

Date 1/19/94  
Amount 752-3  
shelf 64  
JNU 30262 JK

EM 8544  
Reprinted January 1994

# Timber in Oregon: History & Projected Trends

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To understand how we  
got to where we are  
today, it is helpful to  
take a brief look at  
history.

Oregon's timber economy can be characterized by the words *change*, *complexity*, and *challenge*. The industry has been changing since it began. Recent changes have affected the lives of many and have been widely termed a crisis, yet this is not the first time that change has produced dislocation and complex problems.

The solutions to today's "timber crisis" are equally complex. It will be a challenge for the industry and the rest of society to build the consensus necessary for continued sustained production in the future.

To understand how we got to where we are today, it is helpful to take a brief look at history.

## History

The history of Oregon and its current character have been shaped largely by the harvesting of timber over the past 100 years or so. Land and resources gave incentives for westward migration and settlement. The timber of the West was exploited to the limit of the technology available in the early days, but tools were too primitive and populations too sparse to reduce the resource by very much.

In the late 19th century, the timber barons of the Lake States moved to capitalize on the timbered wealth of the West. The timber industry that took hold and grew in the West was

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and continues to be dominated by a few large companies and heavily influenced by decisions made away from the woods and in other parts of the country.

The conservation movement began in the late 1800s as an outgrowth of concern about exploitation of all natural resources, not just timber. Congressional legislation paved the way for the creation of public forest lands. The USDA Forest Service was created in 1905 to conserve the resource and to stabilize markets. Most Forest Service land is in the West because timberlands east of the Mississippi were in private ownership and had largely been cut over by the time public forests became a reality.

Because the timber industry has always been subject to the impulses of the market, change has been constant. The timber industry shifted from steam power to petroleum-based fuels in the decades before World War II. Improvements were made in harvesting and milling technology. Starting in the mid-1920s, labor unions fought for better working conditions, resulting in laws that improved the life of workers in the woods and the mills.

World War II caused an upsurge of business for the timber industry, and high demand for housing after the war fueled a boom that lasted until the mid-1960s. The environmental movement arose at about that time, and its growing influence made itself felt in conservation-oriented federal forest management laws passed during the 1960s and 1970s. The Forest Service, returning to the original principles of its founder, Gifford Pinchot, began emphasizing sustained-yield principles in its timber planning. In addition, land allocation on national forests began to change as environmental lawsuits forced the withdrawal of some areas from timber production and as others were designated by the Forest Service for wilderness and other uses.

The recession of the early 1980s, the worst since the 1930s, sent the timber economy into a slump. Lumber and timber products plants laid off workers or closed outright; logging companies disbanded. Companies went bankrupt, merged, or were bought out, sometimes by interests with no historic ties to the timber industry. This recession appears to have speeded up trends already at work in the industry, with companies that survived the recession investing in cost-cutting and efficiency measures for their manufacturing plants.

The result was a more efficient industry that employed fewer, more productive workers, according to a 1993 report by Brian Greber of Oregon State University. Employment in the solid-wood products industries fell from 134,000 to

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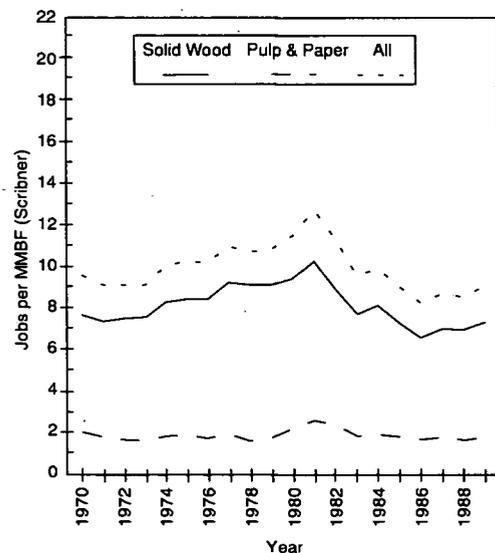
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**Figure 1.** Annual forest products jobs per mmbf of timber harvest in Oregon and Washington (Greber 1993)

108,000 between 1977–79 and 1987–89 (Greber 1993). These decreases took place even as harvest levels increased 5 percent over the same period. This increased productivity could be said to have displaced 24 percent of the jobs from solid-wood products industries over the 10-year span (Figure 1).

Even though fewer people had timber jobs, productivity increased as mills took advantage of modern technology. In 1977–79 it took about 9.2 wage and salary employees to process 1 million board feet of timber into solid-wood products (Greber 1992). By 1987–89 that figure had fallen to about 7 employees (Greber 1993).

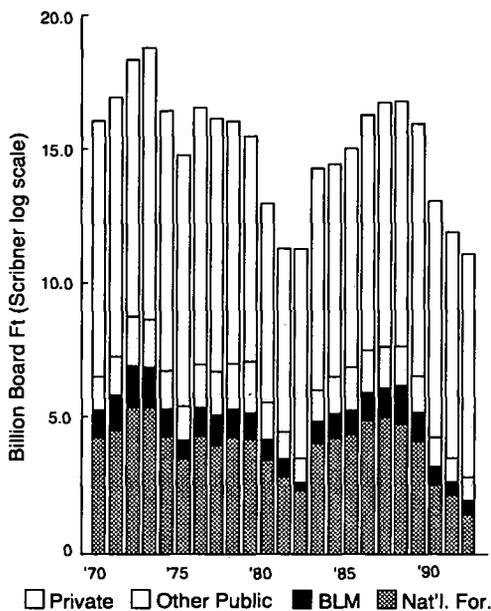
Northwest wood products manufacturers could not be very competitive with other regions in the 1980s with labor costs 26 percent higher in the Northwest than the South (Haynes 1990). People in the Northwest’s forest products industry lost their jobs because of four main factors: closing of older, inefficient mills; improved skills of workers; layoffs; and increased capital investment in manufacturing technology. One factor that apparently was not significant was the level of log exports (Greber 1993).

