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Timber Resource Statistics for the North Coast Resource Area of California, 1994

Karen L. Waddell and Patricia M. Bassett

Authors

KAREN L. WADDELL is a research forester and PATRICIA M. BASSETT is a programmer-analyst (retired), Forestry Sciences Laboratory, P.O. Box 3890, Portland, OR 97208-3890.

Cover

The image on the cover was created from the North American 30 arc-second Digital Elevation Model obtained from the EROS Data Center in Sioux Falls, SD.

Abstract

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This report is a summary of timber resource statistics for the North Coast Resource Area of California, which includes Del Norte, Humboldt, Mendocino, and Sonoma Counties. Data were collected by the Pacific Northwest Research Station as part of a State-wide multi-resource inventory. The inventory sampled private and public lands except reserved areas and National Forests. The National Forest System provided data from regional inventories of North Coast National Forests. Area information for parks and other reserves was obtained directly from the organizations managing these areas. Statistical tables summarize all ownerships and provide estimates of land area, timber volume, growth, mortality, and harvest. Estimates of periodic change of volume and area on timberland are presented for all ownerships outside National Forests.

Keywords: Forest surveys, forest inventory, statistics (forest), timber resources, resources (forest), periodic change, trends, North Coast, Del Norte County, Humboldt County, Mendocino County, Sonoma County, California.

Summary

The North Coast Resource Area of California includes about 6 million acres of land in Del Norte, Humboldt, Mendocino, and Sonoma Counties. Over 75 percent of this land is forest land, with an estimated 3.4 million acres in timberland. Forest industry and other private owners each hold about 40 percent of the timberland, for a total of 80 percent that is privately owned. Redwood, Douglas-fir, and tanoak forest types predominate in the North Coast Resource Area. Softwood and hardwood forest types occupy about the same amount of land area, but softwood growing stock volume is 2.5 times greater than hardwood volume. Most of the 13.7 billion cubic feet of volume in the North Coast Resource Area is in softwood forest types growing in stands of sawtimber-sized trees. The majority of volume outside National Forests is found in even-aged stands between 30 and 70 years old, compared to National Forests where most stands exceed 150 years. Estimates of change between 1984 and 1994 are available for land outside National Forests. Data from both points in time were compiled by using current methods and procedures, thereby providing a common basis to evaluate periodic change (this is more accurate than using previously published data for 1984 as a comparison for change). An analysis of change indicates that timberland area has decreased by almost 111,000 acres. Part of this loss is due to conversion from forest to nonforest; specifically, 21,000 acres went to urban areas, a net of 17,000 acres went to rights-of-way, and a net of 9,000 acres went to agriculture use. The remaining timberland loss is due to the reclassification of 64,000 acres to a reserved status. During this period, timberland area (outside National Forests) occupied by soft wood forest types was reduced by an estimated 106,000 acres, primarily in the redwood type. This type change was the result of harvesting and mortality of soft woods on plots previously classified as a softwood forest type. Standing volume within softwood types decreased by about 400 million cubic feet, and volume in hardwood types increased by an estimated 900 million cubic feet (about 25 per cent). The standing growing-stock volume of softwood trees remained steady on land outside National Forests, but hardwood volume increased by about 500 million cubic feet (about 16 percent), for the period.

Preface

Forest Inventory and Analysis (FIA) is a nationwide project of the USDA Forest Service authorized by the Forest and Rangeland Renewable Resources Research Act of 1978. Work units, located at Forest Service research and experiment stations, conduct forest resource inventories throughout the 50 States. The Pacific Resource Inventory, Monitoring, and Evaluation program (PRIME) of the Pacific Northwest Research Station at Portland, Oregon, is responsible for forest inventories in Alaska, California, Hawaii, Oregon, and Washington.

Contents

iv **List of Tables**

vi **Map of California and the North Coast**

1 **Introduction**

2 **Inventory Procedures**

2 Land Outside National Forests

2 National Forest Land

3 **Changes in Definitions and Techniques**

3 Land and Water Area Updated

3 Change in Ownership Definitions

3 Modified Sampling Design

4 Classifying Stand Characteristics on Timberland Plots

5 **Analysis of Change Between Inventories on Lands Outside National Forests**

6 **Reliability of Inventory Data**

8 Data Quality

8 **Terminology**

14 **Names of Trees**

16 **Tables**

49 **Acknowledgments**

49 **Metric Equivalents**

49 **Literature Cited**

50 **Appendix A**

50 **Appendix B**

List of Tables

Table 1--Land area by county, land class, and administrative status, North Coast Resource Area, California, 1994

Table 2--Area of reserved timberland, withdrawn timberland, and other forest land, by forest type, North Coast Resource Area, California, 1994

Table 3--Area of timberland by county and owner class, North Coast Resource Area, California, 1994

Table 4--Area of timberland by forest type and owner class, North Coast Resource Area, California, 1994

Table 5--Area of timberland by owner class, stand-size class, and forest type group, North Coast Resource Area, California, 1994

Table 6--Area of timberland by cubic-foot site class and owner class, North Coast Resource Area, California, 1994

Table 7--Area of timberland by forest type and stand-size class, North Coast Resource Area, California, 1994

Table 8--Number of live trees on timberland outside National Forests, by species and diameter class, North Coast Resource Area, California, 1994

Table 9--Number of growing-stock trees on timberland outside National Forests, by species and diameter class, North Coast Resource Area, California, 1994

Table 10--Net volume of growing stock on timberland, by species and diameter class, North Coast Resource Area, California, 1994

Table 11--Net volume of sawtimber on timberland, by species and diameter class, North Coast Resource Area, California, 1994

Table 12--Net volume of growing stock on timberland, by species and owner class, North Coast Resource Area, California, 1994

Table 13--Net volume of sawtimber on timberland, by species and owner class, North Coast Resource Area, California, 1994

Table 14--Net volume of growing stock on timberland, by forest type and stand-size class, North Coast Resource Area, California, 1994

Table 15--Net volume of sawtimber on timberland, by forest type and stand-size class, North Coast Resource Area, California, 1994

Table 16--Net volume of growing stock on timberland, by forest type and owner class, North Coast Resource Area, California, 1994

Table 17--Net volume of sawtimber on timberland, by forest type and owner class, North Coast Resource Area, California, 1994

Table 18--Volume of timber on timberland by class of timber, owner group, and species group, North Coast Resource Area, California, 1994

Table 19--Current net annual growth of growing stock on timberland, by forest type and owner class, North Coast Resource Area, California, 1994

Table 20--Current net annual growth of sawtimber on timberland outside National Forests, by forest type and owner class, North Coast Resource Area, California, 1994

Table 21--Average annual mortality of growing stock on timberland, by forest type and owner class, North Coast Resource Area, California, 1994

Table 22--Average annual mortality of sawtimber on timberland outside National Forests, by forest type and owner class, North Coast Resource Area, California, 1994

Table 23--Land area by county and land class (metric), North Coast Resource Area, California, 1994

Table 24--Area of timberland by owner class and stand-size class (metric), North Coast Resource Area, California, 1994

Table 25--Area of reserved timberland and other forest land, by forest type and owner class, North Coast Resource Area, California, 1994

Table 26--Area, net volume of growing stock, and net volume of sawtimber on timberland, by stand age and owner class, North Coast Resource Area, California, 1994

Table 27--Volume of growing stock and sawtimber on timberland, by county, owner class, and species, North Coast Resource Area, California, 1994

Table 28--Current net annual growth, average annual mortality, and average annual removals of growing stock on timberland, by species and owner, North Coast Resource Area, California, 1994

Table 29--Current net annual growth, average annual mortality, and average annual removals of sawtimber on timberland outside National Forests, by species and owner class, North Coast Resource Area, California, 1994

Table 30--Changes in timberland area outside National Forests, by owner class, North Coast Resource Area, California, 1984, 1994

Table 31--Changes in volume of growing stock on timberland outside National Forests, by species group and owner class, North Coast Resource Area, California, 1984, 1994

Table 32--Changes in volume of sawtimber on timberland outside National Forests, by species group and owner class, North Coast Resource Area, California, 1984, 1994

Table 33--Area, volume of growing stock, and volume of sawtimber on timberland outside National Forests, by forest type, North Coast Resource Area, California, 1984,1994

Table 34--Volume of growing stock and volume of sawtimber on timberland outside National Forests, by species and year, North Coast Resource Area, California, 1984,1994

Table 35--Timber harvest volume by county and year, North Coast Resource Area, California, 1947-77

Table 36--Timber harvest volume by county, year, and owner group, North Coast Resource Area, California, 1978-94

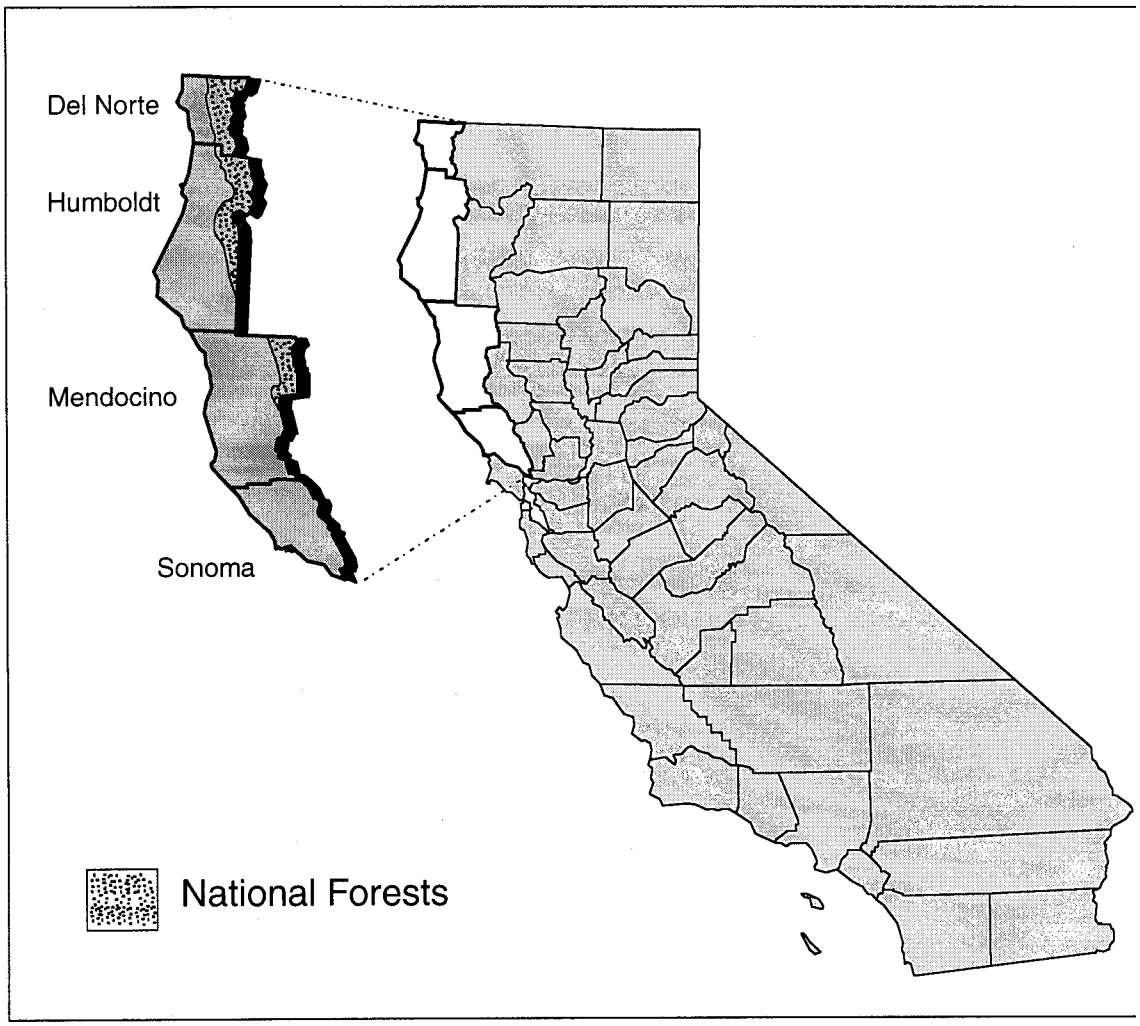

Figure 1—Counties in the North Coast Resource Area of California.

