in employment in transportation and utilities, education, health and social service industries, and decreases in employment in retail trade in the Greater Estacada Area. In the Villages of Mount Hood, employment in the finance and real estate industries increased nearly 300 percent, from 27 in 1990, to 159, in 2000.

Change in Flow of Socioeconomic Benefits From Forest to Community

The changes in demographic and economic composition were portrayed by many interviewees as the result of dual processes: (1) the loss of timber industry and related jobs with the resulting outmigration of residents and the constriction of the local economy, including the loss of goods and services businesses and (2) the inmigration of people who commute or telecommute to work, or are partially or fully retired, or are associated with the agriculture and tourism industries. The first process is discussed here.

Despite the downturn in the local timber economy and the Forest Service's diminished role in the community, it continues—as noted in the previous chapter—to sustain a reduced flow of socioeconomic benefits to the communities through contracting opportunities, direct employment, grants, and other activities and programs. The change in natural resource management on the Mount Hood National Forest created hardship for many residents and businesses. The reduction in timber harvesting led to the loss of employment opportunities for logging contractors and the Forest Service and curtailments at local mills or contributed significantly to mill closures. Although a few logging contractors remain, they employ fewer people and are unable to bid competitively on federal timber sales. Those who remain in the area reportedly log on private lands, that is, residential, industrial properties, or county lands. A few loggers sought out seasonal work in other states, and others remained in the area but work in a wider geographic area. A larger group of loggers retired, moved out of the area, or found work in construction or with retail and service businesses. Although service (i.e., restoration) contract opportunities with the forest have declined, a small number of contractors are still able to win Forest Service contracts. Business dependent on logging activities, fueling stations, logging supply stores and the like, derive little income from sales of supplies to the Forest Service and logging contractors and many have shut down. Employment with the Forest Service declined 60 percent on the Mount Hood National Forest, and the communities lost a number of high-paying jobs and part-time/seasonal job opportunities. The implication of these downturns has been a broad constriction of local goods and service businesses reflected in the economic indicators above: loss of employment and reduced income, but decreased levels of poverty in two of the three communities.

However, the forest's recreation program has continued to receive a lot of attention and investment. It has expanded use of the Clackamas River for rafting and kayaking by increasing the number of commercial use permits, and opened Mount Hood for skiing and snowboarding year round. These changes have provided opportunities for tourism- and recreation-based businesses, potentially an important avenue for economic development in the Upper Hood River Valley and the Greater Estacada Area.

Other Causes of Change

Although forest management is not directly responsible for all of the changes that have taken place, most people say it was the impetus for the protracted decline of timber-related businesses and the general constriction of the local economies, except in the Villages of Mount Hood. There have been some positive trends to offset the broad constriction of the local economies. Most significant, has been the inmigration of people who commute or telecommute to work, are partially or fully retired, or are associated with the agriculture and tourism industries. The new residents have stimulated the diversification of the goods and services economy. New residents have populated each of the three study areas, often attracted by employment opportunities or the natural amenities, including clean air, clean water, and scenic and recreational opportunities. Their presence is evident in the shift in median age, income distribution, and ethnicity data.

Addressing Change

Community service organizations, citizen's groups, and government all worked to address unmet needs of individuals and families and to address community and economic development. These efforts were marginally supported by the forest. Although the Upper Hood River Valley and Villages of Mount Hood received almost no economic assistance and derived no direct benefits from the NEAI, Estacada received over $5 million in NEAI investments grants and loans. These investments supported new industrial or commercial development and fostered the development of a positive community spirit and new identity in the wake of the loss of the timber-based elements of the economy and heritage. Although the Forest Service and the

chambers of commerce have worked together under cooperative agreements to provide "guest services"—selling permits, giving tourism information and directions to forest recreation sites, the efforts have largely been unsuccessful at spurring desired levels of economic development at the time this research was conducted.

Interviewees attribute the lack of success of community-wide efforts to the lack of governmental structures to facilitate the project planning and development process, the low level of volunteerism to support efforts, fragmentation within community, and polarized views about community development. From what residents report, Forest Service employees and resources historically played an important role in the organizing capacity in the community; as individuals they played an active role in holding the community together and enabling it to address issues as they arose. The outmigration of Forest Service employees combined with the community's changing composition has affected its ability to work together and address changing economic and social conditions. Furthermore, the inmigration of new population has resulted in a dynamic environment that has at times been destabilizing for addressing development by creating fragmentation and polarization within the community. This is evident across all three communities.

Community-Forest Relations

Given the decline in active use of the forest and the reduced importance of the forest and Forest Service by residents in the communities, the once close relations to the forest and Forest Service have greatly diminished. Local use and relations with the forest have changed markedly as recreational and subsistence uses have declined. In the past, community members used the forest heavily for their livelihoods. As residents' economic dependence on the forest has lessened, so too have their relations with the forest weakened. A small number of residents continue to use the forest for recreation, and a few maintain their livelihoods by working in the forest.

According to interviewees, many of the recent inmigrants to these communities moved to enjoy the amenities offered by Mount Hood and the Mount Hood National Forest, including clean water, clear air, scenic vistas, and the peace and quiet of living near the forest. As such, they are concerned about access to and management of the forest for recreation as well as for water quality and habitat for wildlife populations. Many long-term residents want to preserve the same amenities as well, but many would also like to see the forest managed in ways that sustain forest health, the agricultural sector and, to the extent possible, timber industries.

Despite differences in how they view the forest, both long-term residents and newcomers share a common perception that local forest management employees increasingly lack decisionmaking authority. Many have lost trust in the Forest Service owing to a perceived poor track record of forest management, and they desire more meaningful Forest Service involvement in their community activities.

Chapter 4: Communities and Forest Management

Chapter 4 addresses two of the socioeconomic goals of the Northwest Forest Plan (the Plan): (1) to improve collaboration between agencies and communities and (2) to protect forest values and environmental qualities associated with late-successional, old-growth, and aquatic ecosystems. To determine the extent to which the Forest Service has achieved these goals, we examine current forest management issues of concern to communities and the role of the Plan in shaping those issues. We also look at the role of communities in collaborating with the forest to address management issues and at how the Plan has influenced collaborative relationships. Chapter 4 is based on interviews with both forest employees and community members.