While these job cuts were painful for the workers, they were necessary if the industry was to survive. Greber (1993) states, “What would have been the fate of the timber industries in the region had productivity changes not occurred? Simply put, job displacement in the Pacific Northwest would likely have been accelerated had producers not improved efficiency. Rather than looking at labor productivity changes as having displaced 24 percent of the workforce, it may be more appropriate to view these efficiency gains as having *saved* some 76 percent of the workforce.”

Clearly the issue of forest resource use in Oregon is complex. Following is a glimpse at the situation today, some short-term projections and some long-term possibilities.

## Many Factors Affect Oregon’s Timber Industry

With the exception of the late 1980s, harvests have been drifting generally downward over the past two decades (Figure 2). This is a result of market conditions, long-term and broad-scale changes in the forest products marketplace, and public forest management priorities. Even before listings of threatened or endangered species began to affect timber supply, future timber availability already had been projected to decline in Oregon over both the short and the long term,



**Figure 2.** Timber harvests in the Impact Region (western Washington, western Oregon, and northern California) (Greber 1993)

according to a comprehensive report on timber availability (Sessions et al. 1991). This report, *Timber for Oregon's Tomorrow: The 1989 Update* (referred to here as the Sessions Report), divides Oregon into nine timbersheds and assesses the short-term and long-term prospects for timber availability from each over the next century (Figure 3).

In conversations and in the press, threatened or endangered species often are labeled as “the reason” for declining timber harvests in Oregon. However, they are not the only factor affecting the timber harvest. Before anyone ever heard of “the owl,” mills have been closing throughout Oregon. Endangered species may rather be viewed as indicative of the broader dispute over the forests: *how publicly owned forests are to be managed, and what will be the pattern of timber availability in the future.*

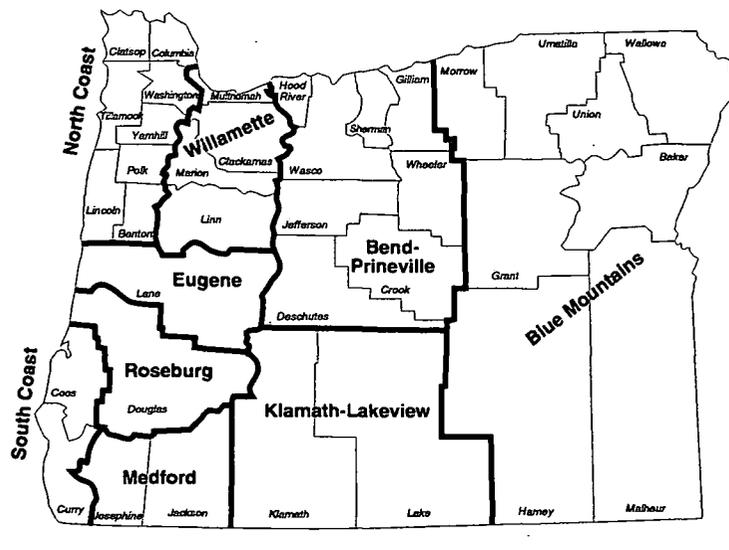


Figure 3. Oregon timbersheds (Sessions et al. 1991)

“Indicator species” have been used for decades to assess environmental conditions (Landres et al. 1988). The welfare of an indicator species reflects the welfare of other forest species and of the forest ecosystem itself. The northern spotted owl is considered by biologists to be an indicator species. Let’s look at how decisions made about the northern spotted owl have affected the way forest lands are managed.

The northern spotted owl was declared threatened under the Endangered Species Act by the U.S. Fish and Wildlife Service in June 1990. A panel of federal scientists known as the interagency scientific committee (ISC) proposed setting aside a system of habitat conservation areas (HCAs) over the publicly owned, federally managed forests of Oregon, Washington, and northern California and prohibiting timber harvesting within those areas (Thomas et al. 1990) (Figure 4). The ISC made two other major recommendations: (1) that certain parts of state forests be allocated to the HCA network and (2) that certain lands outside the HCAs be managed in such a way that northern spotted owls could use them as connective corridors; such management would involve some restriction of timber harvest in these corridors.

These recommendations were implemented in 1990 on federal forests. At this writing, the HCAs and their accompanying harvest restrictions are still in place because of court

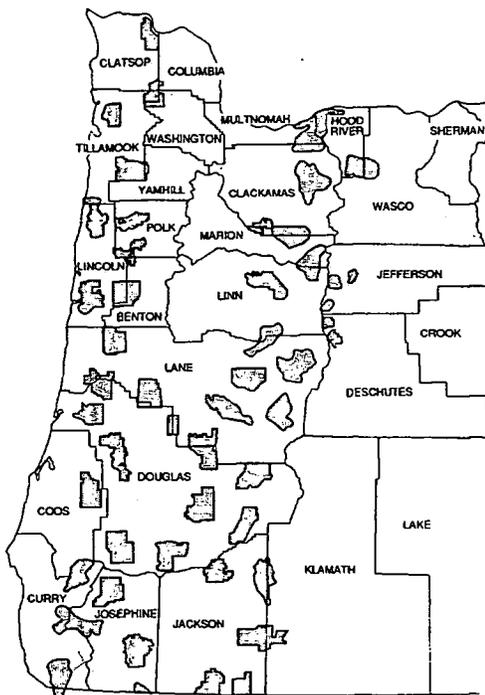
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**Figure 4.** Oregon's northern spotted owl habitat conservation areas (HCAs) as delineated in the ISC Conservation Strategy (Thomas et al. 1990 in Greber et al. 1990)

injunctions imposed on agencies pending adoption of a recovery plan for the northern spotted owl. According to Greber and others (1990), the northern spotted owl's listing has had and will continue to have a significant effect, further reducing timber lands available for harvest. Just how much reduction will take place depends on three factors: (1) how much land will be withdrawn in the final protection plan, (2) whether this plan will encompass private lands, and (3) how private timber landowners will (or will be permitted to) respond to the reduced availability of public timber.

