NORTHWEST FOREST PLAN
THE FIRST 10 YEARS (1994–2003)

Socioeconomic Monitoring Results
Volume III: Rural Communities and Economies

Susan Charnley, Ellen M. Donoghue, Claudia Stuart, Candace Dillingham, Lita P. Buttolph, William Kay, Rebecca J. McLain, Cassandra Moseley, Richard H. Phillips, and Lisa Tobe

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Northwest Forest Plan—The First 10 Years (1994–2003): Socioeconomic Monitoring Results

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Abstract

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This volume focuses on the Northwest Forest Plan (the Plan) record of decision (ROD) evaluation question, Are local communities and economies experiencing positive or negative changes that may be associated with federal forest management? It also assesses how well two of the Plan's socioeconomic goals were met during the first decade: (1) to maintain the stability of local and regional economies on a predictable, long-term basis; and, (2) where timber sales cannot proceed, to assist with long-term economic development and diversification to minimize adverse effects associated with job loss. The monitoring team examined trends in socioeconomic benefits from federal forest lands between the early 1990s and the early 2000s, and the ways in which the Plan may have contributed to these trends. The team also examined socioeconomic mitigation measures designed to offset some of the adverse effects of cutbacks in federal timber harvest, how effective they were, and why they sometimes were not. In addition, we examined social and economic change in Plan-area communities at the regional scale and in a sample of 12 forest-based communities to identify links between Plan implementation, the mitigation measures, and community change.

Some key findings from this volume are:

- In the 72 counties within the Plan area, about one-fifth of the population (2 million people) lives within 5 miles of a federal forest. Based on a socioeconomic well-being score developed from U.S. Census indicators, socioeconomic well-being between 1990 and 2000 dropped for about 40 percent of the communities within 5 miles of a forest, increased for 37 percent, and stayed about the same for the remaining 23 percent. The extent to which the Northwest Forest Plan contributed to these changes is difficult to quantify, because other variables were also at play. Plan effects on communities varied, depending on the strength of the timber sector there in 1990, the extent to which timber from federal forest lands supported that sector, and the number of agency employees resident there.
- Thirty thousand direct timber industry jobs were lost between 1990 and 2000 in the Plan area. About 19,000 of these jobs were lost between 1990 and 1994, and the main cause was reduced timber supplies across ownerships. Roughly 11,400 of the lost jobs can be attributed to cutbacks in federal harvests triggered by the listing of the Northern Spotted Owl and subsequent injunctions on timber sales. About 11,000 of the 30,000 timber industry jobs lost during the 1990s were lost in the last half of the decade. About 400 of the 11,000 jobs lost since 1994 can be attributed to a net

reduction in federal timber harvesting. The remaining 10,600 job losses occurred during a period of increased log availability to local mills, and are the result of less efficient mills closing, and mills continuing to invest in labor-saving technologies.

- Forest Service field units in the Plan area lost over one-third of their budgets and their workforce over the decade, and about one-quarter of the field offices closed or consolidated. In contrast, the BLM field units in the Plan area did not experience similar declines.
- Forest Service spending on contracts for ecosystem management work, which can create local jobs, dropped nearly 70 percent. BLM contract spending for ecosystem management work held steady.
- The Northwest Economic Adjustment Initiative was largely unsuccessful in creating sustainable, forest-related local jobs comparable to the number and quality of those lost.
- Payments-to-counties legislation, adopted to mitigate the decline in timber receipts to county governments, was largely successful.
- Social and economic ties between communities and forests changed during the decade as timber workers and agency employees moved out, and new residents attracted to the amenity values associated with federal forests moved in. Communities are adapting to change in many ways, including focusing on agriculture, investing in recreation and tourism, using nearby major transportation corridors to attract business and to commute where possible, expanding as regional centers, and depending on the growth of tribal business, administration, and services.
- Many community members interviewed for this study hope there will be future opportunities to link the biophysical and socioeconomic goals of the Plan by creating local jobs associated with maintaining and restoring forest ecosystems.

Preface

This report is one of a set of reports produced on this 10-year anniversary of the Northwest Forest Plan (the Plan). The collection of reports attempts to answer questions about the effectiveness of the Plan based on new monitoring and research results. The set includes a series of status and trends reports, a synthesis of all regional monitoring and research results, a report on interagency information management, and a summary report.

The status and trends reports focus on establishing baselines of information from 1994, when the Plan was approved, and reporting change over the 10-year period. The status and trends series includes reports on late-successional and old-growth forests, northern spotted owl population and habitat, marbled murrelet population and habitat, watershed condition, government-to-government tribal relationships, socioeconomic conditions, and monitoring of project implementation under Plan standards and guidelines.

The synthesis report addresses questions about the effectiveness of the Plan by using the status and trends results and new research. It focuses on the validity of the Plan assumptions, differences between expectations and what actually happened, the certainty of these findings, and finally, considerations for the future. The synthesis report is organized in two parts: Part I—introduction, context, synthesis, and summary—and Part II—socioeconomic implications, older forests, species conservation, the aquatic conservation strategy, and adaptive management and monitoring.