Introduction

A multi-resource inventory was conducted in California's forests from 1991 to 1994. The inventory area consists of all land except reserved areas and public land administered by the National Forest System. Information about parks and other reserved areas was obtained directly from the organizations managing these areas. This report summarizes timber resource statistics for the four counties in the North Coast Resource Area (fig. 1). Statistical tables include data supplied by the National Forest System for both area and volume and provide a complete assessment of current timber resources across all ownerships.

Other resources sampled in this inventory included the oak woodlands, chaparral, standing snags, coarse woody debris, shrubs, and herbs.

The Pacific Resource Inventory, Monitoring, and Evaluation Program (PRIME) in the Pacific Northwest Research Station has been responsible for doing forest inventories on land outside National Forests in California since 1966. The earliest inventory carried out by the Pacific Northwest Research Station for the North Coast was reported by Oswald (1968, 1972), Oswald and Walton (1966), and Bolsinger (1980). A second forest inventory was completed by 1984 (Lloyd and others 1986). Data collection for the most recent inventory of the North Coast Resource Area was conducted from 1991 to1994. Earlier inventories were conducted by the Pacific Southwest Research Station in the 1930s, 1953, and 1963.

This report incorporates data supplied by the National Forest System for the Six Rivers and Mendocino National Forests, administered by the Pacific Southwest Region (Region 5), and a small portion of the Siskiyou National Forest, administered by the Pacific Northwest Region (Region 6). Only National Forest area that falls within the four North Coast counties is included in this report.

The 36 statistical tables that follow provide current estimates of land area, timber volume, net annual growth and mortality, and harvest. Tables 30 through 34 provide estimates of change in timberland area and volume between the 1981-84 inventory and the 1991-94 inventory for land outside National Forests. For consistency, PRIME data from the 1981-84 inventory were recompiled from the re-measured portions of the 1981-84 inventory plots, with current expansion factors. This will reflect new or modified procedures, definitions, and standards adopted in the current inventory. Tables 30 through 34 can be used to make comparisons between inventories on land outside National Forests.

Inventory Procedures

Land Outside National Forests

The North Coast Resource Area was inventoried with a double sampling for stratification design (Cochran 1977) on permanent, systematic grids. These grids produce an even geographic distribution of field and photo plots across the State and maintain an equal sampling intensity across counties. Photo plots for the primary sample were chosen by randomly selecting a point inside each square of the grid.

In the North Coast Resource Area, the primary sample was a grid of 10,521 photo plots established during the 1981-84 inventory and re-examined in 1991 by using aerial photographs taken in 1988. Data collected on each photo plot include the owner class, land class, and the degree of commercial or residential development (see appendix A). The 6,682 timberland photo plots were further examined to classify the forest stand at the grid location. These plots were stratified by disturbance and timber volume.

The secondary sample consisted of 648 forest and non-forest field plot locations established in the previous inventory and reclassified or re-measured in 1991-94. These plots subsampled about every 16th photo plot on the primary grid. This ratio of 1 field to 16 photo plots provides a sufficient number of plots to meet the required sampling precision for estimates of forest area and volume. All 380 timberland plot locations were re-measured.

Permanent five-subplot field plots were installed at timberland grid locations during the 1981-84 inventory (see appendix A). At that time, all five subplots sampled a single homogeneous condition, by moving subplots into the condition if necessary. Variable-radius sampling was used to select trees 7 to 36 inches in diameter at breast height (d.b.h.) on a subplot. Trees of all other diameters were selected with fixed-radius plots.

In 1991, the sampling design was modified to remove the potential for bias inherent in the 1981-84 procedures. The term "condition class" was defined for the modified design to identify different situations that could occur on a plot. A condition class, or "condition," refers to an area with a distinct land class (timberland, oak woodland, non-forest, etc.) and vegetative condition (forest type, stand structure, etc.). The modified design requires that field plots maintain fixed locations for all subplots in the cluster, regardless of the conditions found on the plot. Plots that straddle two or more conditions now sample all conditions by establishing each subplot in the designated position and mapping the boundaries around each condition. Tree selection procedures were identical to those used in the previous inventory. Data for each condition on a plot are kept separate and compiled as "condition class plots." On the 648 field plots in the 1991-94 inventory, we sampled 1,015 condition classes, of which 474 were timberland.

Current estimates of area for timberland, other forest, and non-forest land are based on all 1,015 condition class plots. Tree data on timberland conditions are used to estimate timber volume, growth, mortality, and removals and to determine stand characteristics such as forest type, stand size, and stand age by condition class.

Estimates of change in area and volume were compiled from data on subplots installed in 1981-84 that were in the same location in 1991-94. Subplots that were offset slightly in the previous inventory to ensure that the entire subplot fell in one condition also were re-measured to analyze for change. All other subplots that were moved more than 56 feet in the 1981-84 inventory were not re-measured.

For more information about field, photo-interpretation, or technical procedures (including volume and stocking equations, design discussion, and specific methods used in the compilation of data), see appendix A.

National Forest Land

The Pacific Southwest Region (Region 5) supplied the most recent data available from regional timber resource databases for the Six Rivers and Mendocino National Forests. Because the data were collected in different years, the Region provided updating factors to adjust all data to 1992. Data for the Siskiyou National Forest were extracted primarily from the national timber inventory database developed for the 1992 Resources Planning Act (RPA) assessment. Information about the details of National Forest inventories may be obtained from the timber management staff at each Regional office (see appendix B).

Changes in Definitions and Techniques

In 1991-94, a number of changes were made in the definitions and techniques used in the 1981-84 inventory. The most notable differences are adoption of new area figures from the latest Bureau of Census report (U.S. Department of Commerce 1990); a change in the ownership definition for Native American lands; a modified sampling design; and a different method to classify stand characteristics, such as forest type, on timberland plots.

Land and Water Area Updated

The Bureau of Census compiles and publishes the area of land and water in the United States every 10 years. These area figures, available by county, are accepted by PRIME as the gross number of acres to be inventoried in each county.

The previous inventory was based on 1980 census data, and the current inventory uses 1990 census figures. Raster-scanned U.S. Geological Survey topographic maps and a geographic information system are now used by the Bureau of Census to precisely identify water bodies and landforms and to determine the size of much smaller areas than was possible previously. As a result, the definition of inland water was changed to reflect the finer resolution: streams with a minimum width of 200 feet are now recognized compared to 660 feet in 1980; and small water bodies are now at least 4.5 acres in size compared to 40 acres in the past.

The new numbers and change in definitions caused a shift in gross area between land and water in California and affected the distribution of area among the counties. According to the 1990 census, total land area decreased by 23,488 acres in the North Coast Resource Area. This has a direct impact on the size of the inventory area and the expansion factors (acres) associated with each plot.

Change in Ownership Definitions

Lands owned by Native Americans are now classified as "other private." In 1981-84, these lands were defined as "other public." Although there has been no real change in definition, "forest industry" is no longer divided into the two categories published in the past: "forest industry with mills" or "forest industry without mills."

Modified Sampling Design

The sampling design adopted for the current inventory of California had a significant impact on the plot layout, the compilation of data, and the development of data for periodic change analysis. In the new plot layout, all five subplots were established in fixed positions and all conditions on a plot were sampled. New subplots were installed in 1991-94 to replace previously moved subplots from the 1981-84 inventory. Only data collected on subplots in the fixed layout pattern of the modified design were included in estimates of current area and volume for 1991-94.

Plots that cross condition class boundaries contain information and measurements that pertain to each condition. When multiple conditions exist on a plot, all data in one condition are processed together, which divides the plot into two or more condition class plots. This can impact the amount of information present for classifications done at the new condition class plot level. Stand characteristics such as forest type, stand-size, and stand age may be affected if the condition class area is small.

Because the modified design samples all conditions on a plot, more information is now available on land classes and other conditions that might not have been sampled as thoroughly in the previous inventory. The 1981-84 design forced all

subplots to sample the condition found at the center of the first subplot. Less prevalent conditions, such as riparian areas, might not be found as often at the plot center because of the small land area occupied. The current design samples these areas as they are encountered on a plot and should improve the precision of estimates for these areas.

Although five-subplot plots were established at both inventories, the locations may not coincide, thereby affecting the number of subplots available for re-measurement. Subplots installed in the previous inventory that were moved more than 56 feet were not re-measured in 1991-94. Because of this, re-measured plots can contain less than five subplots or include less than 100 percent of the plot area.

An outcome of the modified design is two databases containing different sets of condition class plots-one set contains all conditions and is used to produce current estimates of area and volume for 1991-94, and the second set contains only re-measured subplots and conditions on a plot and is used to produce estimates of change between inventories. Because re-measured subplots are in the same condition at both inventories, each plot in the "change" database contains only one condition and may have a different expansion factor compared to the current database. Thus, current inventory estimates from the "change" database differ slightly from those based on the new sample. The differences are a result of sampling error. The "current" database is more reliable for estimates of the current status of resources in 1991-94 but is less reliable for estimating periodic change, because it includes data not sampled in the earlier inventory.

Classifying Stand Characteristics on Timberland Plots

Stand characteristics such as forest type, stand-size, and stand age are calculated from tree information on a plot. In the previous inventory, these characteristics were assigned by computing the relative proportion of basal area among trees of different species, d.b.h., or age. In the current inventory, a technique was adopted that compares the individual contribution of each tree to the density of a normal stand (MacLean 1979). This method is based on area occupancy and reflects the ability of a tree to use the limited resources of a site (light, water, nutrients). Species with large crowns, for example, can intercept more light and water and will occupy a larger percentage of the site.

MacLean (1979) compares existing stand density to the density shown in normal yield tables for the same species and quadratic mean diameter (QMD). Stocking equations were developed based on the relation between tree diameter and the average growing space occupied by trees in normal stands. Stocking estimates are adjusted for species, tree clumping, QMD, crown position, and stockability of the site. In 1991-94, stocking estimates were used to determine the stand characteristics of a plot, which in some cases, produced different results from the basal area method used in the past. Hardwood species with broad crowns generally occupy a larger proportion of a site and receive larger stocking estimates. As a result, stand classifications, such as forest type, changed on some plots compared to the 1981-84 inventory, simply due to the change in procedure. This is one reason why the 1981-84 data must be recompiled before reliable comparisons can be made with current inventory data.

To illustrate differences due to procedural changes, a summary table was created that contains three major forest types, calculated with both methods–basal area and stocking. The shift between hardwood and softwood types is apparent. For example, when the 1984 data are recompiled with the stocking method of the current design, the area of Douglas-fir and redwood forest types is smaller than that calculated with the basal area method, while the tanoak area is larger:[1]

Timberland area outside National Forests by major forest type, classification technique, and inventory cycle, 1981-84 and 1991-94 (re-measured plots only)

	1981-84 classification technique		1991-94 classification technique	
Forest type	**Stocking**	**Basal area**	**Stocking**	**Basal area**
	Thousand acres			
Douglas-fir	457	496	477	575
Redwood	785	931	673	889
Tanoak	861	744	877	708

To properly analyze the inventory for trends, data from both inventories were compiled with the same classification technique.