This report, referred to here as the Greber report, revises the 1989 timber-availability projections in light of the northern-spotted-owl developments, basing its projections on several assumptions. Most important among them are (1) that timber lands will be withdrawn from harvest as recommended in the ISC Conservation Strategy (that is, the HCAs) and (2) that private landowners will respond according to one of three scenarios. These three scenarios are (a) *No private response*—the harvest continues as before, (b) *Private price response*—private land is harvested faster than before to take advantage of higher prices for logs, and (c) *Private conservation*—private landowners adopt a conservation plan along the lines of the ISC strategy.

## Oregon's Forests

About 24 million acres of Oregon's 61 million acres are forested. Of the forested area, almost 60 percent is publicly owned and federally managed (Sessions et al. 1991), either by the Forest Service or by the Bureau of Land Management. State- and local-government management brings the total of publicly owned forest land in Oregon to 65 percent of the total forested acres (Greber et al. 1990).

The character and composition of Oregon's forests has been changing for a long time, generally shifting from old-growth virgin forests to managed, young plantations. This trend began on forest industry lands (where, in fact, it is virtually accomplished) and it is continuing on federal and other public lands.

About half the remaining old-growth (160+ years old) forest areas in Oregon—1.5 million acres—is reserved from harvest through wilderness designations or discretionary decisions by Forest Service and BLM managers (Sessions et al. 1991). Barring catastrophic events like fire or massive windstorms, about 2.2 million acres of forests dominated by trees older than 160 years will be standing by 2090.

The various timbersheds of the state contain trees of different ages. The North Coast, for example, which includes the young Tillamook Forest, has trees younger than most other tree-growing areas—meaning the prospects for future timber availability are higher there than in other areas.

About 2.5 million acres of Oregon's public forest lies in HCAs. The forest land unavailable for harvest has increased from 4.6 million to 6.2 million acres (from 19 to 26 percent of the total forested acreage). More than half this land is in timber-rich western Oregon, where the HCAs are so distributed that declines are felt in every timber-growing area (Appendix Table 1).

## Timber Harvest

Although long a dominant presence in Oregon's economic and social life, timber is becoming less of an influence, and that trend will continue. The value of forest products to Oregon's economy has declined (Appendix Table 2). Nevertheless, the forest products industry is and will continue to be important. Currently, Oregon is the nation's number one producer of lumber and plywood (personal communication, Random Lengths, Eugene, Oregon, 1993).

Douglas-fir continues to be the main commercial species in western Oregon. Over the long term (depending on harvesting decisions made in the next couple of decades), harvested species may shift somewhat from Douglas-fir to high-elevation true fir and mountain hemlock in western Oregon.

In eastern Oregon, the mix of commercial species is shifting from ponderosa and lodgepole pine to Douglas-fir, true firs, and spruce (Sessions et al. 1991), which have grown in many areas to replace the logged old-growth pines. This trend is projected to continue unless management changes are made.

Clearcutting will remain the predominant harvest system in western Oregon in the short run (Sessions et al. 1991). In the long run, managers will reduce slightly the number of acres clearcut and increase the number of acres thinned. Again, the projections depend of the continuation of current management practices.

East of the mountains, clearcutting will remain high until about 2010 because of salvage logging of lodgepole pine in connection with the insect epidemic. After that, clearcutting will decline rapidly and thinning will increase.

The amount of harvest has declined over the past few decades from a high of about 10 billion board feet in 1968

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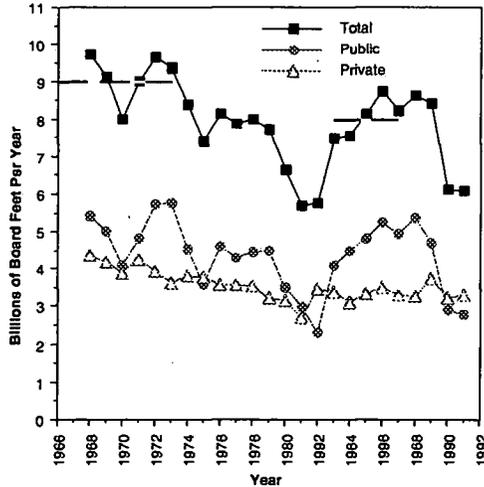
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**Figure 5.** Board-foot harvest for Oregon, 1968–1988. Broken lines indicate harvests in the reference periods, 1968–73 (1976 study) and 1983–87 (Sessions et al. 1991)

*The Sessions report projected—before the northern spotted owl was listed as threatened—that the 1983–87 level of harvest was not sustainable either in the near term or over the next century.*

down to a low of about 5.7 billion board feet in 1981, at the low point of the recession of the early 1980s (Figure 5). By 1983 the harvest level had begun to climb, and by 1988 it was back up to a little more than 8.6 billion board feet. However, it dropped again in 1991 to 6.08 billion board feet—the lowest level since the recession years of 1981–82. A summary of timber harvests in Oregon by owner class from 1954 to 1991 is listed in Appendix Table 3.

The Sessions report projected—before the northern spotted owl was listed as threatened—that the 1983–87 level of harvest was not sustainable either in the near term or over the next century. The report’s projections were a harvest level of about 7.5 billion board feet in this decade, gradually dropping to 7 billion board feet in the decade 2040–2050, and then climbing to slightly above 7.5 billion board feet by 2090.