The report on interagency information management identifies issues and recommends solutions for resolving data and mapping problems encountered during the preparation of the set of monitoring reports. Information issues inevitably surface during analyses that require data from multiple agencies covering large geographic areas. The goal of that report is to improve the integration and acquisition of interagency data for the next comprehensive report.

The socioeconomic status and trends report is published in six volumes. Volume I of the report contains key findings. Volume II addresses the evaluation question, Are predictable levels of timber and nontimber resources available and being produced? The focus of Volume III (this volume) is the evaluation question, Are local communities and economies experiencing positive or negative changes that may be associated with federal forest management? Volume IV assesses the Plan goal of promoting agency-citizen collaboration in forest management. Volume V reports on public values regarding federal forest management in the Pacific Northwest. Volume VI provides a history of the Northwest Forest Plan socioeconomic monitoring program, and a discussion of potential directions for the program.

Summary

The Volume III monitoring questions, indicators monitored, Northwest Forest Plan expectations, and monitoring results are summarized in the tables below, by chapter.

Chapter 2: Socioeconomic Conditions and Trends for Communities

Monitoring question	Indicators monitored
How did social and economic conditions change in Plan-area communities between 1990 and 2000?	• Total population • Population change • Population density • Age • Race • School enrollment • Educational attainment • Employment by industry • Median household income • Income distribution • Percentage of unemployment • Percentage of poverty • Socioeconomic well-being[1]

Plan expectations—

Not all communities would be affected the same way or to the same extent by the Plan. Some communities would experience severe adverse effects; some would be relatively unaffected; others could benefit. Rural and timber-dependent communities would experience the greatest social and economic effects.

Monitoring results—

We analyzed 12 social and economic indicators from the U.S. Census for the years 1990 and 2000 and also used U.S. census data to develop a community socioeconomic well-being measure that would help us evaluate change in community socioeconomic well-being over time.

Our analysis of the census data showed that communities in the Plan area are changing. The population is growing, educational attainment and household income are increasing, and poverty is decreasing. At the same time, the manufacturing sector of the economy is declining in many communities. Socioeconomic well-being increased for more than a third of the communities in the region, and decreased for about the same number between 1990 and 2000.

Almost 5 million people lived in communities in the Plan area in 2000, and more than 2 million lived within 5 miles of federal forest land. Using a socioeconomic well-being index we developed, we found that 40 percent of the communities within 5 miles of federal forest land decreased in socioeconomic well-being between 1990 and 2000, compared

[1] Socioeconomic well-being is composed of six indicators: diversity of employment by industry, percentage of population with bachelor's degree or higher, percentage of unemployment, percentage of poverty, household income inequality, and average travel time to work.

with a 33 percent decrease for communities farther than 5 miles from federal forests. Generally, Plan-area communities with lower socioeconomic well-being tended to be those within 5 miles, comprising 71 percent of all communities that scored low or very low in socioeconomic well-being in 2000. Forty-three percent of the communities that received high or very high scores, however, were also within 5 miles of federal forest land. Although some of these communities had relatively high socioeconomic well-being, income inequality has also increased there. Drivers of socioeconomic change, such as increasing income inequality, migration, shifts in dominant industry sectors, and aging populations, affect community socioeconomic well-being.

Chapter 3: Jobs and Income

Monitoring question	Indicators monitored
How did levels of federal timber and nontimber resource outputs, and recreation opportunities, affect jobs and income in the Plan area?	• Primary solid wood products employment • Primary pulp and paper processing employment • Income from primary solid wood products manufacturing • Income from primary pulp and paper manufacturing • Timber harvest by ownership • Employment in forestry products • Employment in range-fed cattle • Employment in commercial fishing • Employment in agriculture, forestry, and fishing services • Employment in minerals mining and processing • Jobs and income from recreation

Plan expectations—

Predictable levels of resource outputs and recreation opportunities from Forest Service (FS) and Bureau of Land Management (BLM) lands would provide predictable levels of employment. The permanent reduction in timber supply would cause an initial loss of about 25,000 direct jobs in the timber industry compared to 1980s levels. After adjusting to this change, Plan implementation would provide a stable flow of timber, supporting predictable rates of timber industry employment. There were no expectations for jobs and income associated with nontimber resources or recreation.

Monitoring results—

Over the period 1990 to 2000, primary-wood-products employment in the Plan area decreased by 30,000 jobs. This loss includes 5,000 jobs lost owing to lower levels of FS and BLM timber supply than originally projected. About 19,000 of these 30,000 jobs were lost between 1990 and 1994, and the main cause was reduced timber supplies across ownerships. Roughly 11,400 of the lost jobs can be attributed to cutbacks in federal harvests triggered by the listing of the northern spotted owl and subsequent injunctions on timber sales. About 11,000 of the 30,000 jobs were lost after 1994. About 400 of the 11,000 jobs lost since 1994 can be attributed to a net reduction in timber harvesting on federal lands.