Analysis of Change Between Inventories on Lands Outside National Forests

Comparisons of statistics from this report with those published for the 1981-84 inventory of the North Coast Resource Area (Lloyd and others 1986) are unreliable because they are obscured by sampling error as well as definition or procedural changes. Instead, the reader should use summaries of recompiled 1981-84 data that take into account the technical changes made in the 1991-94 inventory. Tables 30 to 34 have been developed from re-measured plots on land outside National Forests and include recompiled 1981-84 data. An analysis of data in these tables will provide reliable estimates of area and volume at both inventories. Note that all tables displaying periodic change do not include National Forest data, because data from earlier inventories have not been recompiled to reflect real change over the period.

Tables 30, 31, and 32 show changes in timberland area and volume on ownerships other than National Forests in the period between the 1981-84 and 1991-94 inventories. Table 33 displays the change in area and volume by forest type, and table 34 presents volume by species for both inventories. All estimates were computed directly from the sample-based inventory data and are subject to sampling error.

Other tables of recompiled 1981-84 data for land outside National Forests are available by request.

[1] See "Names of Trees" for a list of scientific names for all tree species.

Reliability of Inventory Data

Standard errors for the estimated area, cubic-foot volume, and net annual cubic-foot growth and mortality for the North Coast Resource Area, outside National Forests, are shown below. Confidence intervals can be calculated at the 68-percent probability level by using this information.

Inventories conducted by PRIME are designed to provide sampling errors consistent with national standards set by the USDA Forest Service. The allowable error for total timberland area is 3 percent per million acres; 10 percent per million acres for all other land area; and 10 percent per billion cubic feet of growing stock volume.

Confidence intervals are quantitative expressions of the reliability of the statistics for area and volume. The tabulation below indicates, for instance, a two-in-three (68-percent, one standard error) chance that the timberland area estimate for all non-National Forest owners (2,878 thousand acres) is within the range of 2,831 to 2,925 thousand acres.

The sample design in this inventory is set up to provide the highest precision when estimates are aggregated for the entire North Coast Resource Area. As the sample is divided into smaller units, the confidence interval gets broader. For example, estimates of area by forest type for one county are less precise than the estimate of forest type for the whole resource area.

Standard errors for estimates of land area, by land class and owner class outside National Forests, are displayed below:

Land class	Other public	Forest industry	Other private	All owners
	Thousand acres (± standard error)			
Timberland	140 ± 16	1,402 ± 39	1,336 ± 52	2,878 ± 47
Other forest	76 ± 10	59 ± 10	545 ± 41	679 ± 43
Nonforest	60 ± 16	140 ± 20	1,188 ± 44	1,388 ± 43
Total	276 ± 23	1,600 ± 41	3,069 ± 45	4,946 ± 1

Standard errors for estimates of land area and volume, by county, outside National Forests, are displayed below:

County	Timberland area	Softwood species volume	Hardwood species volume	Total volume
	Thousand acres (± standard error)	*Million cubic feet (± standard error)*		
Del Norte	163 ± 11	279 ± 73	156 ± 53	435 ± 98
Humboldt	1,225 ± 26	3,364 ± 327	1,539 ± 125	4,903 ± 340
Mendocino	1,187 ± 34	2,578 ± 221	1,531 ± 115	4,108 ± 242
Sonoma	303 ± 22	869 ± 191	345 ± 46	1,214 ± 199

Standard errors for estimates of timber volume, growth, and mortality, by species or forest type group and owner class, on timberland outside National Forests are shown on opposite page.

Volume by species or forest type	Other public	Forest industry	Other private	All owners
		Million cubic feet (volume ± standard error)		
Net volume:				
Softwood species	700 ± 168	3,764 ± 348	2,626 ± 244	7,091 ± 437
Hardwood species	168 ± 37	1,414 ± 116	1,989 ± 152	3,571 ± 181
Total	868 ± 176	5,179 ± 365	4,615 ± 301	10,661 ± 461
Net volume:				
Softwood forest types	761 ± 197	3,279 ± 388	2,085 ± 283	6,124 ± 509
Hardwood forest types	107 ± 45	1,892 ± 196	2,526 ± 221	4,524 ± 285
Total [2]	868 ± 176	5,179 ± 365	4,615 ± 301	10,661 ± 461
		Thousand cubic feet (volume ± standard error)		
Net annual growth volume:				
Softwood forest types	18,417 ± 4,555	114,835 ± 12,880	58,089 ± 7,593	191,341 ± 15,443
Hardwood forest types	1,865 ± 809	70,653 ± 7,652	67,978 ± 5,726	140,496 ± 9,265
Total [2]	20,282 ± 4,147	186,206 ± 11,959	126,289 ± 7,826	332,777 ± 13,944
Net annual mortality volume:				
Softwood forest types	2,012 ± 633	10,427 ± 1,320	8,648 ± 1,530	21,123 ± 2,092
Hardwood forest types	795 ± 377	10,118 ± 1,154	14,746 ± 1,626	25,659 ± 1,971
Total [2]	2,806 ± 585	20,553 ± 1,447	23,459 ± 2,000	46,819 ± 2,396

[2] Volume of the nonstocked forest type is included in the total.

Standard errors have been calculated for all tabular data in this report and are available on request from the Pacific Resource Inventory, Monitoring, and Evaluation Program, Pacific Northwest Research Station, Forestry Sciences Laboratory, P.O. Box 3890, Portland, Oregon 97208-3890.

Data Quality

To ensure that data collection procedures and techniques used in the field were understood and implemented consistently, field crews attended a 2-week intensive training session. The use of equipment was demonstrated, and tolerance limits for measurements were explained. The accuracy of field measurements and classifications was monitored by inspecting about 10 percent of the field plots. Tree measurements, classifications, and plot layout were repeated on the plot. Each person's work was audited about five times during the field season. If consistent errors were detected, crews were informed and retrained as necessary.

Data were edited extensively by using computer programs in both the field and the office. The edits checked for reasonableness of tree measurements in relation to other measurements on the tree. Questionable data were sent back to the field for verification, and data were corrected as necessary.

Terminology

Class of timber-A classification of trees as growing stock, cull, and salvable dead. Growing-stock trees are divided into poletimber and sawtimber trees.

Condition class-A mapped area on a plot with a distinct land class (timberland, oak woodland, non-forest, etc.) and vegetative condition (forest type, stand size, etc.). The first condition identified at plot center is the only condition that is re-measured and used for the analysis of periodic change.

County and municipal lands-Lands owned by county and other local public agencies.

Cull trees-Live trees of noncommercial species, and live trees of commercial species that are more than 75 percent defective. Noncommercial species are junipers, gray pine, Pacific yew, Pacific dogwood, apple, and willow.

Cull trees, rotten-Cull trees with defect caused primarily by rot.

Cull trees, sound-Trees of noncommercial species or cull trees of commercial species with defect caused primarily by poor form and roughness.

Diameter class-A classification of trees based on diameter outside the bark measured at breast height, 4-1/2 feet above the ground. D.b.h. is the common abbreviation for diameter at breast height. Trees are grouped into 2-inch classes up to 21 inches d.b.h., after which the class intervals become broader.

Even-aged stands-Stands where 70 percent or more of the tree stocking falls within three adjacent 10-year age classes.

Farmer-owned lands-Lands owned by the operators of farms.

Forest industry lands-Lands owned by companies that grow timber for industrial use. Includes companies both with and without wood processing plants.

Forest land-Land at least 10 percent stocked with live trees, or land that had this minimum tree stocking in the past and is not currently developed for non-forest use. The minimum area recognized is 1 acre.

Forest types-Stands are assigned a pure softwood, pure hardwood, softwood-hardwood mix, hardwood-softwood mix, or mixed-conifer forest type. Stands with 70 percent or more of the stocking in live softwood trees are classified as pure softwood types and are assigned the type name of the softwood species with the greatest stocking among all softwoods on the condition class plot. Stands with 70 percent or more of the stocking in live hardwood trees are classified as pure hardwood types and are assigned the type name of the hardwood species with the greatest stocking among all hardwoods on the condition class plot. Mixed species types are assigned if softwood stocking is between 31 to 69 percent total stocking on the plot: stands with 50 to 69 percent of the stocking in live softwood trees are classed as softwood-hardwood types, and receive a type name that includes the softwood species with the greatest softwood stocking, followed by the hardwood species with the greatest hardwood stocking; stands with 51 to 69 percent of the stocking in live hardwood trees are classed as hardwood-softwood types, and receive a type name that includes the hardwood species with the greatest hardwood stocking, followed by the softwood species with the greatest softwood stocking. If a softwood forest type is one of the following species-sugar pine, ponderosa pine, Jeffrey pine, incense-cedar, Douglas-fir, white fir, or red fir-the plot is examined to determine if it is a mixed-conifer type (see appendix A, item 3, for a procedural reference).

Growing-stock trees-All live trees except cull trees.

Growing-stock volume-Net volume in cubic feet of live sawtimber and poletimber growing-stock trees from the top of a stump 12 inches tall to a minimum 4-inch top (of central stem) outside the bark. Net volume is gross volume less deductions for rot and missing bole sections.

Growth, current net annual, growing-stock-The increase in growing-stock volume during the last year in the period between the previous and current inventories. Components of current net annual growth for growing-stock volume include (a) the increment in net volume of poletimber and sawtimber growing-stock trees alive at the beginning of the year and surviving to year end; plus (b) ingrowth, the net volume of growing-stock trees reaching poletimber or sawtimber size during the year; minus (c) mortality, the net volume of poletimber and sawtimber growingstock trees that died during the year.

Growth, current net annual, sawtimber-The increase in sawtimber volume during the last year in the period between the previous and current inventories. Components of current net annual growth for sawtimber volume include (a) the increment in net volume of sawtimber trees alive at the beginning of the year and surviving to year end; plus (b) ingrowth, the net volume of trees reaching sawtimber size during the year; minus (c) mortality, the net volume of sawtimber trees that died during the year.

Growth, periodic gross, growing-stock-The increase in growing-stock volume between the previous and current inventories that is attributable to increasing tree size. Periodic gross growth includes (a) the increment in net volume of poletimber and sawtimber growing-stock trees alive at the both the previous and current inventories; (b) the increment in net volume of poletimber and sawtimber growingstock trees alive at the previous inventory and harvested between inventories; and (c) ingrowth, the net volume of growing-stock trees reaching poletimber or sawtimber size between inventories.

Growth, periodic gross, sawtimber-The increase in sawtimber volume between the previous and current inventories that is attributable to increasing tree size. Periodic gross growth includes (a) the increment in net volume of sawtimber trees alive at both the previous and current inventories; (b) the increment in net volume of sawtimber trees alive at the previous inventory and harvested between inventories; and (c) ingrowth, the net volume of trees reaching sawtimber size between inventories.

Hardwoods-Nonconiferous trees, usually broad-leaved. See "Names of Trees" for a list of hardwood species in this report.

Industrial wood-All commercial roundwood products except fuelwood. Roundwood includes logs or belts that are in straight sections at least 8 feet long for hardwoods and 12 feet long for softwoods.

Land area-Area reported as land by the Bureau of the Census (U.S. Department of Commerce 1990). Total land area includes dry land and land temporarily or partially covered by water such as marshes, swamps, and river flood plains; streams, sloughs, and canals less than 200 feet wide; and lakes, reservoirs, and ponds less than 4.5 acres in area.

Land class-A classification of land by major use. The minimum area for classification is 1 acre.

Mean annual increment at culmination-A measure of the productivity of forest land expressed as the average increase in cubic-foot volume per acre per year. For a given species and site index, the mean is based on the age at which the mean annual increment culminates for fully stocked natural stands.