Collaboration in Forest Stewardship

The primary objective of the Plan was to enable the USDA Forest Service to fulfill its statutory obligation to provide adequate protection for the northern spotted owl (*Strix occidentalis caurina*), marbled murrelet (*Brachyramphus marmoratus*), and other threatened or endangered species. The framers of the Plan believed that the ability of the federal agencies to fulfill this mandate hinged upon the development of better and more diverse communication networks between the federal land management agencies and local communities. The following section provides an overview of the general trends in collaboration on the Mount Hood National Forest and the communities that are part of this study.

General Trends in Collaboration

Over the past decade, the Mount Hood National Forest has increased its emphasis on collaboration and developing partnerships to administer Forest Service policy, goods, and services. Agency personnel said this trend contrasts with the approach and outlook of a decade or more ago, when forest managers preferred to work independently of other entities and when public engagement was a process for allowing the public to comment and react to projects for which the forest had already defined the key issues and objectives.

However, partnerships historically constituted an integral component of forest management on the Mount Hood National Forest, particularly with regard to recreation. The Timberline Lodge concession is one example of a partnership dating back several decades. Partnerships are growing in number and expanding in scope; concessionaires at campgrounds and developed recreation sites (such as Timberline Lodge), outfitters and guides, volunteers (such as Mazamas wilderness stewards) are increasingly interacting with the public and providing information and education about forest and recreation management rules, practices, and opportunities.

The Forest Service has relied on volunteers for several decades, and the Mount Hood National Forest's volunteer numbers have historically been among the highest in the Nation. The peak for numbers of volunteers was in the late 1980s through the early 1990s. The ways volunteers are used and managed has changed as a result of staff cutbacks, and the subsequent decreasing number of field employees available to supervise projects. The volunteer program has moved toward more coordinated and group volunteer activities (hosted groups) that require less supervision.

As a result of budget declines, reorganization, and shifts in management focus, program areas that serve collaborative types of functions, namely public relations, volunteer coordination (including hosted, youth, and senior volunteer programs), and partnerships, have recently become more integrated to reduce duplication of services, and to enable better communication, coordination, and service delivery.

Types of Collaboration

Interviewees reported on a variety of collaborative activities on the Mount Hood National Forest. Rather than the collaborations in the past that focused on recreation, activities range from on-the-ground forest stewardship projects to environmental education and the direct provision of services to forest users. Some examples include the volunteer and hosted volunteer programs, particularly with application to recreation management (e.g., the Mazamas

trail crews and wilderness stewards who also provide face-to-face time with recreationists), and collaboration with the seven active watershed councils around the Mount Hood National Forest.

A number of collaborative projects were identified in the Villages of Mount Hood community, including a riparian restoration project with the Resort on the Mountain, the Cascade Streamwatch project with the USDI Bureau of Land Management, and stream enhancement projects with the Sandy River Basin Watershed Council. Other activities not directly related to on-the-ground resource management include the initiation of a new model for collaboration discussions with recreation stakeholders, fire prevention education, and collaborative efforts with local communities and chambers of commerce in local festivals and bird and fish counts.

Interviewees in the Greater Estacada Area and Upper Hood River Valley communities reported very little in the way of collaboration with the Forest Service. Although most interviewees were unaware of Forest Service efforts to engage the community, a small number of interviewees reported that since the implementation of the Plan, the Forest Service was sharing its expertise with groups, such as watershed groups and soil and irrigation districts. A couple of interviewees noted an increasing trend of the Forest Service bringing people together to discuss specific forest management issues. Opinions were mixed as to whether this was an effective strategy for initiating or implementing collaborative efforts.

Factors Promoting Collaboration

Interviewees discussed a number of factors that have contributed to the change in philosophy affecting how the Mount Hood National Forest engages partners and the public. First, the Plan's emphasis on ecosystem management and the recognition that ecosystems cross ownership boundaries has broadened perspectives on the need for interactions between the public and agencies, as well as between agencies. This contrasts with the past when the forest's management focus was almost exclusively limited to activities within its jurisdictional boundaries. Second, budget and staff cutbacks have encouraged, and in some cases forced, the Mount Hood National Forest to seek out partnerships to achieve its management objectives. In particular, the increasing demand for recreation uses and opportunities on the Mount Hood National Forest has not been met with increasing budgets for recreation. Although the cost of managing volunteers is high (some estimate that it costs more to implement a project with some types of volunteers than without), some employees stated that the benefits of building ownership and stewardship of the Mount Hood National Forest and connecting with the public are also high. There is a growing recognition of actual and potential benefits of collaboration, namely building civic ownership in the Mount Hood National Forest and maintaining or increasing the relevancy of the agency. This relates to the perception of increased public interest in, and expectations about, public land management. Third, several regional and national initiatives and policies have provided incentives for collaboration. These include the Governor's Watershed Initiative, Resource Advisory Committees, the Wyden Amendment, and a national emphasis on recreation management. And last, current leadership on the forest emphasizes collaboration as a new way of doing business.

Challenges to Collaboration

Agency and community interviewees identified several barriers and challenges to collaborative resource management.

Collaboration is viewed as a major emphasis, coming down explicitly from Mount Hood National Forest leadership. One concern, however, is that the emphasis on collaboration is occurring at a time when staff and program budget cuts make it difficult to build and maintain many partnerships. Consequently, staff lack the time to engage, nurture, and follow through with partnerships. There is concern that the partial commitment to collaborative efforts that results from limited time and staff may do more harm than good. Some interviewees suggested that this is increasingly problematic in an era where many staff serve multiple roles, and some programs are just barely able to

perform day-to-day activities with the existing staff, let alone engage more partners to do new or expanded work. Budgetary constraints have also made funding and supporting collaboration difficult. For instance, a local chamber of commerce may have an idea that the Mount Hood National Forest would like to support but neither entity may have the funding to make it happen. In addition, the difficulties of negotiating the maze of grants and agreements procedures and authorities can hinder some prospective collaborative activities. To complicate matters, as some interviewees noted, the Mount Hood National Forest has not been able to anticipate the effects that budget declines in one program have on other programs. For instance, the decline in the timber budget and staff has affected the ability to manage and supervise volunteer projects in recreation and wildlife. The number of general schedule (GS)5/7-level field employees available to plan, manage, and supervise work and meet the demand for volunteer opportunities has also declined. Aside from time and monetary constraints, some interviewees noted the existence of internal cultural barriers to collaboration. The attitude that the Forest Service can do the work best itself is still prevalent among some employees and was observed by many community interviewees.