The remaining 10,600 job losses occurred during a period of increased log supply, and are the result of less efficient mills closing and mills continuing to invest in labor-saving technologies. This analysis found the original Forest Ecosystem Management Assessment Team (FEMAT) estimates of employment loss to be reasonably accurate.

The contribution of federal timber to the total timber supply dropped in the Plan area from about 25 percent in 1990 to 10 percent in 1995 to less than 5 percent by 2000.

The expectation that the Plan would provide predictable levels of resource outputs and recreation opportunities, which would in turn provide predictable levels of employment, was not achieved with respect to timber supply. The timber projection for FS and BLM lands in the Plan area were not realized and there was a lot of variation across the years since the Plan was implemented. However, increased harvests from other ownerships and the redirection of logs from the export market to local processing industries have mitigated some of these impacts. The Plan's effect on jobs and income associated with nontimber resources and recreation opportunities was either minimal or not readily discernable.

Chapter 4: Agency Jobs, Unit Reorganizations, and Budgets

Monitoring questions	Indicators monitored
(1) How has the number and type of FS and BLM jobs changed on Plan-area forest units since the Plan was adopted?	• Number of permanent and other (part-time, temporary) FS and BLM full-time-equivalent (FTE) positions
(2) How did the number and geographic distribution of agency offices containing unit-level decisionmakers change between 1990 and 2004?	• Number of agency offices containing line officers (agency decisionmakers)
(3) How did total budget allocations to Plan units change during the Plan period?	• Budget allocations to Plan-area forests

Plan expectations—

(1) Communities in the Plan area could lose up to 2,000 Forest Service jobs. No estimates of job loss were made for the BLM.

(2) There were no expectations for Plan effects on the number and distribution of agency offices.

(3) The budget process was expected to change to facilitate integrated resource management.

Monitoring results—

The five western Oregon BLM districts lost 166 FTEs between 1993 and 2002, or 13 percent of their workforce. No BLM district or resource area offices closed during this period, however, providing a continued presence of agency decisionmakers in local communities. National forests in the Plan area lost 3,066 FTEs between 1993 and 2002, representing a 36-percent decline in the workforce. This loss was more than expected, and it led to a consolidation of field offices. The number of FS offices with forest supervisors declined by two, and the number of offices with district rangers dropped by 20 during the period,

representing a 23-percent reduction in the number of communities housing FS offices with a line officer. Some of these offices closed completely; others persisted, but with greatly reduced staffing. The FS job loss was most severe among units in Oregon and Washington. The loss of agency jobs was tied to declines in agency budgets associated with reduced timber harvest under the Plan.

Between 1993 and 2003, western Oregon BLM unit total budgets rose by 22 percent. In contrast, Plan-area FS unit budgets declined by 35 percent. These trends can be compared to national-scale trends in agency budget appropriations. Between 1993 and 2003, total FS agency appropriations grew by 41 percent, and total BLM agency appropriations grew by 79 percent. The decline in FS budgets between 1993 and 2003 can largely be attributed to the decline in timber receipts generated during the period. Although BLM timber sales also decreased during the decade, BLM funding was not as heavily dependent on trust and permanent operating accounts derived from timber receipts.

Chapter 5: Procurement Contracting

Monitoring questions	Indicators monitored
(1) How much and what kind of ecosystem management work did the FS and BLM contract between 1990 and 2002?	• Total procurement spending • Number and value of contracts • Procurement spending by work type
(2) Who received economic benefits from FS and BLM contracting?	• Location of contractors • Contract awards to rural communities and affected counties

Plan expectations—

Work in the forestry services sector would decline. Work in ecosystem restoration, surveys, assessments, and inventories would increase, creating about 7,000 jobs per year during the first 3 years of the Plan. Jobs in ecosystem restoration would help offset job loss in the timber sector.

Monitoring results—

The expectation that contract work in ecosystem restoration would increase, helping to offset job loss in both the forestry services and timber sectors, was not met. Although a proportional shift in work types turned away from labor-intensive contracting associated with intensive timber management and toward technical and equipment-intensive work associated with ecosystem restoration, this shift was in the context of a general decline in contract spending. This decline can be attributed to a reduction in FS procurement contracting. The BLM contract spending remained fairly constant between the early 1990s and the early 2000s, averaging just under $20 million per year. The FS spending declined throughout the period, dropping from $103 million in 1991 to $33 million in 2002.

We attribute these differences in agency contract spending primarily to the differences in agency budget trends during this period.

Chapter 6: Community Economic Assistance

Monitoring questions	Indicators monitored
How did agencies assist with long-term economic development and diversification in rural communities affected by cutbacks in timber harvest on federal forest lands and what were the outcomes?	• BLM Jobs in the Woods • FS Rural Community Assistance • FS Old-Growth Diversification Fund

Plan expectations—

The agencies expected the Northwest Economic Adjustment Initiative to accomplish five specific objectives:

(1) Provide immediate relief for distressed timber communities.

(2) Create an environment for long-term economic development consistent with and respectful of the character of communities and their natural resources.

(3) Develop new mechanisms for delivering assistance.

(4) Emphasize equal partnership with the states and the critical role of local governments in economic development.