Miscellaneous Federal lands-Federal lands other than lands administered by the Forest Service.

Miscellaneous private owners-All private owners not otherwise classified.

Mortality, average annual, growing stock-The annual net volume of poletimber and sawtimber growing-stock trees that died between the previous and current inventories.

Mortality, average annual, sawtimber-The annual net volume of sawtimber trees that died between the previous and current inventories.

Mortality, periodic, growing stock-The net volume of poletimber and sawtimber growing-stock trees that died between the previous and current inventories.

Mortality, periodic, sawtimber-The net volume of sawtimber trees that died between the previous and current inventories.

National Forest lands-Federal lands that have been designated by Executive Order or statute as National Forest or purchase units and other lands under the administration of the Forest Service, U.S. Department of Agriculture, including experimental areas and Bankhead-Jones Title III lands.

Native American lands-Tribal and allotted lands held in trust by the Federal Government. Native American lands are grouped with farmer and miscellaneous private lands as other private lands.

Net volume-Gross volume less deductions for sound and rotten defects. Growing-stock net volume is gross cubic-foot volume less deductions for rot and missing bole sections on poletimber and sawtimber growing-stock trees. Sawtimber net volume is gross board-foot volume less deductions for rot, sweep, crook, missing bole sections and other defects that affect the use of sawtimber trees for lumber.

Noncommercial species-A tree species not suitable for industrial wood products: junipers, gray pine, Pacific yew, Pacific dogwood, apple, and willow.

Non-forest land-Land that has never supported forests or formerly was forested and currently is developed for nonforest uses. Included are lands used for agricultural crops, Christmas tree farms, improved pasture, residential areas, city parks, constructed roads, operating railroads and their right-of-way clearings, powerline and pipeline clearings, streams more than 30 feet wide, and 1- to 40-acre areas of water classified by the Bureau of the Census, U.S. Department of Commerce, as land. If intermingled in forest areas, unimproved roads and other non-forest strips must be more than 120 feet wide, and clearings or other areas must be 1 acre or larger to qualify as non--forest land.

Non-stocked areas-Timberland less than 10 percent stocked with live trees. Recent clearcuts are classified as non-stocked area.

Other forest land-Forest land incapable of growing 20 cubic feet per acre per year (mean annual increment at culmination in fully stocked, natural stands) of industrial wood because of adverse conditions such as sterile soils, dry climate, poor drainage, subalpine sites, steepness, or rockiness.

Other private lands-Private lands not owned by forest industry. Native American lands, farmer-owned lands, and miscellaneous private lands are included.

Other public lands-Lands administered by public agencies other than the U.S. Department of Agriculture, Forest Service. Other public lands do not include Native American lands, which are included with other private lands.

Poletimber stands-Stands with a mean diameter (weighted by basal area) from 5.0 to 9.0 inches at breast height if a softwood stand and from 5.0 to 11.0 inches at breast height if a hardwood stand.

Poletimber trees-Live growing-stock trees of commercial species that are 5.0 inches in d.b.h. or larger but smaller than sawtimber trees.

Removals, average annual, growing stock-The annual net volume of poletimber and sawtimber growing-stock trees removed by cutting, bulldozing, girdling, or poisoning between the previous and current inventories. Includes timber removed by harvesting, silvicultural activities, and land clearing. Removals are estimated from data collected on field plots in the inventory and not from information in State harvesting records.

Removals, average annual, sawtimber-The annual net volume of sawtimber trees removed by cutting, bulldozing, girdling, or poisoning between the previous and current inventories. Includes timber removed by harvesting, silvicultural activities, and land clearing. Removals are estimated from data collected on field plots in the inventory and not from information in State harvesting records.

Removals, periodic, growing stock-The net volume of poletimber and sawtimber growing-stock trees removed by cutting, bulldozing, girdling, or poisoning between the previous and current inventories. Includes timber removed by harvesting, silvicultural activities, and land clearing. Removals are estimated from data collected on field plots in the inventory and not from information in State harvesting records.

Removals, periodic, sawtimber-The net volume of sawtimber trees removed by cutting, bulldozing, girdling, or poisoning between the previous and current inventories. Includes timber removed by harvesting, silvicultural activities, and land clearing. Removals are estimated from data collected on field plots in the inventory, and not from information in State harvesting records.

Reserved other forest-Forest land incapable of growing 20 cubic feet per acre per year (mean annual increment at culmination in fully stocked, natural stands) of industrial wood and withdrawn from timber utilization through statute, ordinance, or administrative order.

Reserved timberland-Forest land capable of growing 20 cubic feet or more per acre per year (mean annual increment at culmination in fully stocked, natural stands) of industrial wood and withdrawn from timber utilization through statute, ordinance, or administrative order.

Roundwood-Logs, bolts, or other round sections cut from trees.

Sapling and seedling stands-Stands with a mean diameter (weighted by basal area) less than 5.0 inches at breast height.

Sapling and seedling trees-Live trees of commercial species that are less than 5.0 inches in d.b.h. and have no diseases, defects, or deformities likely to prevent their becoming poletimber trees.

Saw-log portion-The bole of sawtimber trees between the stump and the sawlog top. Saw-log top is 7.0 inches in diameter outside bark on softwoods and 9.0 inches in diameter outside bark on hardwoods.

Sawtimber stands-Stands with a mean diameter (weighted by basal area) larger than 9.0 inches at breast height if a softwood stand and larger than 11.0 inches at breast height if a hardwood stand.

Sawtimber trees-Live softwood trees of commercial species at least 9.0 inches in d.b.h. and live hardwood trees of commercial species at least 11.0 inches in d.b.h. At least 25 percent of the board-foot volume in a sawtimber tree must be free from defect. Softwood trees must contain at least one 12-foot saw log with a top diameter of not less than 7 inches outside bark; hardwood trees must contain at least one 8-foot saw log with a top diameter of not less than 9 inches outside bark.

Sawtimber volume-Net volume of sawtimber trees measured in board feet. Net sawtimber volume equals gross volume less deduction for rot, sweep, crook, and other defects that affect use for lumber.

Scribner rule-The common board-foot log rule used locally in California in determining volume of sawtimber. Scribner volume is estimated in terms of 16-foot logs for both softwoods and hardwoods.

Site class-A classification of the potential productivity of forest land expressed as mean annual increment (MAI) at culmination, in fully stocked natural stands. Six classes in this report are based on a range of MAI values that were calculated on every plot.

Site index-A measure of the productivity of forest land expressed as the average height of dominant and co-dominant trees at a specified age.

Softwoods-Coniferous trees, usually evergreen, with needles or scale-like leaves. See "Names of Trees" for a list of softwood species in this report.

Stand age-The 10-year age class that best characterizes the stand. See "even-aged stand" and "uneven-aged stand" for more details.

Stand-size class-A classification of stands based on tree size. Stand-size classes are sawtimber, poletimber, and sapling-seedling stands.

State lands-Lands owned by States or administered by State agencies.

Timber harvest-Volume of roundwood removed from forest land for products. Timber harvest statistics reported in Tables 35 and 36 were collected by the California State Board of Equalization, Timber Tax Division, in Sacramento. The Board of Equalization figures do not include smash, mis-manufacture, breakage, or wood left behind in the forest. Average annual removals in tables 28 and 29 and periodic removals shown in tables 31 and 32 are based on trees sampled in PRIME inventories that were live during the previous inventory but were harvested or killed in a cultural operation before the current inventory.

Timber volume-Includes the net volume in cubic feet of poletimber and sawtimber trees and salvable dead sawtimber trees, and the net volume in cubic feet of cull trees of commercial species. In Table 18, the volume of cull trees includes the

cull trees of commercial species. In Table 18, the volume of cull trees includes the gross volume of noncommercial species. Volume is measured from the top of a stump 12 inches tall to a minimum 4-inch top diameter, outside bark.

Timberland-Forest land capable of growing 20 cubic feet or more per acre per year (mean annual increment at culmination in fully stocked, natural stands) of industrial wood and not in a reserved status through removal of the area from timber utilization by statute, ordinance, or administrative order; and not in a withdrawn status where it is pending consideration for reserved status.

Uneven-aged stands-Stands where less than 70 percent of the tree stocking falls in three adjacent 10-year age classes.

Upper stem portion-The bole of sawtimber trees above the saw-log top7.0 inches diameter outside bark for softwoods and 9.0 inches diameter outside bark for hardwoods-to a minimum top diameter of 4.0 inches outside bark, or to the point where the central stem divides into limbs.

Withdrawn timberland-Timberland in National Forests that is being considered for permanent reserved status. Although this land has not been removed from timber utilization by statute, ordinance, or administrative order, it is not being actively managed as timberland.

Names of Trees

Common name	Scientific name [3]
Softwoods:	
Bishop pine	*Pinus muricata* D. Don
Brewer spruce	*Picea brewerana* Wats.
California red fir	*Abies magnifica* A. Murr.
California-nutmeg	*Torreya californica* Torr.
Douglas-fir	*Pseudotsuga menziesii* (Mirb.) Franco
Grand fir	*Abies grandis* (Dougl. ex D. Don) Lindl.
Gray pine (foothill pine)	*Pinus sabiniana* Dougl.
Incense-cedar	*Libocedrus decurrens* Torr.
Jeffrey pine	*Pinus jeffreyi* Grev. & Balf.
Juniper	*Juniperus* spp.
Knobcone pine	*Pinus attenuata* Lemm.
Lodgepole pine	*Pinus contorta* Dougl. ex Loud.
Monterey pine	*Pinus radiata* D. Don
Noble fir	*Abies procera* Rehd.
Pacific yew	*Taxus brevifolia* Nutt.
Ponderosa pine	*Pinus ponderosa* Dougl. ex Laws.
Port-Orford-cedar	*Chamaecyparis lawsoniana* (A Murr.) Parl.
Redwood	*Sequoia sempervirens* (D. Don) Endl.
Sitka spruce	*Picea sitchensis* (Bong.) Carr.
Sugar pine	*Pinus lambertiana* Dougl.
Western juniper	*Juniperus occidentalis* Hook.
Western redcedar	*Thuja plicata* Donn ex D. Don
Western hemlock	*Tsuga heterophylla* (Raf.) Sarg.
Western white pine	*Pinus monticola* Dougl. ex D. Don
White fir	*Abies concolor* (Gord. & Glend.) Lindl. ex Hildebr.

[3] Nomenclature per Little (1979).

Common name	Scientific name
Hardwoods:	
Bigleaf maple	*Acer macrophyllum* Pursh
Black cottonwood	*Populus trichocarpa* Torr. & Gray
Blue oak	*Quercus douglasii* Hook. & Arn.
California black oak	*Quercus kelloggii* Newb.
California buckeye	*Aesculus californica* (Spach) Nutt.
California-laurel	*Umbellularia californica* (Hook. & Arn.) Nutt.
Canyon live oak	*Quercus chrysolepis* Liebm.
Coast live oak	*Quercus agrifolia* Nee
Eucalyptus spp.	*Eucalyptus* spp.
Giant chinkapin	*Castanopsis chrysophylla* (Dougl.) A. DC.
Interior live oak	*Quercus wislizeni* A. DC.
Oregon white oak	*Quercus garryana* Dougl. ex Hook.
Oregon ash	*Fraxinus latifolia* Benth.
Pacific dogwood	*Cornus nuttallii* Audubon
Pacific madrone	*Arbutus menziesii* Pursh
Red alder	*Alnus rubra* Bong.
Tanoak	*Lithocarpus densiflorus* (Hook. & Arn.) Rehd.
Valley white oak (valley oak)	*Quercus lobata* Nee
Walnut	*Juglans* spp.
Water birch	*Betula occidentalis* Hook.
Willow	*Salix* spp.