Some interviewees in the study communities were aware of the Forest Service's interest and support for collaborative and partnership processes. Several interviewees noted the district rangers' efforts to attend community meetings and attempts to remain visible and accessible to the community. They expressed appreciation for field employees who participated in on-the-ground efforts and supported collaborative processes.

Interviewees also identified a number of factors that have eroded the Forest Service's ability to work effectively with the community. These obstacles include the agency's decisionmaking process and insufficient decisionmaking authority at local levels, its decreased physical presence in the community, and frequent staffing changes. Some recreation permittees felt the Mount Hood National Forest's collaborative efforts suffered from a lack of vision. They also commented that employees often lack the skills to make the collaboration work. Other respondents felt that the lack of collaboration resulted from a combination of the Forest Service not being proactive in addressing collaboration and the community not aggressively approaching the Forest Service to work collaboratively on resource management activities. A majority of the interviewees did not see a strong relationship between their concerns and forest management activities. This, combined with diminished Forest Service presence and decline of management activities, has created an environment where there is little mutual interest in collaborative stewardship activities.

Overall progress toward achieving the collaboration goal—

On the Mount Hood National Forest, the Plan is viewed as setting a tone and precedence for interactions between agencies. The emphasis on working across ownerships has facilitated several collaborative endeavors, such as those associated with the watershed restoration and the Wyden amendment, that involve multiple agencies or community groups—notably, projects that took place on private land rather than USDA Forest Service-administered land. A small handful of interviewees said that relationships between the Forest Service and communities had improved as a result of the Plan.

However, the predominant sentiment among agency and community interviewees was that the Plan did not lead to much in the way of collaboration in management activities and did not improve relations between the forest and communities. In fact, owing to budget reductions and staffing cuts, an area of strength—public involvement in recreation—has been in decline. Some interviewees stated that tension and confusion at the agency-to-agency level had increased since the Plan's implementation. Other interviewees expressed the view that the communities and Forest Service had not collaborated much prior to the Plan and noted that little had changed. Still others expressed the belief that the Forest Service still views collaboration as a public involvement process that must be fulfilled as a requirement rather than seeing it as a way to communicate, share ideas, understand how community decisionmaking processes function, and collectively arrived at desired socioeconomic and ecological outcomes.

Additionally, some interviewees viewed the Plan as contributing to the breakdown of relations with communities because it pledged a commitment on the part of the Forest Service to provide a predictable supply of timber harvest yet did not provide adequate mechanisms to ensure that such harvest would occur. In short, some interviewees felt that the partnerships and collaboration have not benefited interviewees who relied on the Mount Hood National Forest for their livelihoods related to forest products. The sentiment among agency employees is that through the hard work of Mount Hood National Forest employees, and independent of the Plan, some repairs to the damaged connections to former timber-based communities have been made and continue to be made.

Several interviewees also raised the concern that the Plan removed the authority of local Forest Service leaders to make and follow through with decisions, thereby limiting potentially successful collaborative outcomes. Interviewees said that unless Forest Service decisionmakers can be held accountable to their decisions, relations between the Forest Service and local communities will not improve.

Protecting Forest Values and Environmental Qualities: Managing for Noncommodity Forest Values

Many of the Plan's standards and guidelines sought to encourage the protection or creation of late-successional forest stand structures and processes. The Plan also went a step further by adopting a "do-no-harm" guiding management philosophy and setting into place a series of provisions, such as survey and manage and Aquatic Conservation Strategy (ACS) requirements, to forestall harm to other potentially threatened or endangered species.

Although few interviewees were satisfied with the way the forest was managed, most believed that the Forest Service was doing the best job it could, given its resources and the political, legal, and other constraints it faced. A minority of respondents—environmental group representatives, people in the timber industry, and individuals with a vested interest in forest management—believed the Forest Service was not managing the forest in ways that met the needs or expectations of the community. Correct or not, people attributed this to the Forest Service's inability or lack of will to implement the Plan.

Opinions and perceptions held by interviewees within the study communities divide roughly along the preservation versus conservation ideologies. Where some interviewees perceive management actions as consistent with their values, others see the same actions as contrary to their values. Resident opinions about forest management varied widely, most divergent were the opinions of people who moved into the area during the 1990s compared to the opinions of interviewees who work or formerly worked in the woods.

A minority of the respondents expressed concern about noncommodity values, with water quality, aquatic habitat, and watershed issues being the major concerns. Watershed groups and soil and conservation districts have been fairly active and progressive in the Upper Hood River Valley and Villages of Mount Hood communities. Their efforts have focused on stream habitat restoration, fencing projects, culvert replacements, education, fish conservation and recovery, and other issues related to watershed management. The Confederated Tribes of the Warm Springs is taking a lead role in some fish recovery efforts in the Upper Hood River Valley area. These groups work with private landowners and solicit input from agency personnel. Efforts to enhance streams with habitat restoration projects were viewed as having a positive impact on water quality and fish populations.

A sizeable number of interviewees who were concerned about forest health were supportive of timber harvest activity and developing infrastructure to support recreation. They were concerned that the Forest Service did not know how to operate at small scales that would allow local operators to participate in fulfilling forest management objectives. Several interviewees noted that recreation development was problematic given the difficulty the forest had with managing the existing levels of recreational use. On the other hand, several interviewees expressed the sentiment that the Forest Service emphasized wildlife and fish

management to the detriment of recreation and timber management. They expressed concern that today's "multiple use" focus does not include recreation and timber. Their concerns often reflected their interest in using the forest for recreation or harvesting products for sale. They felt that the Mount Hood National Forest is no longer meeting community needs or expectations in this regard.