(5) Emphasize the use of performance-based standards for funding (outcomes based on creating new opportunities and sustainable jobs) over traditional standards for funding, which were based on programmatic eligibility.

Monitoring results—

Many people view the short-term mitigations of the Northwest Economic Adjustment Initiative programs as too little, too late. Timber industry restructuring and timber supply changes were already going on, to a large degree, before the initiative dollars became available in 1994. The initiative did not deliver on agency and public expectations to provide immediate help to displaced timber workers and their families, and many believe that the dollars available were out of proportion to the magnitude of the effects.

Some people argue that it is too soon to assess the success of the initiative's long-term economic diversification projects. The Old-Growth Diversification Fund, a revolving loan fund providing grants and loans to small businesses to promote expansion and diversification, still provides a long-term sustainable source of capital for resource-related businesses, and it is considered highly successful. Community-based planning was a focus of the Rural Community Assistance program. Projects to improve community capacity—such as leadership development, community-based planning, and technical assistance to help communities write grants—were aimed at helping communities help themselves. In reviews of the initiative, these "soft infrastructure" projects were considered vital to the success of initiative projects. The program also supported economic diversification, funding projects such as market and feasibility studies and business plans; whether these projects were generally successful is debatable. The initiative also helped communities and businesses by funding hard infrastructure development projects (such as business parks and water and sewer systems). Although many communities have improved their infrastructure and are better poised for economic development, these opportunities had yet to materialize in most of the communities we studied.

The BLM Jobs-in-the-Woods program met with such success that it persisted as an annual budget appropriation. Despite the BLM's successes, to many, Jobs-in-the-Woods has been the greatest disappointment of all of the initiative's components because public expectations for the quality and number of jobs created to offset job losses in the timber industry were never realized.

Another objective of the initiative was to design new ways for federal agencies to conduct business in collaboration with nonfederal and community partners. Assessments of the innovative aspects of these programs in promoting collaboration between agencies and partners to deliver assistance view them as highly successful.

Chapter 7: Payments to States

Monitoring question	Indicators monitored
Did payments to states legislation stabilize payments to county governments and compensate for payments traditionally tied to timber receipts?	• Payments to counties without legislative mitigations • Payments to counties with legislative mitigations • Payments in lieu of taxes

Plan expectations—

Payments to states mitigation measures were expected to offset the effects of reduced federal timber-harvest receipts on county governments through a transition period.

Monitoring results—

The initial payments-to-counties legislation has generally mitigated the effects of declining timber receipts for the 48 counties covered by the legislation. The counties in other parts of the Plan area (in eastern Washington, Oregon, and other parts of California) did not fare as well until the Secure Rural Schools Act extended these payments to all of the eligible counties in the region and across the United States.

Some of the intent behind the Omnibus Budget Reconciliation Act of 1993 was to provide a transition to a lower rate of assistance. The transitional path downward was replaced by a much higher rate of revenue support under the Secure Rural Schools Act.

The goal of the payments to counties legislation was clearly met. The legislation has replaced past dependence on timber-harvest revenues and has generally mitigated the lost revenues associated with the declines in federal timber harvest in the region. It is not known how the owl safety net payments have affected overall county financing. In the short term, a guaranteed amount is likely to have a stabilizing effect. The Secure Rural Schools legislation, however, sunsets on September 30, 2006. The long-term stability of the payments is uncertain. Without new congressional action, counties in the Plan area will need to address a projected $270 million in revenue shortfall. Congressional hearings are expected in 2005 to address the possibility of reauthorization of the Secure Rural Schools legislation.

Chapter 8: Plan Effects on Forest-Based Communities

Monitoring questions	Indicators monitored
(1) Are local communities and economies experiencing positive or negative changes that may be associated with federal forest management? (2) Have the FS and BLM helped maintain the stability of local and regional economies on a predictable, long-term basis? (3) Have the agencies assisted with long-term economic development and diversification to minimize adverse impacts associated with job loss?	• Census indicators relating to population, employment, education • Socioeconomic well-being scores • Agency jobs • Procurement contracting opportunities • Community economic assistance • Payments to county governments

Plan expectations—

The main adverse social and economic effects of the Plan would be associated with the loss of jobs and income caused by reduced federal timber harvests. These cutbacks were predicted to threaten the economic vitality of many communities that had depended on them in the past. Not all communities were expected to be affected the same way, or to the same extent. Loggers, mill owners and workers, small businesses, and their families were expected to experience significant, long-lasting effects that would be difficult to overcome. In some communities, the impacts of the Plan would be very noticeable; in others, they would not be visible. The communities most negatively affected would be the relatively small and isolated communities that were closest to federal forest land, lacked economic diversity, were dependent on public timber harvests, and had low leadership capacity. Communities with the highest capacity to adapt to Plan-related change would be those having good access to transportation, markets, and raw materials, a high degree of economic diversification, and quality leadership.