Table 1--Land area by county, land class, and administrative status, North Coast Resource Area, California, 1994 [a b]

County	Forest land: Timberland	Reserved timberland [c]	Withdrawn timberland [d]	Available other forest	Reserved other forest	Total forest	Non-forest [e]	All land [f]
				Thousand acres				
Del Norte	320	145	1	75	84	626	18	643
Humboldt	1,487	202	3	270	10	1,972	300	2,272
Mendocino	1,303	29	0	305	4	1,640	612	2,252
Sonoma	303	5	0	137	14	459	569	1,027
Total	3,413	381	4	787	112	4,697	1,498	6,194

0 = none found
[a] Totals may be off because of rounding; data subject to sampling error.
[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.
[c] May include forest land incapable of growing 20 or more cubic feet of wood per acre per year (mean annual increment at culmination in fully stocked, natural stands). Reserved land has been taken out of timber production status by statute or administrative regulation.
[d] Withdrawn timberland is timberland on National Forests that is being considered for permanent reserved status.
[e] Includes cropland, pasture and range, swampland, industrial and urban areas, powerline clearings, railroads, and all improved roads and highways; and water as classified by Forest Service standards, but defined by the Bureau of Census as land (water less than 4.5 acres and < 200 feet wide is called land by the Bureau).
[f] Source: U.S. Department of Commerce, 1990.

Table 2--Area of reserved timberland, withdrawn timberland, and other forest land, by forest type, North Coast Resource Area, California, 1994 [a b]

Forest type	Reserved timberland [c]	Withdrawn timberland [d]	Other forest: Available	Other forest: Reserved	Total
			Thousand acres		
Softwood types:					
Redwood	132	--	0	0	132
Douglas-fir	144	2	53	48	247
Knobcone pine	--	0	1	0	1
Mixed conifer	39	2	16	18	75
Spruce	7	0	0	0	7
Lodgepole pine	--	0	0	0	--
Coastal lodgepole pine	0	0	0	--	--
Cypress	0	0	3	--	3
Total	322	4	73	66	465
Hardwood types:					
Bigleaf maple	0	0	4	0	4
Red alder	--	0	0	0	--
Pacific madrone	0	0	12	0	12
Tanoak	55	0	0	0	55
California-laurel	0	0	11	0	11
Buckeye	0	0	2	0	2
Oregon ash	0	0	7	0	7
Oaks	0	0	416	10	426
Other hardwood types	3	0	29	2	34
Riparian types	0	0	0	2	2
Total	58	0	481	14	553
Chaparral	0	0	194	5	199
Nonstocked	0	0	7	0	7
Unclassified [e]	0	0	33	28	61
Total, all types	381	4	787	112	1,284

-- = less than 500 acres, 0 = none found
[a] Totals may be off because of rounding; data subject to sampling error.
[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.
[c] May include forest land incapable of growing 20 or more cubic feet of wood per acre per year (mean annual increment at culmination in fully stocked natural stands). Reserved land has been taken out of timber production status by statute or administrative regulation.
[d] Withdrawn timberland is timberland on National Forests that is being considered for permanent reserved status.
[e] Information on hardwood forest types is unavailable.

Table 3--Area of timberland by county and owner class, North Coast Resource Area , California, 1994 [a b]

	Public						Private					
		Other public						Other private				
County	National Forest	Bureau of Land Management	Miscellaneous Federal	State	County and municipal	Total public	Forest industry	Farmer	Native American	Miscel-laneous	Total private	All owners
						Thousand acres						
Del Norte	157	0	0	0	0	157	135	5	0	23	163	320
Humboldt	262	13	0	1	1	277	608	290	110	202	1,210	1,487
Mendocino	116	58	0	51	2	227	591	99	18	368	1,076	1,303
Sonoma	0	4	8	1	1	14	68	57	0	164	289	303
Total	534	75	8	53	4	675	1,402	451	128	757	2,738	3,413

0 = none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

Table 4--Area of timberland by forest type and owner class, North Coast Resource Area, California, 1994 [a b]

Forest type	National Forest	Other public	Forest industry	Other private	All owners
			Thousand acres		
Softwood types:					
Redwood [c] --					
Redwood	1	73	306	73	454
Redwood / hardwood	0	11	120	57	189
Total	1	85	426	130	642
Douglas-fir--					
Douglas-fir	339	0	107	106	552
Douglas-fir / hardwood	0	18	103	138	258
Total	339	18	210	243	810
Fir-spruce--					
Grand fir	0	0	0	5	5
Grand fir / hardwood	0	0	0	4	4
Sitka spruce	0	0	0	2	2
Sitka spruce / hardwood	0	0	0	4	4
California red fir	2	0	0	0	2
Total	2	0	0	15	17
Other softwood types--					
Mixed conifer	183	0	0	1	184
Ponderosa pine / hardwood	0	0	7	0	7
Bishop pine	0	0	0	3	3
Knobcone pine / hardwood	0	0	8	0	8
Total	183	0	14	4	202
Total, softwood types	525	102	650	392	1,670
Hardwood types:					
Bigleaf maple	0	0	0	22	22
Red alder	0	0	31	15	46
Red alder / softwood	0	0	24	6	30
Pacific madrone	0	11	42	51	105
Pacific madrone / softwood	0	0	4	28	31
Giant chinkapin	0	0	6	0	6
Eucalyptus	0	0	0	4	4
Tanoak	9	0	326	307	642
Tanoak / softwood	0	0	207	87	294
Black cottonwood	0	0	5	0	5
Coast live oak	0	0	0	18	18
Coast live oak / softwood	0	0	0	6	6
Canyon live oak	0	12	25	45	83
Canyon live oak / softwood	0	11	0	14	25
Oregon white oak	0	0	0	85	85
Oregon white oak / softwood	0	0	0	41	41
California black oak	1	1	8	82	92
California black oak / softwood	0	0	10	32	41
Valley white oak	0	0	0	13	13
Interior live oak	0	2	6	7	14
Willow	0	0	0	5	5
Willow / softwood	0	0	0	5	5
California-laurel	0	0	21	44	65
California-laurel / softwood	0	0	6	4	10
Total, hardwood types	10	38	720	920	1,688
Nonstocked [d]	0	0	32	23	55
Total, all types	535	140	1,402	1,336	3,413

0 = none found
[a] Totals may be off because of rounding; data subject to sampling error.
[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.
[c] In addition, outside National Forests, redwood is present on about 760 thousand acres of nonredwood types.
[d] Nonstocked areas are less than 10-percent stocked with live trees; includes recent clearcuts scheduled for planting.

Table 5--Area of timberland by owner class, stand-size class, and forest type group, North Coast Resource Area, California, 1994 [a b]

Owner	Sawtimber			Poletimber			Seedling - sapling			All stand-size classes			
	Softwood types	Hardwood types	All types	Softwood types	Hardwood types	All types	Softwood types	Hardwood types	All types	Softwood types	Hardwood types	Not classified [c]	All types
	Thousand acres												
National Forest	416	--[d]	416	22	--[d]	22	85	--[d]	85	525	--[d]	11	534
Other public	93	15	107	10	23	33	0	0	0	102	38	0	140
Forest industry	463	463	926	71	148	219	117	109	226	650	720	32	1,402
Other private	352	657	1,009	23	188	211	18	75	93	393	920	22	1,336
All owners	1,324	1,135	2,459	126	359	484	220	184	404	1,670	1,678	66	3,413

-- = less than 500 acres, 0 = none found
[a] Totals may be off because of rounding; data subject to sampling error.
[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.
[c] Unclassified stand-size classes are primarily for nonstocked stands, where less than 10-percent of the area is stocked with live trees.
[d] Stand-size class was not determined for hardwood types on National Forest land.

Table 6--Area of timberland by cubic-foot site class and owner class, North Coast Resource Area, California, 1994 [a b]

Owner	Site class [c]						
	≥225	165-224	120-164	85-119	50-84	20-49	All classes
	Thousand acres						
National Forest	0	55	161	247	70	2	534
Other public	48	34	15	21	22	0	140
Forest industry	271	268	391	351	101	19	1,402
Other private	76	128	371	384	330	47	1,336
All owners	396	486	938	1,003	523	68	3,413

0 = none found
[a] Totals may be off because of rounding; data subject to sampling error.
[b] Data for National Forests were updated to 1992; data for the other owners were collected during 1991-94.
[c] Site class is the mean annual increment cubic-foot growth per acre at culmination in fully stocked natural, stands.

Table 7--Area of timberland by forest type and stand-size class, North Coast Resource Area, California, 1994 [a b]

Forest type	Sawtimber	Poletimber	Seedling-sapling	Not classified [c]	All classes
			Thousand acres		
Softwood types:					
Redwood [d] --					
Redwood	412	10	32	0	454
Redwood / hardwood	155	34	0	0	189
Total	567	43	32	0	642
Douglas-fir--					
Douglas-fir	416	15	121	0	552
Douglas-fir / hardwood	182	37	40	0	258
Total	597	53	160	0	810
Fir-spruce--					
Grand fir	5	0	0	0	5
Grand fir / hardwood	4	0	0	0	4
Sitka spruce	2	0	0	0	2
Sitka spruce / hardwood	4	0	0	0	4
California red fir	0	0	0	2	2
Total	15	0	0	2	17
Other softwood types--					
Mixed conifer	135	22	27	0	184
Ponderosa pine / hardwood	7	0	0	0	7
Knobcone pine / hardwood	0	8	0	0	8
Bishop pine	3	0	0	0	3
Total	145	29	27	0	202
Total, softwood types	1,324	125	220	2	1,670
Hardwood types:					
Bigleaf maple	22	0	0	0	22
Red alder	10	13	23	0	46
Red alder / softwood	15	9	5	0	30
Pacific madrone	75	23	7	0	105
Pacific madrone / softwood	31	0	0	0	31
Giant chinkapin	6	0	0	0	6
Eucalyptus	4	0	0	0	4
Tanoak	373	187	73	9	642
Tanoak / softwood	199	41	54	0	294
Black cottonwood	0	5	0	0	5
Coast live oak	18	0	0	0	18
Coast live oak / softwood	6	0	0	0	6
Canyon live oak	63	20	0	0	83
Canyon live oak / softwood	25	0	0	0	25
Oregon white oak	47	39	0	0	85
Oregon white oak / softwood	32	0	8	0	41
California black oak	80	11	0	1	92
California black oak / softwood	35	6	0	0	41
Valley white oak	13	0	0	0	13
Interior live oak	12	2	0	0	14
Willow	0	0	5	0	5
Willow / softwood	5	0	0	0	5
California-laurel	53	5	8	0	65
California-laurel / softwood	10	0	0	0	10
Total, hardwood types	1,135	359	184	10	1,688
Nonstocked [e]	0	0	0	55	55
Total, all types	2,459	484	404	67	3,413

0 = none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

[c] Stand-size class is not available for hardwood types and some softwood types on National Forest land.

[d] In addition, outside National Forests, redwood is present on plots that are not redwood forest types, representing about 760 thousand acres of timberland.

[e] Nonstocked areas are less than 10-percent stocked with live trees; includes recent clearcuts scheduled for planting.