Although many interviewees stated that they did not want to see forest management go back to old practices, they felt that harvesting timber was a tool for keeping forests healthy. They did not feel the Mount Hood National Forest's current practices are consistent with managing for healthy forests. Some people feel that it would be possible to break up the even-age structure of the forest—which they described as neglected forest—and achieve habitat goals that would be consistent with the Plan while at the same time providing local employment and ownership in resource management. Several people talked about the important cultural aspects of lifestyles that involve working with timber resources and described how they still try to make a living working in small-scale forestry, mostly with private landowners. They suggested that the Forest Service should look to small-scale operations and opportunities to manage the forest. Such approaches to forest management would be consistent with their values to make an income in a forest-based industry and contribute to improving the health of the forest.

An equal number of respondents expressed concerns that were generally sympathetic with environmental groups. Environmental group representatives have been disappointed with the implementation of the Plan. In 1995, the salvage logging rider was attached to a budget bill signed by President Clinton. The rider effectively suspended environmental laws and expedited logging and preparation of timber sales on the national forests, including areas that fall under the Plan. Many environmentalists viewed the salvage rider as the Forest Service's attempt to subvert the Plan. Lingering resentment toward the Forest Service and mistrust remain. As a result, many environmental groups continue to pursue stronger forest protection measures. They were glad to see the reduction in timber harvests but remain uncertain about the impacts of the Plan on old-growth habitat and the species therein.

Finally, some business interests and some of the newer residents interviewed place a high value on the aesthetic values the "untouched" forest provides and their ability to recreate in it. These interviewees and the business community that derives income from recreational forest users would like the Mount Hood National Forest to continue managing the forest in a way that maintains its wilderness aesthetic. Furthermore, they see the emergence of recreational development as integral to managing the forest for this value. Several interviewees said the Mount Hood National Forest had done little "in reality" to address recreational uses of the forest, and some believe access to trails and campgrounds has decreased.

Issues and Concerns Relating to Forest Management

As a result of the area's change in population since 1990 and loss of jobs in the timber industry, fewer people living in the study communities rely on the forest for economic or other purposes. Community members, particularly longtime interviewees and business owners expressed disappointment and concern over what they perceived as the decline in forest health and change in access to the plethora of forest resources. Concerns expressed by interviewees differed greatly by community. The differences are particularly evident in comments about recreation and forest health. Forest Service employees and area interviewees identified the following issues and concerns about forest management on the Mount Hood National Forest.

Income Opportunities

A small number of interviewees in the Upper Hood River Valley and the Greater Estacada Area were concerned about their ability to derive income from forest management and from the extraction and use of natural resources. For many, this ability to derive income from the Mount Hood National Forest means opening the forest to logging. Their interest

in logging activity ranged from salvage operations, removing utility wood, sales to support small wood product businesses, or timber sales to meet probable sale quantity levels set in the Plan and designed with local contractors in mind.

Not surprisingly, given the shift in demographics within the communities, a number of interviewees downplayed the importance of forest-based employment. However, interviewees were generally supportive of forest management and the ways it could economically benefit the community. Interviewees in all of the study communities believed that some forest management was necessary and that there should be ways to connect these management activities with community socioeconomic well-being.

Recreation

Concerns about recreation, including management of existing recreation sites and the development of new recreation opportunities were ubiquitous across Mount Hood National Forest communities. Each of the study communities has distinctly different relations with the Mount Hood National Forest, distinctly different histories and economies, and therefore expressed different views and concerns with regard to recreational development and management on the Mount Hood National Forest. In the Greater Estacada Area, recreation and tourism play a very small role in the local economy, and there is little expectation that it will play an important role. However, the Forest Service has increased permits for outfitters to use the Clackamas River for rafting and kayaking that has spurred some small-scale tourism development. For the Villages of Mount Hood, recreation and tourism are an integral and accepted component of the area's culture and economy. To the east, in the Upper Hood River Valley, recreation and tourism has been limited to pass-through traffic that has little impact on the community although some bed-and-breakfasts and shops cater to tourists. However, increasing levels of recreation development on the Mount Hood National Forest and a realignment of recreation business interests have brought more traffic to the community and created the potential for a recreation and tourism component of the small local economy. The proposed expansion of the Cooper Spur ski resort was controversial. Interviewees in all three communities expressed concern about the negative impacts recreation and tourism development will have on forest health. Specific concerns of interviewees in the three communities are outlined below.

Interviewees of the Greater Estacada Area expressed little concern or were ambivalent about recreation management. Local government and a few businesses see recreational uses of the Mount Hood National Forest as an undeveloped and potentially important component of the local economy. Concern was expressed that forest management, harvest activities in particular, must be consistent with recreation development.

Given the increasing prevalence of forest-based recreation in proximity to the Villages of Mount Hood, many business interests see visitors as an important benefit to the local economy and were supportive of the Mount Hood National Forest developing its infrastructure to support recreation and tourism. Business owners and area boosters report there are insufficient trails and campgrounds for drawing people to the Mount Hood National Forest. The business community and interviewees alike were particularly concerned about the use of signage to disperse visitors more effectively over the road network to various destinations, including underused campgrounds. Interviewees who frequently used the forest for recreation observed that day uses of the forest were more common than in the past. Several interviewees said that readily accessible areas were overused and that they would like to see efforts made to disperse people into less commonly used areas to protect the forest.

Upper Hood River Valley interviewees were sharply divided over recreation development. Recreation uses in the area began to grow and diversify in the 1980s as Portland area residents grew increasingly willing to access Mount Hood recreation sites by way of the Columbia Gorge. Mount Hood Meadows ski area now markets itself

by aligning with Hood River business interests. This, in combination with the proposed expansion of the Cooper Spur recreation resort area, continues the trend of increasing traffic through the Upper Hood River Valley. Interviewees are concerned about the economic and environmental effects of tourism. Some people are opposed to the Cooper Spur expansion and expressed concern about the potential impacts on water quality and quantity of Crystal Springs watershed that provides domestic and agricultural water for the valley. Additionally, many interviewees are opposed to a recreation-service-based economy and believe increased visitors and tourism will negatively impact their quality of life as a result of increased congestion and the presence of strangers in the area. Others are supportive of recreation expansion and the potential economic benefits it will bring. The demands on local emergency services have increased owing to increased traffic and recreation-based accidents around the mountain.

Forest Health and Catastrophic Fire

Many interviewees expressed concern about forest health and the risk of catastrophic fire. Some commented specifically about the changes they have seen in stands they were familiar with, whereas others made general observations about the density of growth along common transportation corridors. In all three communities, interviewees expressed fear that it was only a matter of time before a fire occurs, and they are concerned about their property, personal safety, and the effect that a fire would have on their quality of life.