Communities dependent on amenity, recreation, or other environmental quality resources could be positively affected by the Plan. Nevertheless, nonconsumptive forest activities and recreation were not expected to sustain those communities whose economies had been timber based

Some rural communities would experience the effects of reductions in Forest Service employment. The environmental impact statement forecast the loss of up to 2,000 FS jobs. Payments to county governments in lieu of taxes would drop as timber sale receipts dropped. Employment in the “forestry services” sector (such as reforestation, timber stand improvement) would also decline.

The negative effects of the Plan on forest-based communities and economies were expected to be partially offset by Plan-related mitigations. A number of ecosystem restoration activities on federal forests could create 7,000 jobs per year between 1994 and 1997.

So-called "owl guarantee payments," which began in 1991, would provide a safety net for county governments and make up for some lost timber revenues. In addition, a community economic assistance program was proposed that would provide $1.2 billion to help workers and their families, businesses and industries, and communities cope with change induced by the Plan.

Monitoring results—

Twelve case-study communities were monitored to assess whether social and economic change there since 1990 was associated with federal forest management. All of the case-study communities showed changes over the last two decades. Although timber was one of the major economic sectors in all of these communities in the 1970s and 1980s, the timber sector had become minor or negligible in many of them by 2003. Federal forest management policy was just one of many variables shaping the changes in these communities, however, and the extent of its effects varied considerably. These effects depended on the relative strength of the timber sector in each community around 1990, the extent to which wood products harvested on federal forest lands supported that sector, and the degree to which local residents depended on FS jobs. The decline in agency jobs associated with reductions in FS timber programs strongly affected several case communities, just as the loss of timber sector jobs did.

The Plan was not the only variable causing the Pacific Northwest timber economy to change. The timber sector in some communities had been declining since the early 1980s because of an economic recession, domestic and international competition, changes in market demand for wood products, industry restructuring, mechanization and technological advances, and environmental regulations—and the Plan added to these pressures. Other case-study communities seemed to be relatively buffered from the changes that affected the industry during the 1980s. Interviewees there perceived the halt of federal timber production around 1990 as the beginning of the end.

Some communities were sustained through the transitional period of the 1990s by having a substantial agricultural sector, being near a major transportation corridor, or being close to a popular recreation and tourism destination. Other communities had an influx of retirees, commuters, mobile or self-employed workers, second-home owners, immigrants, or low- and fixed-income populations. Some communities that had been goods and services centers expanded their role as regional centers. And tribes, where present, played an important role in contributing to community development through the growth of tribal businesses, administration, and social and environmental services. Tribal forest lands also helped sustain local timber economies in some areas.

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Chapter 1: Introduction

Susan Charnley

One of the evaluation questions in the Northwest Forest Plan (the Plan) record of decision (ROD) concerns 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 ROD lists key items to monitor: demographics, employment, government revenues, facilities and infrastructure, social service burden, federal assistance programs, business trends, and taxes.[1] Volume III of the socioeconomic monitoring report focuses on this evaluation question.

The question is rooted in concerns that prevailed in the early 1990s about how cutbacks in federal timber harvesting under the Plan would affect local, forest-based communities in the Pacific Northwest.[2] Many of these communities had residents who worked in the timber industry as loggers, mill workers, secondary wood-products manufacturers, and transporters of wood and wood products. In the early 1970s, timber industry employment in the Plan area stood at about 6 percent of total employment in Washington, almost 12 percent in Oregon, and 31 percent in California (FEMAT 1993: VII-53). By the late 1980s, the relative importance of timber employment in each of these regions had declined by 50 percent (FEMAT 1993: VI-25).

Any reduction in federal timber harvest volumes could incur additional negative social and economic effects on timber workers and their families in the region, especially on those depending on federal forest lands.[3] These workers were already being squeezed by global competition for wood and wood-products markets, labor-saving technologies leading to increased mechanization in mills, and the economic recession in the early 1980s. Not only were jobs at stake, but timber workers were an important part of many rural, forest-based communities, contributing to their social and economic vitality. Logging, milling, and timber services formed the basis for a way of life in some communities. This way of life, and the cultural values and practices associated with it, were also threatened.[4] Thus, President Clinton requested "a balanced and comprehensive strategy for the conservation and management of forest ecosystems, while maximizing economic and social benefits from the forests" (USDA and USDI 1994a: E-1).

The final supplemental environmental impact statement (FSEIS) associated with the Plan (USDA and USDI 1994a) contained several expectations about the effects of the Plan on rural communities and economies.[5] The major adverse social and economic effects were expected to be associated with the loss of jobs and income caused by reduced federal timber harvests (USDA and USDI 1994a: 3&4-320). These cutbacks were predicted to threaten the economic vitality of many communities that had depended on them in the past. Not all communities were expected to be affected the same way, however, or to the same extent. The FSEIS predicted that the Plan's effects would be intense and debilitating for some forest-based communities and some people employed in the wood-products industry, and would provide a challenge and an opportunity for change to others (USDA and USDI 1994a: 3&4-310). Unlike temporary, historical downturns in the timber industry, these effects would last longer than a firm's or worker's ability to "wait it out" (USDA and USDI 1994a: 3&4-311). Thus, loggers, mill owners and workers, small businesses, and their families were expected to experience significant, long-lasting effects that would be difficult to overcome. In some communities, the effects of the Plan would be very noticeable; in others, they would be invisible (USDA and USDI 1994a: 3&4-308). The FSEIS predicted that the communities most negatively affected would be the relatively small and isolated ones closest to federal forest lands that lacked economic diversity, depended on public timber harvests, and had low leadership capacity (FEMAT 1993: VII-9, USDA and USDI 1994a: 3&4-301).