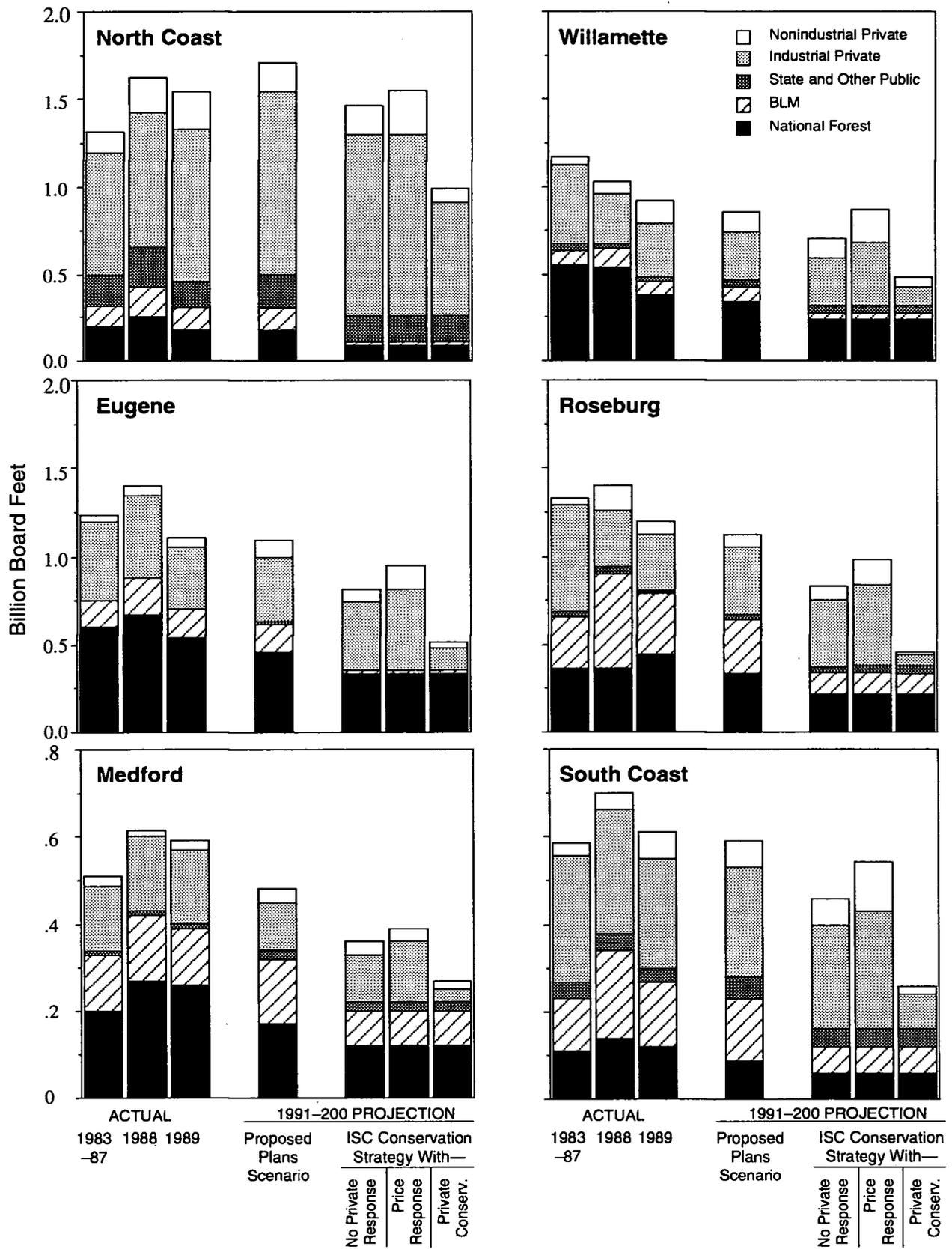
The Greber report projected lower harvests if state and federal land managers implement the ISC Conservation Strategy along with their most recent forest plans. Oregon will face a decline in harvest to 6.3 billion board feet, depending on what private landowners do, by early in the next century. If private landowners also adopt a northern spotted owl conservation strategy, harvest levels over the next two decades will be just higher than 4.6 billion board feet (Appendix Table 4). The decline in harvest will be felt unevenly over Oregon’s timbersheds (Figure 6).

Generally, the forests of the Cascades (the Willamette, Eugene, Roseburg, and Medford timbersheds) will see declines of more than 20 percent in this decade, even if private landowners accelerate their harvests. If private landowners adopt a conservation strategy, declines in timber availability will be 47 to 65 percent in all western timbersheds except the North Coast, and even there, availability could decline 23 percent from the 1983–87 level.

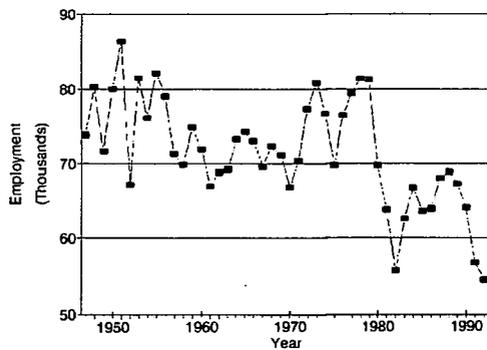
## Effects on Employment and Timber-Dependent Communities

As the timber industry becomes more efficient, society benefits. But timber-dependent workers, families and communities face the changes brought about by automation, layoffs, and plant closings (Humphrey 1990).