Some interviewees believe that the risk of catastrophic fire is indicative of an unhealthy forest resulting from poor forest management. Moreover, they believe there are opportunities for land management activities that would reduce fire risk and provide jobs and income for local interviewees and benefit the area.

Firewood

Many interviewees commented on the decrease in access to firewood over the past decade. Although fewer people depend on firewood for home heating, many still prefer to use wood heat when possible, and a number of people continue to use wood as a secondary source of heat. There is a lack of understanding among interviewees as to why fallen trees and snags are left in the woods. Interviewees typically believe this is wasteful and contributes to fire hazard.

Access to the Forest

Interviewees had mixed opinions about whether road closures were positive or negative. Some thought road closures were a good thing because they kept people with off-highway vehicles from degrading the forest. Others felt that the forest was big enough to serve multiple motorized and nonmotorized uses, and that access was important for spreading out the use. Long-time residents accustomed to using the Mount Hood National Forest were unhappy about the loss of access to places they previously had frequented on a seasonal or year-round basis.

Water Quality and Aquatic Habitat

Interviewees in the Upper Hood River Valley and Villages of Mount Hood expressed concern about water resources. Many interviewees in both communities rely on water from the Mount Hood National Forest and many, as former Portland area residents, recognize the immense value of water resource for downstream water users.

For the past 20 years, there has been a growing concern about a number of aquatic species listed as threatened and endangered. A number of interviewees, particularly in the Upper Hood River Valley and Villages of Mount Hood, expressed concern about aquatic habitat. There has been a high level of engagement with the Forest Service addressing these issues.

Wildlife

The change in forest management has affected wildlife populations on the Mount Hood National Forest. Some interviewees believe that fewer open stands on the forest, resulting from decreased timber harvests, has led to an increase in game and their predators in the lower elevations of Mount Hood. Interviewees report increased incidents of elk and deer browsing in orchards.

Timber Harvest

A few Upper Hood River Valley interviewees and environmental organization representatives voiced concern about the commercial timber program and any plans to log in areas that qualify as wilderness or that include old-growth stands. Some of these interviewees would like wilderness designation extended to cover all eligible acreage in the Mount Hood National Forest.

Lack of Clarity

A majority of interviewees are unaware of Mount Hood National Forest management objectives. They see the Forest Service as an agency without a clear mandate or direction. They expressed frustration that the Forest Service has not defined what it is and what it does. Furthermore, nearly all interviewees noted the Forest Service's lack of communication, clear or otherwise, with area residents. A few interviewees said that the Mount Hood National Forest has not fully acknowledged that they are managing an urban forest with issues that differ from those encountered when they were managing wilderness areas and timber, and that the agency culture has not shifted to reflect this change. Former timber industry workers, in particular, stated that although the practices of the past may not have been good, doing nothing has more negative impacts than good timber management practices.

Comments from interviewees revealed a common concern about the lack of clarity about the Mount Hood National Forest's recreation policy, and general forest management. Some interviewees expressed concern that the Forest Service was looking to recreation as a substitute for the unmet expectations of the timber program under the Plan. Interviewees were concerned that recreation was being thought of as a convenient alternative in part because it is perceived to be politically feasible. These interviewees were concerned that policy and programmatic emphasis on recreation have emerged without an evaluation of the implication of expanded recreation on communities and the forest resources.

Local Views of the Plan

Interviewees were asked for their views of what was working well and not working well with the Plan. Local views about the Plan fell into two categories, those provided by interviewees with only a vague understanding of the Plan and those provided by interviewees with a direct or long-standing interest in forest resources who held specific views.

Interviewees who were vaguely familiar with the Plan were not clear about the Plan's goals or implications of its implementation. Their responses included believing that the Plan was intended to shut down the woods, to balance harvest activities with forest and species protection, or to protect old-growth forest habitat. Several interviewees were supportive of the Plan, believing that it was designed to allow some cutting and preserve the old-growth timber stands and that it allowed use of the forest while putting more responsibility on the Forest Service for its care.

Individuals in logging-related businesses, environmental organization representatives, or individuals involved in collaborative stewardship activities were familiar with several aspects of the Plan in some detail. Generally, they were supportive of some elements of the Plan and critical of others. For individuals in the timber industries, the common concern was that the Plan was implemented too strictly and resulted in a lack of sales or profitable sales. Rather than abiding by provisions of the Plan, they believed that the Mount Hood National Forest should abide by "common sense" to achieve Plan goals. Several contractors believed that most high-quality contractors can log, even in sensitive areas, without negative impacts to the environment.

A few newer residents questioned whether the goals of the Plan were being met and the way it was implemented. Their concerns centered on how sale quantity goals were met—number of acres treated and board feet logged. These concerns resonated with environment groups' comments about what aspects of the Plan were working.

One community resident and a number of Portland area environmental group representatives were supportive of elements of the Plan. They commonly said that the reserve

system, ACS, the focus on key watersheds, and survey and inventory work were all steps "in a good direction." Specifically, they were encouraged by the "ground level" survey work that increased the understanding of the forest ecosystems. However, many felt the efforts did not go far enough to achieve preservation or forest restoration goals, including comprehensive protection of all eligible wilderness areas and all old-growth habitats. Furthermore, environmental organization representatives were dubious that survey and manage or other procedural requirements of the Plan were adequately adhered to. The result has been the continued use of lawsuits, direct action, and efforts to increase acreage under Wilderness Act protections.

A few interviewees viewed the Plan as a disincentive for any developments on the Mount Hood National Forest, from potentially insignificant ground-disturbing nontimber forest products harvesting activities to more major recreation developments. They see the Plan, as it has been implemented, as a policy promoting no timber cutting on national forests. They point to the lack of sales and their general lack of affiliation with the Mount Hood National Forest as proof. Pro-recreation expansion stakeholders, specifically the corporate proprietors of the ski resorts, have a series of complaints about how the Plan has affected their ability to offer and expand recreation services to the public. Other interviewees point to road closures, recreation site deterioration, and questionable forest management practices, saying the Plan is responsible for these conditions.