Table 8--Number of live trees on timberland outside National Forests, by species and diameter class, North Coast Resource Area, California, 1994 [a b]

Species	Diameter class (inches at breast height)													All classes
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0-38.9	39.0 +	
	Thousand trees													
Softwoods:														
Grand fir	4,914	1,829	1,375	649	1,071	1,103	392	317	179	219	80	234	12	12,373
Port-Orford-cedar	437	656	0	146	129	0	0	32	0	45	0	0	0	1,445
Cypress	2,843	0	0	0	0	0	0	0	0	0	0	0	0	2,843
Incense-cedar	681	0	219	0	0	0	41	0	0	0	0	0	0	941
Sitka spruce	1,748	855	291	0	82	0	118	57	31	23	35	138	6	3,382
Knobcone pine	161	178	0	292	77	60	0	0	0	0	0	0	0	767
Lodgepole pine	209	0	0	0	0	0	0	0	0	0	0	0	0	209
Sugar pine	1,601	437	219	397	101	137	0	84	0	0	0	36	27	3,041
Bishop pine	865	765	437	0	0	203	127	68	167	194	95	89	0	3,010
Ponderosa pine	2,316	1,161	475	234	424	314	257	67	84	23	28	133	0	5,517
Monterey pine	0	0	0	0	0	71	0	0	0	0	0	0	0	71
Grey pine	0	0	0	0	0	0	0	0	0	0	16	0	0	16
Douglas-fir	198,385	70,174	32,790	17,060	11,326	8,652	5,765	4,084	3,333	2,521	2,178	6,010	1,242	363,519
Redwood	120,149	36,858	24,896	15,104	14,986	9,403	7,967	6,690	5,435	5,724	3,721	10,469	1,205	262,606
Pacific yew	0	0	0	0	0	0	33	0	23	0	0	0	0	56
Western redcedar	219	0	0	211	0	0	0	0	0	0	0	0	0	429
California-nutmeg	2,467	415	364	0	84	0	50	0	0	0	57	26	0	3,463
Western hemlock	2,759	437	802	97	191	256	0	117	51	0	47	46	0	4,803
Total	339,756	113,765	61,868	34,188	28,471	20,199	14,749	11,515	9,304	8,749	6,256	17,180	2,491	668,491
Hardwoods:														
Bigleaf maple	4,623	2,075	3,690	1,649	354	258	293	135	177	122	70	123	0	13,570
Buckeye	399	291	0	277	84	0	0	0	0	0	0	0	0	1,050
Red alder	33,069	8,338	5,622	5,256	3,627	1,908	820	125	166	134	59	107	6	59,237
Pacific madrone	34,655	16,803	13,192	7,773	5,954	3,625	2,846	2,274	1,229	1,059	529	1,586	161	91,686
Water birch	0	0	0	0	0	0	0	39	0	0	0	0	0	39
Giant chinkapin	3,402	1,692	637	385	0	134	95	111	0	17	0	31	0	6,504
Pacific dogwood	437	0	146	0	0	0	0	0	23	0	0	0	0	606
Eucalyptus	0	0	0	0	0	0	0	0	0	0	14	53	16	82
Oregon ash	598	199	0	0	94	0	0	0	0	0	0	0	0	891
Walnut	656	0	0	0	0	0	0	0	0	0	0	0	0	656
Tanoak	408,345	151,672	83,609	45,075	24,319	11,892	7,738	4,421	3,793	2,198	1,171	2,451	60	746,744
Black cottonwood	209	0	209	0	0	0	0	0	0	0	0	34	0	452
Coast live oak	747	897	964	198	299	234	175	68	128	56	83	77	0	3,925
Canyon live oak	22,450	8,947	5,405	4,156	1,714	1,816	1,419	454	384	211	131	517	6	47,611
Oregon white oak	2,398	5,175	10,265	6,708	3,088	1,601	785	370	296	183	76	250	12	31,208
California black oak	1,641	3,481	1,807	3,711	2,541	1,743	1,056	711	708	366	321	822	43	18,951
Valley white oak	873	452	997	431	737	51	86	30	49	21	16	35	0	3,777
Interior live oak	3,450	1,021	548	46	63	313	137	121	60	32	20	108	20	5,937
Willow	3,763	994	372	148	201	0	43	58	20	0	0	0	0	5,599
California-laurel	21,629	12,856	5,372	4,562	3,783	1,211	931	790	225	291	166	179	8	52,001
Total	543,345	214,893	132,834	80,374	46,859	24,788	16,423	9,707	7,257	4,690	2,655	6,374	330	1,090,528
All species	883,101	328,658	194,702	114,562	75,330	44,987	31,172	21,222	16,561	13,439	8,910	23,554	2,822	1,759,019

0 = none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

Table 9--Number of growing-stock trees on timberland outside National Forests, by species and diameter class, North Coast Resource Area, California, 1994 [a b c]

Species	Diameter class (inches at breast height)													All classes
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0-38.9	39.0 +	
	Thousand trees													
Softwoods:														
Grand fir	4,914	1,829	1,375	649	1,071	1,103	392	317	179	219	80	227	12	12,366
Port-Orford-cedar	437	219	0	0	129	0	0	32	0	45	0	0	0	862
Cypress	2,843	0	0	0	0	0	0	0	0	0	0	0	0	2,843
Incense-cedar	681	0	219	0	0	0	41	0	0	0	0	0	0	941
Sitka spruce	1,748	855	291	0	82	0	118	57	31	23	35	138	6	3,382
Knobcone pine	161	178	0	292	0	60	0	0	0	0	0	0	0	690
Lodgepole pine	209	0	0	0	0	0	0	0	0	0	0	0	0	209
Sugar pine	1,601	437	219	397	101	137	0	84	0	0	0	36	27	3,041
Bishop pine	865	765	437	0	0	203	127	31	167	194	95	89	0	2,973
Ponderosa pine	2,316	1,161	475	234	424	314	257	67	84	23	28	133	0	5,517
Monterey pine	0	0	0	0	0	71	0	0	0	0	0	0	0	71
Douglas-fir	196,969	69,851	32,280	16,922	11,219	8,491	5,655	4,084	3,333	2,479	2,164	5,955	1,182	360,582
Redwood	115,438	36,494	24,751	14,896	14,702	9,192	7,935	6,607	5,331	5,724	3,721	10,393	1,177	256,359
Western redcedar	219	0	0	211	0	0	0	0	0	0	0	0	0	429
California-nutmeg	2,176	415	364	0	84	0	50	0	0	0	57	26	0	3,172
Western hemlock	2,759	437	802	97	191	256	0	117	51	0	47	46	0	4,803
Total	333,338	112,641	61,213	33,697	28,002	19,827	14,574	11,396	9,177	8,706	6,225	17,042	2,404	658,241
Hardwoods:														
Bigleaf maple	4,623	2,075	3,545	1,649	354	212	199	72	72	122	54	123	0	13,100
Buckeye	399	146	0	0	0	0	0	0	0	0	0	0	0	544
Red alder	32,194	8,338	5,404	5,094	3,627	1,821	820	125	148	114	59	107	6	57,856
Pacific madrone	33,293	16,512	10,018	6,843	5,138	3,405	2,438	1,974	1,032	928	478	1,251	114	83,423
Giant chinkapin	2,965	1,692	637	385	0	134	95	111	0	17	0	31	0	6,067
Eucalyptus	0	0	0	0	0	0	0	0	0	0	14	53	16	82
Oregon ash	598	199	0	0	94	0	0	0	0	0	0	0	0	891
Walnut	656	0	0	0	0	0	0	0	0	0	0	0	0	656
Tanoak	394,028	148,264	74,537	41,734	21,971	11,640	7,577	4,182	3,708	2,066	1,136	2,185	60	713,087
Black cottonwood	209	0	209	0	0	0	0	0	0	0	0	34	0	452
Coast live oak	747	897	527	103	72	136	119	30	128	37	63	35	0	2,892
Canyon live oak	21,230	8,146	4,770	3,380	1,296	1,711	1,170	422	329	211	103	407	6	43,180
Oregon white oak	2,398	5,030	7,895	5,635	2,527	1,329	669	301	156	183	34	177	0	26,333
California black oak	1,442	3,481	1,462	2,977	1,900	1,594	895	684	551	265	245	502	31	16,030
Valley white oak	728	452	997	431	657	51	86	30	24	21	16	35	0	3,527
Interior live oak	2,867	1,021	279	0	63	248	137	81	31	32	20	96	0	4,874
California-laurel	21,338	11,786	3,954	3,479	3,376	1,163	858	694	225	255	131	139	8	47,405
Total	519,714	208,037	114,232	71,709	41,076	23,444	15,062	8,705	6,403	4,252	2,353	5,175	239	1,020,400
All species	853,052	320,678	175,445	105,405	69,078	43,270	29,636	20,101	15,581	12,958	8,578	22,217	2,643	1,678,641

0 = none found

[a] Growing-stock trees are all live trees except cull trees.

[b] Totals may be off because of rounding; data subject to sampling error.

[c] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

Table 10--Net volume of growing stock on timberland by species and diameter class, North Coast Resource Area, California, 1994 [a b c]

Species	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0-38.9	39.0 +	All classes
	Million cubic feet											
Softwoods:												
White fir	5	8	8	14	15	18	20	14	69	85	80	337
Grand fir	4	6	14	22	12	12	10	16	26	16	4	142
California red fir	1	1	1	2	2	3	2	1	10	8	2	32
Port-Orford-cedar	1	1	5	1	1	2	1	3	--	5	14	35
Incense-cedar	1	1	3	1	2	2	2	2	11	19	18	63
Sitka spruce	1	0	1	0	4	3	1	1	11	11	3	36
Brewer spruce	--	--	1	1	1	1	1	1	1	1	--	8
Knobcone pine	--	2	0	1	0	0	0	0	0	0	0	3
Sugar pine	2	4	3	3	2	4	3	1	12	25	70	128
Bishop pine	1	0	0	5	4	1	10	13	16	6	0	56
Jeffrey pine	--	0	0	--	--	--	--	--	1	1	--	2
Ponderosa pine	2	3	5	8	9	6	8	5	41	36	17	139
Western white pine	0	--	--	--	--	--	--	--	1	1	--	3
Monterey pine	0	0	0	1	0	0	0	0	0	0	0	1
Douglas-fir	126	146	186	225	228	236	237	241	1,041	878	1,584	5,119
Redwood	36	60	121	129	172	219	237	321	1,038	622	709	3,663
Western redcedar	0	1	0	0	0	0	0	0	0	0	0	1
California-nutmeg	1	0	1	0	1	0	0	0	5	1	0	8
Western hemlock	3	1	3	5	0	5	3	0	7	5	0	31
Total	183	234	350	418	453	503	535	620	2,289	1,720	2,502	9,807
Hardwoods:												
Bigleaf maple	10	10	4	4	6	3	4	8	14	13	0	76
Red alder	16	37	49	37	27	5	7	8	14	1	2	204
Pacific madrone	42	61	72	86	77	90	70	70	175	69	40	850
Giant chinkapin	2	3	1	3	3	5	--	2	4	2	0	25
Eucalyptus	0	0	0	0	0	0	0	0	6	0	9	15
Oregon ash	0	0	1	0	0	0	0	0	0	0	0	1
Tanoak	142	184	198	173	172	138	157	116	282	87	28	1,677
Black cottonwood	--	0	0	0	0	0	0	0	2	4	0	6
Coast live oak	1	--	1	3	2	1	5	2	7	1	0	23
Canyon live oak	12	19	13	28	32	15	16	16	50	26	3	229
Oregon white oak	21	35	27	26	18	12	7	11	20	7	0	185
California black oak	9	29	36	40	36	38	34	25	80	47	24	398
Valley white oak	2	2	7	1	2	1	1	1	7	2	0	26
Interior live oak	1	0	1	4	4	3	1	2	8	5	0	28
California-laurel	11	24	34	22	23	24	11	17	19	13	3	200
Total	269	405	443	425	401	334	314	278	686	277	110	3,942
All species	452	639	793	843	854	837	849	898	2,975	1,997	2,612	13,748

-- = less than 500,000 cubic feet, 0 = none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Includes growing-stock trees ≥ 5 inches d.b.h.