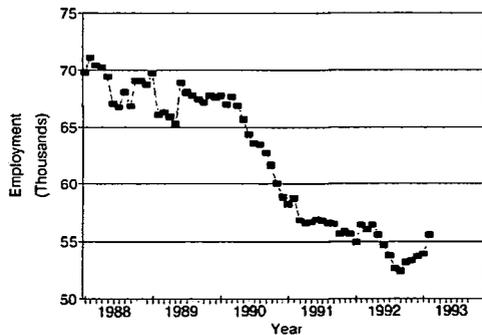
Looking at annual averages from 1947 to 1992, lumber and wood products employment in Oregon has fluctuated over the years (Figure 7). But if we look at seasonally adjusted data (Figure 8), we see that lumber and wood-products employment has generally declined. For example, timber-related



**Figure 6.** Regional annual harvests by owner group: historic (1983–87 average, 1988, 1989) and projected (1991–2000 average) under differing scenarios on public and private lands for different timberheds (Greber et al. 1990)



**Figure 7.** Lumber and wood products employment, Oregon: Annual averages, 1947–1992 (Oregon Employment Division 1993)



**Figure 8.** Lumber and wood products employment, Oregon: Seasonally adjusted data (Oregon Employment Division 1993)

employment declined by 10 percent between 1976 and 1988, while overall Oregon employment rose by 30 percent during the same period (Appendix Table 5). The Sessions report projected that, with reduced harvest and increased productivity, timber-related employment would drop from 6.8 percent of all jobs in the state in 1988 to 5.3 percent in 1995. Even if the 1983–87 harvest levels could somehow have been maintained, employment was projected to drop almost that far anyway, from 6.8 percent in 1988 to 5.6 percent in 1995.

Even though Oregon’s economy is projected to grow by 1.46 to 1.74 percent per year in this decade, that growth will take place mostly in the nonmanufacturing sector and will be concentrated pretty much in the cities. Timber industry employment will fall in all western Oregon timbersheds except the North Coast (Figure 6). Generally, the timber-based rural economy will continue to decline. If private lands also adopt a conservation strategy, the decline will be steeper (Appendix Table 6).

Like many rural communities throughout the nation, Oregon’s timber-dependent communities are at risk. Many such communities have workers who will lose, or have already lost, jobs and income. Comparable work at comparable wages is difficult to find. Young people will no longer be able to quit school and get good-paying jobs in the mills or the woods as their parents did. The forestry work force in the United States and other industrialized regions is in rapid transition, and workers are experiencing change in their work and personal lives at unparalleled rates (Garland 1992).

Timber-related contributions to local government budgets also are declining. Such declines may have small effects when averaged over local governments statewide, but effects within timber-producing areas can be substantial. Proceeds from timber harvest contribute to county and school district budgets in the form of revenue sharing from state and federal forests and receipts from severance taxes. In addition, many counties reap income from their own forest lands. For example, the 1987 harvest contributed more than 24 percent, on the average, of the 1988 budgets of Oregon counties and about 2 percent of the 1988 budgets of school and educational service districts (ESDs). In some rural areas, the timber contribution was much more: up to 65 percent of the county budget and up to 8.5 percent of the school and ESD budgets (Appendix Table 7).

This loss of jobs and income changes the community and brings other challenges. Loss of mill jobs has the effect of “aging” the community: younger workers are inclined to leave

the community in search of alternative employment, and older workers opt to remain in the community in the anticipation that the mill will reopen and their jobs will resume (Weeks 1990). Other challenges include declining rural property values, feelings of anger and grief over a change in a way of life, and a rise in social problems such as crime, family violence, and substance abuse. Timber-dependent communities will need social services to help them deal with such problems, but these services are costly and, at this writing, the state government is grappling with a budget crisis of its own. Households survive in these circumstances by a determined self-sufficiency to outlast whatever conditions they may encounter (Humphrey 1990).

Rural, timber-dependent communities need strong, community-based leadership to address immediate issues and long-term viability. Many of Oregon's rural, timber-dependent communities are working to develop such leadership. They are assessing their strengths and building their capacity to deal effectively with change in order to manage the transition more successfully. Through networking, coalition building, and employment diversification (new jobs in and out of the forest), they are promoting economic revitalization of their communities, working to ensure the provision of basic services, and promoting good stewardship of the region's natural resources.

## **Effects on Non-Timber-Dependent Communities**

A declining forest-products economy has negative effects that go beyond local hardships. Each displaced timber industry job costs more than one job in another part of the economy as the impact ripples through the economy. Since the timber industry buys a lot of its supplies and services from urban areas, the health or sickness of the industry affects the economies not only of small timber towns but of big cities. A recent study estimated the impact of change in timber supply in rural western Oregon and southern Washington on the economy of the Portland metropolitan area (Waters et al. 1992). With reduced harvest from implementing the ISC strategy on public lands in the rural counties (private land scenario) shown in Table 4, it was estimated that about 31,000 jobs would be lost in the rural areas (more than 5 percent of total rural jobs). This rural-area timber reduction also would affect the Portland economy, resulting in a loss of 5,400 city jobs (about 1 percent of city jobs). Almost 15 percent of the total regional effect of a rural timber supply decline is felt in the urban counties.

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Other effects that can be felt in all communities in Oregon, as well as across the country, include increases in lumber prices. Lumber prices increased by 90 percent, from \$250 to \$474 per 1,000 board feet, from early October 1992 to the end of February 1993. The price of structural panel products, such as plywood, rose by more than 30 percent during the same time period (Carliner 1993). Carliner goes on to say that the increase is brought about by many factors, which can include speculative panic buying and spikes in demand caused by Hurricane Andrew.

## **The Challenge**

The world starts to seem smaller and people's lives become more closely intertwined as we move into the global marketplace. It will be a challenge for the industry and the rest of society to build the harmony necessary to work together toward the maintenance of the state's superior natural resources and the stability of a basic enterprise that can be practiced in a sustainable manner.