Administration

Owing to administrative and legal obstacles, the timber supply from the Mount Hood National Forest was erratic following the implementation of the Plan, and eventually was insufficient to support the timber industry in the area. In addition, people who wanted to stay in the timber industries, either as small mill operators, or logging or restoration contractors, have had a hard time of that because of the administrative obstacles to small timber sales and restoration contracts. The small mill operators rely on private and county lands for their logs, but the future of these supplies are uncertain. Corporate and recreation permit holders interested in expansion of permitted uses of the forest also say that the Plan has been extremely costly, inefficient, and inflexible, and has not allowed them to meet growing societal demands for recreational opportunities that they view as their corporate objectives. They believe that the Plan regulations constitute an economic constraint and at times an insurmountable obstacle to development. Additionally, procedural requirements, such as survey and manage, are viewed as extremely costly, inefficient, and unproductive.

Cost

Several interviewees noted the cost-prohibitive aspects of the Plan. One of the only logging contractors remaining in the study communities said that regulations affected the duration of the operating season, the type of equipment used, how the sites were accessed, etc., and noted that these restrictions made it very difficult to execute timber sales. Another interviewee, representing the ski resort industry, reported that the cost involved in master planning with the Plan is almost prohibitive.

Lawsuit-Ability/Applying Pressure on the Agency

Community members who are opposed to recreation expansion would like to see the Plan strictly enforced on ski permit areas, particularly in wetland and other riparian areas. These interviewees are concerned about resource protection and quality-of-life issues. Several environmental organizations have used Plan regulations, namely survey and manage, to challenge the Mount Hood National Forest on a number of developments. Many interviewees believe that several high-profile protests and lawsuits have diminished the Mount Hood National Forest's ability and interest to manage the forest for any but the most broadly acceptable purposes.

Land Use Allocations

One ski industry representative felt that land use allocations and procedural requirements were inconsistent. He stated that with the Plan land allocations and procedures it is difficult for the ski resort to implement desired future

condition on preexisting A-11 recreation areas. He noted also that the late-successional reserve boundaries may not be appropriate and is disappointed that the Mount Hood National Forest is reluctant to consider amending those boundaries. Several contractors questioned the application of riparian reserve regulations, saying that careful and "common-sense" logging practices don't conflict with the land use allocation goals. A Forest Service employee echoed this comment, saying that the Plan reduces access to the Mount Hood National Forest for a range of uses and, in many cases, regulations were no better than "common sense" logging practices in terms of species and habitat protection.

Taken as a whole, interviewees view contemporary forest management procedures as a key cause of the lack of predictability of supply of timber and nontimber resources from the Mount Hood National Forest and for the deterioration of the forest's health. Interviewees question the sustainability of forest management practices and are uncertain of the extent to which the Plan is responsible.

Chapter 5: Conclusions–Meeting Northwest Forest Plan Goals and Expectations

Monitoring Questions and Socioeconomic Goals: An Evaluation

In this final section of the report, we summarize the perspectives of community interviewees and Mount Hood National Forest employees regarding whether or not the Plan's six socioeconomic goals have been met. This section incorporates corporate and census data, including resource outputs presented in chapter 2 and community socioeconomic data in chapter 3 of this report.

Goal 1: Predictable and Sustainable Levels of Timber and Nontimber Resources Are Available and Are Being Produced

The Mount Hood National Forest seldom met the Northwest Forest Plan's (the Plan) goal of providing predictable and sustainable supplies of products and opportunities. For example, the Mount Hood National Forest fell far short of offering the estimated timber probable sale quantity (PSQ) of 64 million board feet (MMBF). Moreover, the amounts of timber offered for sale varied from year to year, ranging from a high of 75 MMBF in 1997 to a low of 1.4 MMBF in 2000. Agency interviewees cited a number of reasons for the lack of sales, including survey and manage and Aquatic Conservation Strategy requirements, legal challenges, and reduced budgets. Opinions differed as to whether the current amounts of timber being offered for sale on the Mount Hood National Forest are sustainable over the long term. Many interviewees believed that a PSQ of 64 MMBF is sustainable. However, the self-described environmentalists interviewed expressed concern that the 64 MMBF estimate was too high to be sustainable.

The degree to which the Mount Hood National Forest produced predictable and sustainable supplies of nontimber forest products also varied. The amount of firewood available, for example, decreased substantially as the area open to timber harvesting declined. The supply of products, such as mushrooms, boughs, poles and posts, and cones, whose harvest was less closely linked to timber sales activities, however, does not appear to have been greatly affected by the Plan. Grazing and mineral activities were also not significantly affected by the Plan.

Opinions about the sustainability and predictability of the supply of recreation opportunities differed greatly. The overall impression is that the Mount Hood National Forest has been providing a predictable supply of recreation opportunities. There have been increases in all recreation indicators except miles of system roads. It is expected that this indicator will continue to decline. However, many interviewees stated that the quality of recreational opportunities had diminished, with more emphasis placed on day-to-day operations and day-use facilities and less on overnight facilities and long-term infrastructural developments. Additionally, a small number of interviewees, generally people who formerly worked in the timber industry and who used the woods for recreation, reported that the places they were accustomed to visiting were no longer accessible or access was restricted to specific times of the year.

A few interviewees commented that the Plan did not offer specific policy guidelines on recreation and noted that the Plan's lack of explicit consideration of recreation has made it difficult to pursue development of recreational resources. At the same time, adherence to land use allocations and the administrative requirements in the Plan have made it difficult to meet the increased demand for recreational facilities.

Goal 2: Help Maintain the Stability of Local and Regional Economies and Contribute to Socioeconomic Well-Being in Local Communities on a Predictable and Long-Term Basis

The evidence indicates that the Plan's second goal also was not met on the Mount Hood National Forest. As noted in the discussion under goal 1, efforts to support a viable timber sector in local economies by providing a predictable supply of timber from the Mount Hood National Forest have not been successful. According to local logging contactors, mill

owners, and timberland managers, the lack of predictable supply of timber sales forced many of the small logging companies out of business. The uncertainty that resulted from the lack of predictability of sales combined with increased competition for fewer sales pushed several contractors out of the business. For mills that relied on timber from the forest, the lack of predictable supply was cited as the last straw, albeit one factor among many, pushing them out of business.