[c] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

Table 11--Net volume of sawtimber on timberland by species and diameter class, North Coast Resource Area, California, 1994 [a b c]

Species	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0-38.9	39.0 +	All classes
	Million board feet, Scribner rule									
Softwoods:										
White fir	52	88	95	111	122	86	412	505	446	1,918
Grand fir	47	91	52	55	54	85	149	95	26	653
California red fir	5	13	9	20	10	9	59	47	13	185
Port-Orford-cedar	30	6	7	10	4	17	0	35	94	203
Incense-cedar	17	8	10	13	14	11	63	110	110	356
Sitka spruce	2	0	20	15	5	5	60	65	19	190
Brewer spruce	6	4	4	9	9	3	7	7	1	49
Knobcone pine	0	5	0	0	0	0	0	0	0	5
Sugar pine	17	11	13	19	18	9	76	166	479	809
Bishop pine	0	19	18	7	54	70	89	34	0	290
Jeffrey pine	0	--	0	--	1	--	4	6	2	13
Ponderosa pine	21	37	42	35	45	30	255	230	110	803
Western white pine	0	0	0	0	--	--	3	4	1	7
Monterey pine	0	4	0	0	0	0	0	0	0	4
Douglas-fir	731	1,034	1,144	1,178	1,266	1,344	6,160	5,547	9,955	28,359
Redwood	345	470	711	994	1,137	1,586	5,589	3,641	4,472	18,945
California-nutmeg	1	0	2	0	0	0	22	3	0	27
Western hemlock	10	18	0	26	14	0	37	30	0	135
Total	1,284	1,809	2,126	2,492	2,751	3,254	12,984	10,525	15,726	52,950
Hardwoods:										
Bigleaf maple		12	21	13	8	27	48	21	0	150
Red alder		133	124	24	37	39	70	4	10	440
Pacific madrone		296	233	261	258	225	532	195	80	2,080
Giant chinkapin		9	9	14	0	7	15	14	0	68
Eucalyptus		0	0	0	0	0	30	0	57	87
Tanoak		538	573	485	552	439	1,186	396	143	4,312
Black cottonwood		0	0	0	0	0	12	27	0	38
Coast live oak		10	6	2	8	3	13	1	0	42
Canyon live oak		59	66	31	31	43	106	69	8	412
Oregon white oak		58	41	22	15	21	29	15	0	201
California black oak		95	97	104	97	71	257	169	97	986
Valley white oak		3	6	2	1	3	20	4	0	38
Interior live oak		8	9	5	1	2	17	11	0	52
California-laurel		61	68	71	33	54	68	46	12	412
Total		1,281	1,252	1,033	1,040	933	2,402	972	406	9,318
All species	1,284	3,090	3,377	3,525	3,790	4,187	15,386	11,497	16,132	62,268

-- = less than 500,000 board feet, 0 = none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Includes sawtimber softwood trees ≥ 9 inches d.b.h. and sawtimber hardwood trees ≥ 11 inches d.b.h.

[c] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

Table 12--Net volume of growing stock on timberland, by species and owner class, North Coast Resource Area, California, 1994 [a b c]

Species	National Forest	Other public	Forest industry	Other private	All owners
			Million cubic feet		
Softwoods:					
White fir	337	0	0	0	337
Grand fir	0	12	92	39	142
California red fir	32	0	0	0	32
Port-Orford-cedar	30	0	3	3	35
Incense-cedar	61	0	1	1	63
Sitka spruce	0	0	0	36	36
Brewer spruce	8	0	0	0	8
Knobcone pine	--	0	3	0	3
Sugar pine	95	0	12	21	128
Bishop pine	0	10	11	35	56
Jeffrey pine	2	0	0	0	2
Ponderosa pine	89	7	6	37	139
Western white pine	3	0	0	0	3
Monterey pine	0	0	1	0	1
Douglas-fir	2,014	210	1,207	1,688	5,119
Redwood	44	455	2,406	758	3,663
Western redcedar	0	0	1	0	1
California-nutmeg	0	4	4	--	8
Western hemlock	0	3	18	10	31
Total	2,716	700	3,764	2,626	9,807
Hardwoods:					
Bigleaf maple	1	5	24	46	76
Red alder	1	0	110	94	204
Pacific madrone	108	53	237	452	850
Giant chinkapin	4	0	11	10	25
Eucalyptus	0	0	4	12	15
Oregon ash	0	0	0	1	1
Tanoak	139	36	836	666	1,677
Black cottonwood	0	0	--	6	6
Coast live oak	0	0	0	23	23
Canyon live oak	2	38	71	119	229
Oregon white oak	0	6	10	169	185
California black oak	117	23	41	217	398
Valley white oak	0	0	0	26	26
Interior live oak	0	2	13	13	28
California-laurel	0	6	58	136	200
Total	371	168	1,414	1,989	3,942
All species	3,087	868	5,179	4,615	13,748

-- = less than 500,000 cubic feet, 0 = none found
[a] Totals may be off because of rounding; data subject to sampling error.
[b] Includes growing-stock trees ≥ 5 inches d.b.h.
[c] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

Table 13--Net volume of sawtimber on timberland, by species and owner class, North Coast Resource Area, California, 1994 [a b c]

Species	National Forest	Other public	Forest industry	Other private	All owners
		Million board feet, Scribner rule			
Softwoods:					
White fir	1,918	0	0	0	1,918
Grand fir	0	74	369	209	653
California red fir	185	0	0	0	185
Port-Orford-cedar	180	0	13	10	203
Incense-cedar	354	0	0	2	356
Sitka spruce	0	0	0	190	190
Brewer spruce	49	0	0	0	49
Knobcone pine	0	0	5	0	5
Sugar pine	623	0	48	137	809
Bishop pine	0	48	56	186	290
Jeffrey pine	13	0	0	0	13
Ponderosa pine	557	43	21	182	803
Western white pine	7	0	0	0	7
Monterey pine	0	0	4	0	4
Douglas-fir	12,417	1,221	5,870	8,851	28,359
Redwood	287	2,389	12,341	3,928	18,945
California-nutmeg	0	19	9	0	27
Western hemlock	0	16	79	39	135
Total	16,591	3,810	18,815	13,735	52,950
Hardwoods:					
Bigleaf maple	2	7	26	114	150
Red alder	1	0	228	212	440
Pacific madrone	409	113	530	1,029	2,080
Giant chinkapin	0	0	34	34	68
Eucalyptus	0	0	19	68	87
Tanoak	493	45	2,023	1,752	4,312
Black cottonwood	0	0	0	38	38
Coast live oak	0	0	0	42	42
Canyon live oak	5	49	147	211	412
Oregon white oak	0	9	16	176	201
California black oak	425	46	84	430	986
Valley white oak	0	0	0	38	38
Interior live oak	0	3	30	20	52
California-laurel	0	13	125	273	412
Total	1,335	286	3,261	4,437	9,318
All species	17,926	4,095	22,076	18,171	62,268

0 = none found
[a] Totals may be off because of rounding; data subject to sampling error.
[b] Includes sawtimber softwood trees ≥ 9 inches d.b.h. and sawtimber hardwood trees ≥ 11 inches d.b.h.
[c] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

Table 14--Net volume of growing stock on timberland, by forest type and stand-size class, North Coast Resource Area, California, 1994 [a b c]

Forest type	Sawtimber	Poletimber	Seedling-sapling	Not classified [d]	All classes
			Million cubic feet		
Softwood types:					
Redwood--					
Redwood	3,156	4	14	0	3,174
Redwood / hardwood	912	62	0	0	974
Total	4,068	67	14	0	4,148
Douglas-fir--					
Douglas-fir	2,693	17	57	0	2,767
Douglas-fir / hardwood	1,049	75	8	0	1,132
Total	3,742	92	65	0	3,898
Fir-spruce--					
Grand fir	17	0	0	0	17
Grand fir / hardwood	6	0	0	0	6
Sitka spruce	7	0	0	0	7
Sitka spruce / hardwood	22	0	0	0	22
California red fir	0	0	0	12	12
Total	51	0	0	12	63
Other softwood types--					
Mixed conifer	993	41	0	0	1,034
Ponderosa pine / hardwood	14	0	0	0	14
Bishop pine	18	0	0	0	18
Knobcone pine / hardwood	0	6	0	0	6
Total	1,025	48	0	0	1,073
Total, softwood types	8,886	206	78	12	9,181
Hardwood types:					
Bigleaf maple	46	0	0	0	46
Red alder	56	37	8	0	100
Red alder / softwood	59	10	0	0	68
Pacific madrone	283	43	9	0	335
Pacific madrone / softwood	141	0	0	0	141
Giant chinkapin	6	0	0	0	6
Eucalyptus	22	0	0	0	22
Tanoak	1,307	435	33	28	1,803
Tanoak / softwood	709	85	31	0	825
Black cottonwood	0	--	0	0	--
Coast live oak	33	0	0	0	33
Coast live oak / softwood	14	0	0	0	14
Canyon live oak	215	57	0	0	271
Canyon live oak / softwood	83	0	0	0	83
Oregon white oak	88	69	0	0	157
Oregon white oak / softwood	81	0	3	0	84
California black oak	211	34	0	2	248
California black oak / softwood	99	4	0	0	103
Valley white oak	38	0	0	0	38
Interior live oak	22	7	0	0	28
Willow / softwood	3	0	0	0	3
California-laurel	109	13	3	0	124
California-laurel / softwood	23	0	0	0	23
Total, hardwood types	3,646	792	86	30	4,554
Nonstocked	0	0	0	13	13
Total, all types	12,532	998	164	54	13,748

-- = less than 500,000 cubic feet, 0 = none found
[a] Totals may be off because of rounding; data subject to sampling error.
[b] Includes growing-stock trees ≥ 5 inches d.b.h.
[c] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.
[d] Stand-size class is not available for hardwood types and some softwood types on National Forest land.

Table 15--Net volume of sawtimber on timberland, by forest type and stand-size class, North Coast Resource Area, California, 1994 [a b c]

Forest type	Sawtimber	Poletimber	Seedling-sapling	Not classified [d]	All classes
	Million board feet, Scribner rule				
Softwood types:					
Redwood--					
Redwood	16,119	7	59	0	16,185
Redwood / hardwood	4,321	148	0	0	4,469
Total	20,441	155	59	0	20,654
Douglas-fir--					
Douglas-fir	15,111	51	249	0	15,411
Douglas-fir / hardwood	4,816	159	22	0	4,997
Total	19,927	210	271	0	20,408
Fir-spruce--					
Grand fir	94	0	0	0	94
Grand fir / hardwood	28	0	0	0	28
Sitka spruce	35	0	0	0	35
Sitka spruce / hardwood	113	0	0	0	113
California red fir	0	0	0	71	71
Total	269	0	0	71	340
Other softwood types--					
Mixed conifer	5,930	210	0	0	6,140
Ponderosa pine / hardwood	39	0	0	0	39
Bishop pine	94	0	0	0	94
Knobcone pine / hardwood	0	17	0	0	17
Total	6,063	227	0	0	6,290
Total, softwood types	46,700	592	330	71	47,692
Hardwood types:					
Bigleaf maple	152	0	0	0	152
Red alder	205	39	21	0	265
Red alder / softwood	201	9	0	0	210
Pacific madrone	885	57	32	0	973
Pacific madrone / softwood	620	0	0	0	620
Giant chinkapin	22	0	0	0	22
Eucalyptus	124	0	0	0	124
Tanoak	4,469	981	103	124	5,678
Tanoak / softwood	2,721	296	53	0	3,070
Coast live oak	105	0	0	0	105
Coast live oak / softwood	45	0	0	0	45
Canyon live oak	598	81	0	0	679
Canyon live oak / softwood	321	0	0	0	321
Oregon white oak	225	95	0	0	320
Oregon white oak / softwood	292	0	6	0	298
California black oak	635	79	0	7	721
California black oak / softwood	322	12	0	0	334
Valley white oak	70	0	0	0	70
Interior live oak	44	13	0	0	57
Willow / softwood	14	0	0	0	14
California-laurel	310	32	11	0	353
California-laurel / softwood	93	0	0	0	93
Total, hardwood types	12,473	1,693	226	132	14,523
Nonstocked [e]	0	0	0	53	53
Total, all types	59,172	2,285	556	255	62,268

0= none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Includes sawtimber softwood trees ≥ 9 inches d.b.h. and sawtimber hardwood trees ≥ 11 inches d.b.h.