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# Appendix Tables

**Appendix Table 1.** Oregon's forest land area by timbershed and owner class according to the Proposed Plans<sup>1</sup> scenario and implementation of the ISC Conservation Strategy

| Region<br>Timbershed         | Proposed Plans<br>Forest Land Area |         |                     |                      | ISC Conservation Strategy<br>Forest Land Area |         |                     |                      | Change in<br>Available Acres |                      |
|------------------------------|------------------------------------|---------|---------------------|----------------------|---|---------|---------------------|----------------------|------------------------------|----------------------|
|                              | Available                          |         | Not<br>Available    |                      | Available                                     |         | Not<br>Available    |                      | Public <sup>4</sup>          | Private <sup>5</sup> |
|                              | Public                             | Private | Public <sup>2</sup> | Private <sup>3</sup> | Public  | Private | Public <sup>4</sup> | Private <sup>5</sup> | Public <sup>4</sup>          | Private <sup>5</sup> |
| ----- (Thousand acres) ----- |                                    |         |                     |                      |   |         |                     |                      |                              |                      |
| Western Oregon               |                                    |         |                     |                      |   |         |                     |                      |                              |                      |
| North Coast                  | 825                                | 1,766   | 214                 | —                    | 518   | 1,670   | 521                 | 96                   | 307                          | 96                   |
| Willamette                   | 925                                | 936     | 591                 | —                    | 708   | 920     | 808                 | 16                   | 217                          | 16                   |
| Eugene                       | 985                                | 788     | 575                 | —                    | 668   | 705     | 892                 | 83                   | 317                          | 83                   |
| Roseburg                     | 1,172                              | 1,037   | 371                 | —                    | 811   | 902     | 732                 | 135                  | 361                          | 135                  |
| Medford                      | 792                                | 611     | 471                 | —                    | 571   | 546     | 692                 | 65                   | 221                          | 65                   |
| South Coast                  | 513                                | 769     | 228                 | —                    | 371   | 746     | 370                 | 23                   | 142                          | 23                   |
| Regional Total               | 5,212                              | 5,907   | 2,450               | —                    | 3,647   | 5,489   | 4,015               | 418                  | 1,565                        | 418                  |
| Eastern Oregon               | 5,793                              | 2,456   | 2,135               | —                    | 5,736   | 2,456   | 2,192               | —                    | 57                           | 0                    |
| State                        | 11,005                             | 8,363   | 4,585               | —                    | 9,383   | 7,945   | 6,207               | 418                  | 1,622                        | 418                  |

<sup>1</sup> Proposed Plans refers to the public agency plans released just prior to the ISC Conservation Strategy.

<sup>2</sup> Excludes 1.14 million acres with low productivity (biomass less than 20 ft<sup>3</sup>/acre/yr) and 170,000 acres of reserved land in eastern Oregon.

<sup>3</sup> Excludes 1.7 million acres with low productivity (biomass less than 20 ft<sup>3</sup>/acre/yr) in eastern Oregon and 341,000 such acres in western Oregon.

<sup>4</sup> Includes 123,000 acres of state lands in North Coast, 6,000 acres of state lands in Willamette, and 3,000 acres in Roseburg. Allocation decision will be made in state conservation plans.

<sup>5</sup> Dependent upon state-initiated conservation plan.

(Greber et al. 1990)

**Appendix Table 2.** Lumber and wood products as part of Oregon's gross state product

|                                | 1977  | 1978  | 1979  | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 |
|--------------------------------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|
| Billions of<br>Current Dollars | 2.45  | 2.86  | 2.96  | 2.41 | 2.03 | 1.76 | 2.31 | 2.51 | 2.33 | 2.47 | 2.86 | 2.99 | 3.10 |
| % of Total                     | 11.21 | 11.23 | 10.33 | 7.99 | 6.47 | 5.65 | 6.92 | 6.89 | 6.10 | 6.05 | 6.57 | 6.26 | 5.96 |

(Data from U.S. Bureau of Economic Analysis, November 1991, via Oregon Employment Division)

**Appendix Table 3. Summary of timber harvests<sup>1</sup> in Oregon by owner class (billion board feet)**

| Year | Private            | USFS  | BLM                | BIA   | State              | Other Agencies <sup>2</sup> | Totals <sup>3</sup> |
|------|--------------------|-------|--------------------|-------|--------------------|-----------------------------|---------------------|
| 1954 | 5.887              | 1.719 | 0.717              | 0.110 | 0.473 <sup>2</sup> | —                           | 8.906               |
| 1955 | 6.798              | 1.768 | 0.567              | 0.133 | 0.443 <sup>2</sup> | —                           | 9.709               |
| 1956 | 6.411              | 1.868 | 0.541              | 0.163 | 0.354 <sup>2</sup> | —                           | 9.337               |
| 1957 | 4.957              | 1.658 | 0.594              | 0.052 | 0.302 <sup>2</sup> | —                           | 7.563               |
| 1958 | 4.959 <sup>2</sup> | 2.144 | 0.752              | 0.099 | 0.119              | —                           | 7.709               |
| 1959 | 4.823 <sup>2</sup> | 2.935 | 0.969              | 0.076 | 0.138              | —                           | 8.941               |
| 1960 | 4.957 <sup>2</sup> | 2.315 | 0.863              | 0.076 | 0.174              | —                           | 8.385               |
| 1961 | 3.855 <sup>2</sup> | 2.442 | 0.895              | 0.041 | 0.182              | —                           | 7.415               |
| 1962 | 4.099 <sup>2</sup> | 3.075 | 1.104              | 0.053 | 0.169              | —                           | 8.500               |
| 1963 | 3.777 <sup>2</sup> | 3.247 | 1.366              | 0.071 | 0.215              | —                           | 8.676               |
| 1964 | 4.014 <sup>2</sup> | 3.431 | 1.638              | 0.091 | 0.244              | —                           | 9.418               |
| 1965 | 4.034              | 3.781 | 1.240              | 0.074 | 0.254              | 0.011                       | 9.394               |
| 1966 | 4.123              | 3.269 | 1.244              | 0.060 | 0.184              | 0.041                       | 8.921               |
| 1967 | 3.833              | 3.181 | 1.092              | 0.110 | 0.127              | 0.014                       | 8.357               |
| 1968 | 4.354              | 3.642 | 1.470              | 0.100 | 0.161              | 0.016                       | 9.743               |
| 1969 | 4.165              | 3.464 | 1.206              | 0.092 | 0.200              | 0.023                       | 9.150               |
| 1970 | 3.874              | 2.832 | 1.037              | 0.079 | 0.150              | 0.010                       | 7.982               |
| 1971 | 4.230              | 3.197 | 1.340              | 0.087 | 0.158              | 0.016                       | 9.028               |
| 1972 | 3.919              | 3.944 | 1.419              | 0.080 | 0.246              | 0.022                       | 9.630               |
| 1973 | 3.610              | 3.836 | 1.501              | 0.095 | 0.288              | 0.036                       | 9.366               |
| 1974 | 3.822              | 3.163 | 1.025 <sup>4</sup> | 0.111 | 0.225              | 0.015                       | 8.361               |
| 1975 | 3.781              | 2.661 | 0.626 <sup>4</sup> | 0.123 | 0.160              | 0.020                       | 7.371               |
| 1976 | 3.561              | 3.174 | 1.082 <sup>4</sup> | 0.108 | 0.203              | 0.025                       | 8.154               |