Perhaps more significant, however, has been the decline in contracting and direct employment opportunities on the Mount Hood National Forest. As a result of budget cuts and changes in forest management, Mount Hood National Forest procurements declined 15 percent, from a total of $19.7 million in 1990–92, to $16.8 million in 2000–2002. Contract opportunities changed as the Mount Hood National Forest shifted from issuing contracts associated with intensive forest management activities to contracts associated with ecosystem management. Of the 178 contractors working for the Mount Hood National Forest in 1990–92, only 10 remain a decade later. Ninety-eight new contractors are doing intensive forest management associated with ecosystem management, and these contractors tend to be based on the Interstate-5 corridor rather than in communities adjacent to the forest.

Mount Hood National Forest's budget cuts coincided with large staff cutbacks and contributed to the economic instability in the study communities. The number of employees on the Mount Hood National Forest dropped roughly 60 percent, from over 700 in 1991, to about 240, in 2000. Staff cutbacks reduced employment opportunities and further reduced the flow of federal dollars to the study communities.

All three communities experienced loss of employment in timber, manufacturing, and transportation industries between 1990 and 2000. In addition, changes in levels of education attainment, income levels, and employment in the Villages of Mount Hood and the Greater Estacada Area reportedly indicate the loss of Forest Service personnel. Aside from the loss of jobs in timber, interviewees did not make specific mention of the effect of the decline of Forest Service jobs in the community. According to interviewees, loss of local employment opportunities forced many residents to seek work elsewhere. A number of residents now commute to work. On the other hand, many people left the communities, providing affordable housing for inmigrants who continue to work elsewhere. Although none of the study communities is strictly a bedroom community, the loss of timber-based employment has accelerated the transition of all three study communities toward bedroom communities. As a result, interviewees believe retail businesses that serve area residents have declined while financial and real estate businesses have expanded.

To a great extent, the Forest Service's role in these communities has stabilized, but community expectations do not seem in alignment with this role—owing in part to the Forest Service not clearly defining and communicating its agenda. To oversimplify, residents seem to desire far more from the forest than they receive in terms of economic benefits.

Goal 3: Minimize Adverse Impacts on Jobs and Assist With Long-Term Economic Development and Diversification in the Area

Views were mixed as to whether the Plan's third goal was met on the Mount Hood National Forest. Although the communities and counties around the Mount Hood National Forest received approximately $47.7 million in grants and loans associated with the Northwest Economic Adjustment Initiative (NEAI), including funding for the Jobs-in-the-Woods program, relatively little of that money appears to have reached the three study communities. Resource Advisory Committees (RACs), formed as a result of the Secure Rural Schools and Community Self-Determination Act, now convene to decide how to allocate federal funds for forest-related projects, such as stream restoration projects.

Few interviewees believe the Forest Service was able to minimize the adverse impact on jobs that resulted from the reduction in logging activity on the Mount Hood National Forest. Some interviewees said the Forest Service was

"disassociated" from the social and economic goals and offered little support to former timber-based communities as the communities faced transitions associated with declining timber harvests. A few interviewees had positive things to say about the infrastructure projects funded under the Secure Rural Schools Act.

Besides providing funds to communities, Forest Service employees also participated in a number of community development efforts. Several people who were active in community development groups said these Forest Service efforts did little to offset the effects of the Plan.

Several interviewees noted that economic diversification had occurred in some communities around the Mount Hood National Forest, but they said it was unlikely that the Plan or the Forest's activities were the reason. Frequently, they said that the Forest had not assisted with the long-term economic development and diversification of the area. A number of community and agency interviewees questioned the Forest Service's power to address job creation, economic development, or diversification of the area's economy. A few interviewees questioned the appropriateness of the goal, saying that it may not be the role of the Forest Service and forest management to assist with economic development.

A number of agency staff saw the Rural Community Assistance Program as a means for maintaining, reestablishing, or improving the forest's relationship with local communities. They criticized the NEAI for not giving the Mount Hood National Forest a lead role in developing and implementing the initiative's economic assistance measures. As a result, they feel that the Forest Service lost out on opportunities to build bridges and connection to local communities that were impacted by the changes in management practices on the Mount Hood National Forest.

Goal 4: Protect Nontimber Values and Environmental Qualities Associated With the Forest

Several community interviewees, particularly self-described environmentalists and recent inmigrants, said the forest has been successful at protecting nontimber values and environmental qualities of the Mount Hood National Forest. A number of Forest Service employees believe that, in spite of administrative difficulties, they have met short-term goals for noncommodity protection. However, a number of interviewees thought the Forest Service had gone too far in protecting these values because it had virtually shut down the forest to timber harvest activities and they did not believe the reduction in harvest activities was successful in protecting noncommodity values.

A number of community and agency interviewees were concerned that, long term, the health of the forest was at risk as a result of the Plan's short-term procedural requirements and lack of funds for implementing management activities. Community interviewees were particularly concerned about the number of stands that are in need of thinning for reasons of forest health or to reduce fire hazard. Thus, although the forest is meeting this goal better than other goals of the Plan, this may be a short-term achievement.

Although many interviewees believe the success in protecting noncommodity values was due to the sheer stagnation of the process, others saw it as the result of a shift in management approach. A small number of interviewees believe the Forest Service has moved from a fragmented, action-oriented management approach to a watershed management approach that considers the broader needs of the ecosystem. A number of interviewees pointed to fish habitat restoration efforts as examples of successful ecosystem management.

A small number of interviewees, particularly representatives of environmental organizations, were concerned that the Mount Hood National Forest continues to offer old-growth timber for sale and prepares sales in areas potentially eligible for wilderness designation. They would like to see all old growth and roadless areas protected from harvest activities.

Goal 5: Improve Relations Between Federal Land Management Agencies and Local Communities and Promote Collaborative Forest Management and Joint Stewardship Activities

Interviewees had varied opinions about the Forest Service improving its relations with the local communities. Forest

officials note that at the onset of the Plan, the multiple-agency leadership of the Forest Provincial Advisory Committee immediately committed to developing seamless service delivery related to NEAI and other activities. Multiple-agency leadership led to unprecedented levels of coordination across agencies. In general, community interviewees who were engaged in soil conservation and watershed restoration noted increased interaction and interagency coordination. However, former timber industry workers noted less collaboration and a continued deterioration of relations with the Forest Service over the past decade, beginning with the spotted owl (*Strix occidentalis caurina*) injunction. This laid important groundwork for recent collaborations that have taken place across ownerships under the Wyden amendment. These efforts often involve multiple agencies or community groups.