[1] Appendix A explains which of these indicators were monitored, and why others were not.

[2] We follow Danks (2003) in defining forest-based communities as those having economic, social, and cultural ties to nearby forests.

[3] On average, 30 percent of the timber produced in western Oregon and Washington each year between 1970 and 1990 came from FS and BLM lands (Warren 2003).

[4] See Haynes and Grinspoon (in press) for a more thorough discussion of changes in the Pacific Northwest forestry sector since the 1940s and how it affected rural communities.

[5] The effects of alternative 9 (the preferred alternative adopted by the Plan) were not analyzed in detail.

Communities with the highest capacity to adapt to Plan-related change would be those with good access to transportation, markets, and raw materials; a high degree of economic diversification; and high-quality leadership. For example, coastal communities were predicted to adapt better and experience fewer negative consequences from the Plan (FEMAT 1993: II-68).

The agencies also predicted that communities depending on amenity, recreation, or other environmental quality resources could be positively affected by the Plan (FEMAT 1993: VII-9). For example, recreation-related employment in coastal communities could expand as a result of improved salmon and trout runs associated with watershed restoration (USDA and USDI 1994a: 3&4-288). Nevertheless, nonconsumptive forest activities and recreation were not expected to sustain those communities whose economies had been timber based (USDA and USDI 1994a: 3&4-309).

Additional negative effects of the Plan were also predicted. Some rural communities would experience the effects of reductions in Forest Service (FS) employment. The FSEIS forecast the loss of up to 2,000 FS jobs (USDA and USDI 1994a: 3&4-311). Payments to county governments in lieu of taxes would drop as timber sale receipts dropped (USDA and USDI 1994a: 3&4-309). Employment in the "forestry services" sector (such as reforestation, timber stand improvement) would also decline (USDA and USDI 1994a: 3&4-291). In evaluating whether local communities experienced positive or negative changes associated with federal forest management during the first decade of the Plan, we compare our findings with this set of expectations from the FSEIS and the Forest Ecosystem Management Assessment Team (FEMAT) report.

The negative effects of the Plan on forest-based communities and economies were expected to be partially offset by Plan-related mitigations. For example, several ecosystem restoration activities on federal forests were expected under the Plan (USDA and USDI 1994a: 3&4-308). Investments would be made in assessments, surveys (such as northern spotted owl [*Strix occidentalis caurina*], marbled murrelet [*Brachyramphus marmoratus*], and survey and manage species), inventories, and watershed restoration on Plan-area forests that could create 7,000 jobs per year between 1994 and 1997 (USDA and USDI 1994a: 3&4-291). So-called "owl guarantee payments," which began in 1991, would provide a safety net for county governments and make up for some lost timber revenues (USDA and USDI 1994a: 3&4-298). In addition, a community and economic assistance program was proposed to provide $1.2 billion to help workers and their families, businesses and industries, and communities cope with change induced by the Plan (USDA and USDI 1994a: 3&4-313–314). We evaluate how effective these mitigation measures were at the local and regional scales in this volume.

In volume III we also evaluate two of the Plan's socioeconomic goals: to maintain the stability of local and regional economies on a predictable, long-term basis (Haynes and Perez 2001; Mulder et al. 1999: 4; Tuchmann et al. 1996; USDA and USDI 1994a, 1994b: 26); and, where timber sales cannot proceed, to assist with long-term economic development and diversification to minimize adverse effects associated with job loss (Mulder et al. 1999: 4, Tuchmann et al. 1996, USDA and USDI 1994b: 3). These goals were based on President Clinton's desire for the Plan to address the human and economic dimensions of forest management in the Pacific Northwest (USDA and USDI 1994b: 26):

> The need for forest products from forest ecosystems is the need for a sustainable supply of timber and other forest products that will help maintain the stability of local and regional economies, and contribute valuable resources to the national economy, on a predictable and long-term basis.

Where timber sales could not go forward, President Clinton sought to provide new economic opportunities for year-round, high-wage, high-skill jobs that would mitigate job loss in the timber sector associated with reductions in federal timber harvest (USDA and USDI 1994b: 3).

Our focus is explicitly on rural communities having ties to nearby federal forest lands, as directed by the ROD (USDA and USDI 1994b: E-9), and consistent with the Plan assessment report (FEMAT 1993) and EIS (USDA

and USDI 1994a). Rural and timber-dependent communities were expected to experience the greatest social and economic effects from Plan implementation (USDA and USDI 1994a: 3&4: 306). The team did not evaluate the effects of the Plan on all forest users, on nonlocal communities with few, if any, ties to federal forest lands, or on stakeholders from metropolitan areas.