|      | Forest Industry | Other Private | National Forests | BLM <sup>4</sup> | BIA   | State | Other Public <sup>2</sup> | Totals <sup>3,5</sup> |
|------|-----------------|---------------|------------------|------------------|-------|-------|---------------------------|-----------------------|
| 1977 | 3.137           | 0.453         | 2.913            | 1.021            | 0.115 | 0.228 | 0.011                     | 7.876                 |
| 1978 | 3.163           | 0.387         | 3.232            | 0.837            | 0.121 | 0.235 | 0.022                     | 7.997                 |
| 1979 | 2.953           | 0.255         | 3.167            | 0.956            | 0.111 | 0.223 | 0.029                     | 7.694                 |
| 1980 | 2.930           | 0.204         | 2.399            | 0.797            | 0.105 | 0.186 | 0.019                     | 6.639                 |
| 1981 | 2.522           | 0.180         | 1.981            | 0.677            | 0.095 | 0.216 | 0.024                     | 5.695                 |
| 1982 | 3.221           | 0.219         | 1.688            | 0.312            | 0.126 | 0.175 | 0.017                     | 5.758                 |
| 1983 | 3.124           | 0.249         | 2.902            | 0.789            | 0.112 | 0.257 | 0.031                     | 7.464                 |
| 1984 | 2.768           | 0.310         | 3.164            | 0.920            | 0.101 | 0.249 | 0.038                     | 7.550                 |
| 1985 | 3.009           | 0.323         | 3.480            | 0.891            | 0.121 | 0.268 | 0.034                     | 8.127                 |
| 1986 | 3.066           | 0.428         | 3.850            | 1.042            | 0.104 | 0.225 | 0.028                     | 8.743                 |
| 1987 | 2.791           | 0.490         | 3.451            | 1.115            | 0.117 | 0.199 | 0.052                     | 8.215                 |
| 1988 | 2.673           | 0.586         | 3.487            | 1.439            | 0.121 | 0.270 | 0.029                     | 8.615                 |
| 1989 | 3.027           | 0.694         | 3.307            | 1.026            | 0.124 | 0.198 | 0.044                     | 8.420                 |
| 1990 | 2.628           | 0.601         | 2.014            | 0.704            | 0.098 | 0.137 | 0.037                     | 6.219                 |
| 1991 | 2.817           | 0.494         | 2.068            | 0.486            | 0.087 | 0.091 | 0.036                     | 6.079                 |

<sup>1</sup> 1954–63 includes volume removed as logs but not poles, pilings, or woodcutting operations; 1964–89 includes volume removed as logs, poles, and pilings, but not woodcutting operations.

<sup>2</sup> Includes county and municipal volumes.

<sup>3</sup> Sums may not equal state total because of rounding.

<sup>4</sup> Volume adjusted from short log to long log basis.

<sup>5</sup> Includes forest industry, other private, BLM, state and other public agencies. (Oregon Department of Forestry 1991)

**Appendix Table 4.** Oregon's historic and projected harvest levels by owner class according to the Proposed Plans scenario and implementation of the ISC Conservation Strategy

| Owner Class                     | Annual Average Harvest Levels, 1991–2000<br>(Billion board feet Scribner log rule) |                   |   |                           |                         |
|---------------------------------|--|-------------------|---|---------------------------|-------------------------|
|                                 | 1983-87<br>Harvest   | Proposed<br>Plans | ISC Conservation Strategy on Public Lands With: |                           |                         |
|                                 |  |                   | No Private<br>Response                          | Private Price<br>Response | Private<br>Conservation |
| <b>Public</b>                   |  |                   |   |                           |                         |
| National Forest                 | 3.370  | 2.575             | 2.088   | 2.088                     | 2.088                   |
| BLM                             | 0.951  | 1.019             | 0.397   | 0.397                     | 0.397                   |
| <u>State &amp; Other Public</u> | <u>0.387</u>   | <u>0.440</u>      | <u>0.395</u>                                    | <u>0.395</u>              | <u>0.395</u>            |
| Class Total                     | 4.708  | 4.034             | 2.880   | 2.880                     | 2.880                   |
| <b>Private</b>                  |  |                   |   |                           |                         |
| Industrial                      | 2.952  | 2.755             | 2.755   | 3.057                     | 1.364                   |
| <u>Nonindustrial</u>            | <u>0.360</u>   | <u>0.666</u>      | <u>0.666</u>                                    | <u>0.997</u>              | <u>0.355</u>            |
| Class Total                     | 3.312  | 3.421             | 3.421   | 4.054                     | 1.719                   |
| <b>All Owners</b>               | <b>8.020</b>   | <b>7.455</b>      | <b>6.301</b>                                    | <b>6.934</b>              | <b>4.599</b>            |