On the other hand, most interviewees perceived that the Forest Service made little or no progress toward promoting collaborative stewardship activities. A few Forest Service and community interviewees believe the Forest Service has little interest in collaborative forest management and, as a result, it did not happen. This may contribute to the preponderance of lawsuits filed to change management activities on the forest.

A few interviewees, primarily those involved with water quality and fish habitat projects, stated that the Plan's emphasis on collaboration had improved the Mount Hood National Forest's links to local communities. They noted that the Mount Hood National Forest had made a positive contribution to watershed and fish habitat improvement in the area through the sharing of knowledge and expertise with groups and neighboring landowners.

A few Forest Service interviewees believe the Plan contributed to the breakdown of relations with forest communities. The failure to achieve PSQ estimates accelerated this breakdown. What good relations there are, interviewees attribute to the hard work of individuals within the agency to overcome the damage created by the Plan.

A few people noted that collaboration no longer took place between traditional stakeholders, such as logging contractors and the Forest Service, but now occurred primarily between "public interest" stakeholders and the Forest Service. For example, one innovative Mount Hood National Forest effort entails reaching out and involving recreation stakeholders in the planning process. Several interviewees felt the community residents have been largely left out of the process, with the exception of a few business interests. Most community interviewees noted the increased presence of Mount Hood National Forest leaders at local community development meetings but remarked on the lack of results.

Overall Goal: Balance the Need for Forest Protection With the Need to Provide a Steady and Sustainable Supply of Timber and Nontimber Resources to Benefit Rural Communities and Economies

The case studies indicate that the Mount Hood National Forest has not yet met the Plan's overall socioeconomic goal of balancing forest protection and forest production objectives. Although many interviewees believe that the Mount Hood National Forest has done a good job of protecting resources in the near term, few believe the Mount Hood National Forest has overcome the obstacles to producing predictable and sustainable supplies of timber. Local logging contractors have not logged on the Mount Hood National Forest for nearly a decade, and local mills have not been able to plan for a supply of timber from the Mount Hood National Forest. Business owners who derive income from tourism do not believe the Forest Service has developed the infrastructure to support recreational use to support a sustainable supply of recreational opportunities for visitors. Some of the challenges that have hindered the Mount Hood National Forest's ability to balance forest protection and production goals include:

- Costs in terms of staff time and funding to comply with Plan procedural requirements.

- Declining budgets and staffing levels.
- Continuous litigation and protests of timber sales.
- Inability to work with and assist communities more directly and in a timely manner.
- Learning curve in acquiring the skills to develop partnerships and work collaboratively.
- Lack of innovative leadership in areas such as recreational infrastructure development.

Importantly, many interviewees attribute the inability of Mount Hood National Forest to balance protection and production to the forest's lack of authority over key management decisions. This includes decisionmaking on the district level and forestwide, as affected by budgets set in Washington, DC. They often cite ongoing litigation over many timber sales rather than shortcomings on the part of forest employees or local leadership.

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Metric Equivalents

When you know:	Multiply by:	To get:
Feet	0.305	Meters
Miles	1.609	Kilometers
Acres	.405	Hectares
Square miles	2.59	Square kilometers
Board feet, log scale	.0045	Million cubic meters

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Appendix: Mount Hood National Forest and Community Case Studies

Mount Hood National Forest

Respondent's position
Forest recreation, planning, public affairs staff officer
Forest planner, forest hydrologist
Forest geologist
Range program manager
Forest Youth Conservation Corps and hosted and senior volunteer coordinator
Forest volunteer program coordinator
Fire and aviation management program manager
Forest silviculturist
Forest supervisor
Zigzag District Ranger
Forest natural resources staff officer
Forest special forest products coordinator
Public affairs officer, rural community assistance coordinator
Forest engineer
Vegetation management specialist
Five district and forest recreation program managers (group interview)
Clackamas River District Ranger

Upper Hood River Valley

Respondent's position	Additional stakeholder roles	Upper Hood River Valley resident
Former logging contractor/wood products industry employee (3)		X
Long-time orchardist (2)		X
Volunteer fire department chief		X
Environmental activist		X
Retired Forest Service	Hobby orchardist	X
Retired Forest Service		X
Orchardist	Owner private timber land	X
County commissioner	Family long-time residents	X
Local store owner	Family long time residents	X
Small mill operator	Family long-time residents	X
Recreation industry representative		X
Program manager migrant worker social services	Family long-term migrant workers	X
Regional Soil and Watershed Association	Watershed association representative	
Confederated Tribes of Warm Springs, aquatic restoration program, office in case-study site		
Regional recreation industry representative		

Villages of Mount Hood

Respondent's position	Additional stakeholder roles	Villages of Mount Hood resident
Tourism and Recreation industry rep		X
Tourism and Recreation industry rep		
Developer	Community development activist	X
Real estate services		X
Business person	Chamber of commerce	X
Watershed activists (2)		X
Long-time resident	Community development activist	X
Retiree	Service organization rep	X
News media rep		X
Local business owner		X
Logging contractor		X
Pastor		X
Firefighter		X
Logging contractor		
County Economic Development official		
Environmental interest group member (2)		
Industrial timberland manager		
Public school teachers (3)		X
Community development activist	Seasonal resident	X
Community development activist		X

Greater Estacada Area

Respondent's position	Additional stakeholder roles	Estacada area resident
Former logging contractors (3)		X
Forest service employees (2)	Community development activists	X
Forest service employees (2)		X
Logging supply store owner		X
Local businessman	Town councilman	X
Logging contractor		
Firefighter		X
Local employer/business owner		X
Community activist	Recent inmigrant	X
City manager		X
Local employer/business		X
Wilderness outfitter		X
County economic development official		
Environmental interest group member (2)		
Wood products company employees (3)		
Former business owner	Chamber of Commerce	
Pastor		X
Social service provider		X
School official		X
Industrial timberland manager		

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