Monitoring Approach

The baseline year for monitoring in this report is 1990. We chose 1990 as the baseline for several reasons. First, we use social and economic indicators from the U.S. Census to assess community-scale socioeconomic change over time. The census happens once every 10 years (1990 and 2000). Second, although the Plan was implemented in 1994, the spotted owl listing occurred in 1990, quickly followed by court injunctions against harvesting federal timber. Thus, the impacts of reduced federal timber harvesting began in 1991; the Plan was an attempt to restore the flow of federal timber. Finally, in order to evaluate the effects of the Plan on Pacific Northwest communities, it is helpful to compare what conditions were like before and after the Plan was implemented. It was not possible to obtain data as far back as 1990 for some indicators, however, so not all of the chapter analyses begin with that year. We discuss data issues in each chapter.

The ROD evaluation question has two components. First, are local communities and economies experiencing positive or negative changes? Chapter 2 provides a broad overview of community-scale change in the 1,314 communities the team delineated in the Plan area. The period of analysis is 1990–2000. The methods used to delineate communities and assess socioeconomic change there are described in detail in chapter 2.

The second component of the evaluation question asks whether the changes in rural communities and economies are associated with federal forest management. Addressing this question requires an understanding of how socioeconomic conditions in rural communities are linked to federal forests and their management. Federal forests and the agencies that manage them provide several benefits that can contribute to socioeconomic well-being in local communities. These benefits include jobs and income associated with producing forest resources (timber, special forest products, livestock forage, minerals) and recreation; jobs working for the FS and the Bureau of Land Management (BLM) (permanent, seasonal, and temporary); agency procurement contracts for ecosystem management work; community economic assistance programs that provide funding for local economic development and diversification projects; and revenues to county governments that support roads, schools, and other general purposes. Chapters 3 through 7 of this volume examine trends in the production of these socioeconomic benefits from lands managed by the FS and BLM between the early 1990s and the early 2000s for the Plan area as a whole. Most of the results are reported by agency.[6] In addition to documenting regional-scale trends, we investigate how the Plan has influenced those trends. Our methods are described in each chapter.

As Cronon (2004: xii–xiii) observes, laws find their ultimate expression when they are enforced locally. The complexity of their effects cannot be understood from a "bird's-eye view"; instead, what matters is their effects on the ground. Similarly, understanding the seemingly abstract effects of larger systems and processes, requires grounding them in local places where they become real (Cronon 2004: xii-xiii). Thus, to understand how the Plan as a management policy affected rural communities and economies in the Pacific Northwest, we had to look at how it was implemented on specific national forests and BLM districts; at how Plan implementation affected the flow of socioeconomic benefits from federal forests to local communities; and at how this changing flow of benefits affected specific local communities. The team selected four case-study forests and three communities associated with each forest to investigate these relations at the local scale (fig. 1-1).

[6] The FS and BLM often tracked different measures related to the same indicator, or had data available for different years, making it hard to combine data sets.