(Greber et al. 1990)

**Appendix Table 5.** Percent change in Oregon's wage and salary employment by economic region from 1976 to 1988<sup>1</sup>

| Region &<br>Economic Region | Total      | Timber<br>Industry | Other<br>Manufacturing | Non-<br>manufacturing |
|-----------------------------|------------|--------------------|------------------------|-----------------------|
| ----- (Percent) -----       |            |                    |                        |                       |
| <b>Western Oregon</b>       |            |                    |                        |                       |
| Portland                    | +35        | -22                | +21                    | +41                   |
| Salem                       | +38        | +11                | +24                    | +42                   |
| Northwest                   | +31        | -19                | +81                    | +35                   |
| Linn/Lane                   | +20        | -16                | +36                    | +28                   |
| Roseburg                    | +14        | + 3                | -27                    | +22                   |
| Medford                     | +41        | + 9                | +23                    | +49                   |
| South Coast                 | <u>+ 7</u> | <u>-27</u>         | <u>+83</u>             | <u>+18</u>            |
| Regional Total              | +32        | -12                | +25                    | +38                   |
| <b>Eastern Oregon</b>       | <u>+14</u> | <u>- 2</u>         | <u>+20</u>             | <u>+17</u>            |
| <b>State</b>                | +30        | -10                | +24                    | +36                   |

<sup>1</sup> From Employment Division (1976 and 1988).  
(Greber et al. 1990)

**Appendix Table 6. The decline in the timber-based rural economy**

| Year   | Public Scenario           | Private Scenario    |                        |                      |
|--|---------------------------|---------------------|------------------------|----------------------|
|  |                           | No Private Response | Private Price Response | Private Conservation |
| ------(Thousands of jobs displaced)-----                             |                           |                     |                        |                      |
| 1995   | Proposed Plans            | 7.4                 | 7.4                    | 7.4                  |
|  | ISC Conservation Strategy | <u>16.0</u>         | <u>4.7</u>             | <u>42.1</u>          |
|  | Total Displacement        | 23.4                | 12.2                   | 49.5                 |
| 2005   | Proposed Plans            | 6.4                 | 6.4                    | 6.4                  |
|  | ISC Conservation Strategy | <u>12.0</u>         | <u>17.6</u>            | <u>21.2</u>          |
|  | Total Displacement        | 18.4                | 24.0                   | 27.6                 |
| ---(Millions of 1988 dollars of wage and salary income displaced)--- |                           |                     |                        |                      |
| 1995   | Proposed Plans            | 316                 | 316                    | 316                  |
|  | ISC Conservation Strategy | <u>682</u>          | <u>199</u>             | <u>1,831</u>         |
|  | Total Displacement        | 1,002               | 515                    | 2,147                |
| 2005   | Proposed Plans            | 366                 | 366                    | 366                  |
|  | ISC Conservation Strategy | <u>797</u>          | <u>892</u>             | <u>2,145</u>         |
|  | Total Displacement        | 1,163               | 1,258                  | 2,511                |

(Greber et al. 1990)

**Appendix Table 7. Oregon's funding of local governments by economic region in 1988<sup>1</sup>**

| Region & Economic Region | Schools and Educational Service Districts <sup>2</sup> |                        |                                       | County Government <sup>3</sup> |                        |                                       |
|--------------------------|--|------------------------|---------------------------------------|--------------------------------|------------------------|---------------------------------------|
|                          | Total Funding  | Timber-Derived Funding | Timber-Derived as Proportion of Total | Total Funding                  | Timber-Derived Funding | Timber-Derived as Proportion of Total |
|                          | -----(\$Million)-----                                  |                        | (Percent)                             | -----(\$Million)-----          |                        | (Percent)                             |
| Western Oregon           |  |                        |                                       |                                |                        |                                       |
| Portland                 | 1,153.8  | 3.1                    | 0.3                                   | 374.8                          | 26.8                   | 7.1                                   |
| Salem                    | 250.4  | 1.7                    | 0.7                                   | 62.6                           | 6.8                    | 10.8                                  |
| Northwest                | 200.0  | 6.8                    | 3.4                                   | 56.1                           | 16.1                   | 28.7                                  |
| Linn/Lane                | 343.7  | 12.6                   | 3.7                                   | 134.2                          | 48.0                   | 35.8                                  |
| Roseburg                 | 85.7   | 7.3                    | 8.5                                   | 56.7                           | 36.9                   | 65.0                                  |
| Medford                  | 165.5  | 2.8                    | 1.7                                   | 57.4                           | 27.1                   | 50.7                                  |
| South Coast              | <u>64.8</u>  | <u>2.9</u>             | <u>4.5</u>                            | <u>27.3</u>                    | <u>13.8</u>            | <u>47.2</u>                           |
| Regional Total           | 2,263.5  | 37.2                   | 1.6                                   | 769.1                          | 175.5                  | 22.8                                  |
| Eastern Oregon           | <u>316.3</u>   | <u>12.3</u>            | <u>3.9</u>                            | <u>155.8</u>                   | <u>48.4</u>            | <u>31.1</u>                           |
| State                    | 2,579.8  | 49.5                   | 1.9                                   | 924.9                          | 223.9                  | 24.2                                  |

<sup>1</sup> Corresponds to fiscal year 1988-1989.

<sup>2</sup> From data supplied by Oregon Department of Education, Office of School District Services, School Finance and Data Information Services. Severance tax information provided by county tax offices.

<sup>3</sup> From data supplied by county tax offices.

(Greber et al. 1990)



Extension Service, Oregon State University, Corvallis, O.E. Smith, director. This publication was produced and distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914. Extension work is a cooperative program of Oregon State University, the U.S. Department of Agriculture, and Oregon counties.

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