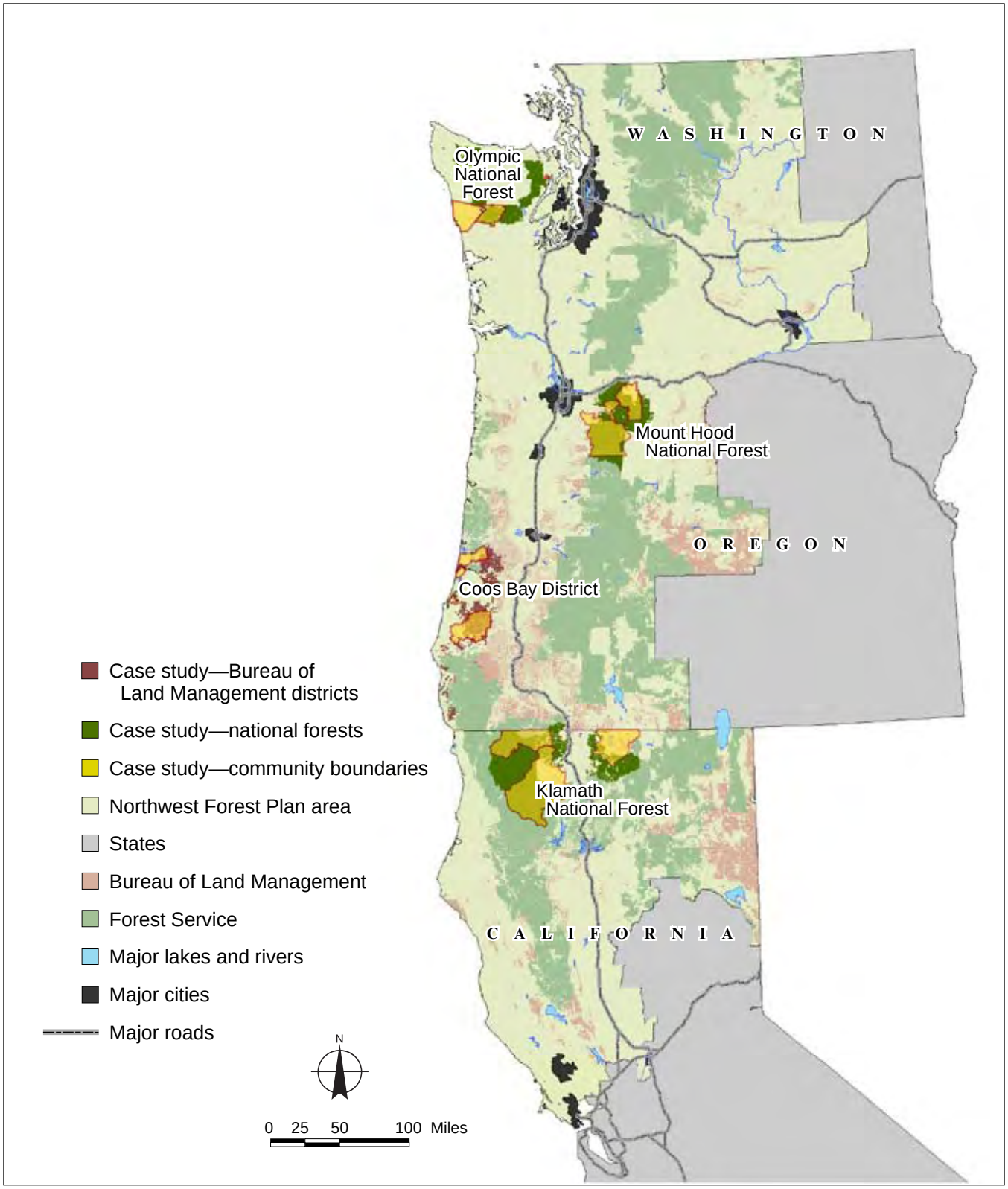

Figure 1-1—Case-study forests and communities.

Case-study forests and communities

Olympic National Forest
- Quinault Indian Nation
- Lake Quinault Area
- Quilcene

Mount Hood National Forest
- Upper Hood River Valley
- Villages of Mount Hood from Brightwood to Rhododendron
- Estacada

Klamath National Forest
- Scott Valley
- Butte Valley
- Mid-Klamath

Coos Bay BLM District
- Greater Coos Bay
- Greater Reedsport
- Myrtle Point

The methods used to choose the case-study forests and communities are described in chapter 8 and appendix B. The results of the case-study analysis are presented and discussed in chapter 8.

The ROD states that the complexity of relations and the number of factors involved in socioeconomic monitoring mean that setting specific or definite thresholds or values, which would cause a reevaluation of Plan goals, strategies, standards, and guides is impossible (USDA and USDI 1994b: E-9). Neither the ROD, the FSEIS, nor the FEMAT report provide any measures against which to judge "success" or lack thereof in achieving Plan socioeconomic goals. Alternatively, success may be measured against the standard of a desired condition (USDA and USDI 1994b: E-6). The desired condition in the ROD is the same as the Plan goals: to maintain the stability of local and regional economies (USDA and USDI 1994b: 26) and to assist with long-term economic development and diversification by offering new economic opportunities for year-round, high-wage, high-skill jobs (USDA and USDI 1994b: 3).

In chapter 9 we use the results of the analyses from the preceding chapters to respond to the ROD evaluation question to the best of our ability. We report trends in socioeconomic conditions and forest benefits and how the Plan may have contributed to those trends. We compare the monitoring trends with the expectations set out in the FSEIS and FEMAT report. We also evaluate how effective Plan-associated mitigation measures were, and how well Plan goals were met.

The team used a combination of qualitative and quantitative research methods in monitoring to address the evaluation question. We obtained quantitative data from existing secondary sources; we did not collect any primary quantitative data. These data enabled us to measure change, make comparisons, and aggregate information to produce broad, generalizable results for the Plan area as a whole. As Albert Einstein observed, however, "Not everything that can be counted counts, and not everything that counts can be counted" (Patton 2002: 12). The limitations of the quantitative data were that readily available socioeconomic data from secondary sources were often unavailable at the community scale (an important unit of analysis for socioeconomic monitoring), the readily available data were often not relevant for answering the evaluation question, and quantitative data only indicate status and trends—they do not explain them. Without understanding what the status and trends mean and their causes, undertaking adaptive management actions is difficult.

To supplement the quantitative monitoring data, the team used a community case-study approach to gather and analyze qualitative data relevant for answering the evaluation question. The 12 case studies do not serve the purpose of generalizability to the Plan area as a whole; rather, they are instructive for the way in which they illustrate how the Plan affected some rural communities around federal forest lands, and the ways in which agency efforts to mitigate Plan effects did or did not help communities adapt to change. Much can be learned from them. These qualitative data provide a more detailed understanding of the social and economic conditions and trends described by the quantitative data, the meanings people associate with the trends in the quantitative data, and insights into what caused them. In short, they describe the social and economic effects of the Plan on a sample of communities. 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 is linked to socioeconomic well-being in communities, the subject of the evaluation question.

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