[c] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

[d] Stand size class is not available for hardwood types and some softwood types on National Forest land.

[e] Nonstocked areas are less than 10-percent stocked with live trees. Recent clearcuts scheduled for planting are included.

Table 16--Net volume of growing stock on timberland, by forest type and owner class, North Coast Resource Area, California, 1994 [a b c]

Forest type	National Forest	Other public	Forest industry	Other private	All owners
			Million cubic feet		
Softwood types:					
Redwood--					
Redwood	16	571	2,125	462	3,174
Redwood / hardwood	0	43	586	346	974
Total	16	614	2,711	808	4,148
Douglas-fir--					
Douglas-fir	1,995	0	283	488	2,767
Douglas-fir / hardwood	0	147	265	720	1,132
Total	1,995	147	548	1,208	3,898
Fir-spruce--					
Grand fir	0	0	0	17	17
Grand fir / hardwood	0	0	0	6	6
Sitka spruce	0	0	0	7	7
Sitka spruce / hardwood	0	0	0	22	22
California red fir	12	0	0	0	12
Total	12	0	0	51	63
Other softwood types--					
Mixed conifer	1,034	0	0	0	1,034
Ponderosa pine / hardwood	0	0	14	0	14
Bishop pine	0	0	0	18	18
Knobcone pine / hardwood	0	0	6	0	6
Total	1,034	0	20	18	1,073
Total, softwood types	3,057	761	3,279	2,085	9,181
Hardwood types:					
Bigleaf maple	0	0	0	46	46
Red alder	0	0	47	54	100
Red alder / softwood	0	0	49	20	68
Pacific madrone	0	21	135	179	335
Pacific madrone / softwood	0	0	2	139	141
Giant chinkapin	0	0	6	0	6
Eucalyptus	0	0	0	22	22
Tanoak	28	0	891	884	1,803
Tanoak / softwood	0	0	564	261	825
Black cottonwood	0	0	--	0	--
Coast live oak	0	0	0	33	33
Coast live oak / softwood	0	0	0	14	14
Canyon live oak	0	39	89	144	271
Canyon live oak / softwood	0	36	0	47	83
Oregon white oak	0	0	0	157	157
Oregon white oak / softwood	0	0	0	84	84
California black oak	2	5	23	218	248
California black oak / softwood	0	0	17	86	103
Valley white oak	0	0	0	38	38
Interior live oak	0	7	14	8	28
Willow / softwood	0	0	0	3	3
California-laurel	0	0	40	84	124
California-laurel / softwood	0	0	16	6	23
Total, hardwood types	30	107	1,892	2,526	4,554
Nonstocked [d]	0	0	8	5	13
Total, all types	3,087	868	5,179	4,615	13,748

-- = less than 500,000 cubic feet, 0 = none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Includes growing-stock trees ≥ 5 inches d.b.h.

[c] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

[d] Nonstocked areas are less than 10-percent stocked with live trees. Recent clearcuts scheduled for planting are included.

Table 17--Net volume of sawtimber on timberland, by forest type and owner class, North Coast Resource Area, California, 1994 [a b c]

Forest type	National Forest	Other public	Forest industry	Other private	All owners
		Million board feet, Scribner rule			
Softwood types:					
Redwood--					
Redwood	95	2,985	10,886	2,219	16,185
Redwood / hardwood	0	158	2,602	1,710	4,469
Total	95	3,143	13,488	3,929	20,654
Douglas-fir--					
Douglas-fir	11,487	0	1,377	2,546	15,411
Douglas-fir / hardwood	0	679	905	3,413	4,997
Total	11,487	679	2,282	5,960	20,408
Fir-spruce--					
Grand fir	0	0	0	94	94
Grand fir / hardwood	0	0	0	28	28
Sitka spruce	0	0	0	35	35
Sitka spruce / hardwood	0	0	0	113	113
California red fir	71	0	0	0	71
Total	71	0	0	269	340
Other softwood types--					
Mixed conifer	6,140	0	0	0	6,140
Ponderosa pine / hardwood	0	0	39	0	39
Bishop pine	0	0	0	94	94
Knobcone pine / hardwood	0	0	17	0	17
Total	6,140	0	56	94	6,290
Total, softwood types	17,793	3,822	15,826	10,251	47,692
Hardwood types:					
Bigleaf maple	0	0	0	152	152
Red alder	0	0	135	130	265
Red alder / softwood	0	0	144	67	210
Pacific madrone	0	16	425	533	973
Pacific madrone / softwood	0	0	5	615	620
Giant chinkapin	0	0	22	0	22
Eucalyptus	0	0	0	124	124
Tanoak	124	0	2,802	2,752	5,678
Tanoak / softwood	0	0	2,090	981	3,070
Coast live oak	0	0	0	105	105
Coast live oak / softwood	0	0	0	45	45
Canyon live oak	0	51	268	361	679
Canyon live oak / softwood	0	174	0	147	321
Oregon white oak	0	0	0	320	320
Oregon white oak / softwood	0	0	0	298	298
California black oak	7	21	48	646	721
California black oak / softwood	0	0	58	275	334
Valley white oak	0	0	0	70	70
Interior live oak	0	13	28	16	57
Willow / softwood	0	0	0	14	14
California-laurel	0	0	126	227	353
California-laurel / softwood	0	0	70	23	93
Total, hardwood types	132	274	6,219	7,899	14,523
Nonstocked [d]	0	0	32	22	53
Total, all types	17,926	4,095	22,076	18,171	62,268

0 = none found
[a] Totals may be off because of rounding; data subject to sampling error.
[b] Includes sawtimber softwood trees ≥ 9 inches d.b.h. and sawtimber hardwood trees ≥ 11 inches d.b.h.
[c] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.
[d] Nonstocked areas are less than 10-percent stocked with live trees. Recent clearcuts scheduled for planting are included.

Table 18--Volume of timber on timberland by class of timber, owner group, and species group, North Coast Resource Area, California, 1994 [a b]

Class of timber	Softwood species	Hardwood species	All species
		Million cubic feet	
Sawtimber trees:			
Outside National Forests--			
Saw-log portion	6,609	1,816	8,425
Upper-stem portion	133	718	851
Total	6,742	2,534	9,276
National Forests	2,649	331	2,980
Total, sawtimber trees	9,391	2,865	12,256
Poletimber trees (all owners)	415	1,077	1,492
All growing-stock trees	9,807	3,942	13,748
Cull trees:			
Outside National Forests--			
Sound cull trees	5	224	229
Rotten cull trees	27	173	200
Total	32	397	429
National Forests	78	5	83
Total, cull trees	110	402	512
All timber	9,916	4,344	14,260

[a] Totals may be off because of rounding; data subject to sampling error.
[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

Table 19--Current net annual growth of growing stock on timberland, by forest type and owner class, North Coast Resource Area, California, 1994 [a b]

Forest type	National Forest	Other public	Forest industry	Other private	All owners
			Thousand cubic feet		
Softwood types:					
Redwood--					
Redwood	409	15,293	65,530	15,745	96,977
Redwood / hardwood	0	1,630	24,511	11,308	37,449
Total	409	16,923	90,041	27,053	134,426
Douglas-fir--					
Douglas-fir	34,195	0	11,444	12,152	57,791
Douglas-fir / hardwood	0	1,494	12,392	15,823	29,709
Total	34,195	1,494	23,836	27,975	87,500
Fir-spruce--					
Grand fir	0	0	0	149	149
Grand fir / hardwood	0	0	0	510	510
Sitka spruce	0	0	0	432	432
Sitka spruce / hardwood	0	0	0	1,643	1,643
California red fir	154	0	0	0	154
Total	154	0	0	2,735	2,889
Other softwood types--					
Mixed conifer	18,681	0	0	0	18,681
Ponderosa pine / hardwood	0	0	338	0	338
Bishop pine	0	0	0	326	326
Knobcone pine / hardwood	0	0	620	0	620
Total	18,681	0	958	326	19,965
Total, softwood types	53,439	18,417	114,835	58,089	244,780
Hardwood types:					
Bigleaf maple	0	0	0	1,015	1,015
Red alder	0	0	3,147	2,482	5,629
Red alder / softwood	0	0	2,676	1,111	3,787
Pacific madrone	0	510	3,882	3,947	8,338
Pacific madrone / softwood	0	0	161	3,284	3,445
Giant chinkapin	0	0	197	0	197
Eucalyptus	0	0	0	188	188
Tanoak	234	0	30,615	27,620	58,469
Tanoak / softwood	0	0	25,498	8,325	33,823
Black cottonwood	0	0	33	0	33
Coast live oak	0	0	0	803	803
Coast live oak / softwood	0	0	0	212	212
Canyon live oak	0	489	1,716	2,528	4,733
Canyon live oak / softwood	0	626	0	730	1,355
Oregon white oak	0	0	0	2,888	2,888
Oregon white oak / softwood	0	0	0	2,602	2,602
California black oak	13	81	298	4,141	4,533
California black oak / softwood	0	0	652	2,684	3,337
Valley white oak	0	0	0	908	908
Interior live oak	0	159	233	141	532
Willow / softwood	0	0	0	54	54
California-laurel	0	0	1,076	1,962	3,038
California-laurel / softwood	0	0	469	354	823
Total, hardwood types	247	1,865	70,653	67,978	140,743
Nonstocked [c]	0	0	718	222	940
Total, all types	53,686	20,282	186,206	126,289	386,463

0 = none found
[a] Totals may be off because of rounding; data subject to sampling error.
[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.
[c] Nonstocked areas are less than 10-percent with live trees. Recent clearcuts scheduled for planting are included.

Table 20--Current net annual growth of sawtimber on timberland outside National Forests, by forest type and owner class, North Coast Resource Area, California, 1994 [a b]

Forest type	Other public	Forest industry	Other private	All owners
	Thousand board feet, Scribner rule			
Softwood types:				
Redwood--				
Redwood	94,568	380,673	91,883	567,124
Redwood / hardwood	7,139	126,295	62,214	195,648
Total	101,707	506,968	154,097	762,772
Douglas-fir--				
Douglas-fir	0	58,836	68,901	127,737
Douglas-fir / hardwood	9,370	60,358	80,917	150,644
Total	9,370	119,193	149,818	278,381
Fir-spruce--				
Grand fir	0	0	997	997
Grand fir / hardwood	0	0	2,982	2,982
Sitka spruce	0	0	2,763	2,763
Sitka spruce / hardwood	0	0	9,625	9,625
Total	0	0	16,366	16,366
Other softwood types--				
Ponderosa pine / hardwood	0	2,016	0	2,016
Bishop pine	0	0	2,445	2,445
Knobcone pine / hardwood	0	834	0	834
Total	0	2,850	2,445	5,295
Total, softwood types	111,076	629,011	322,726	1,062,813
Hardwood types:				
Bigleaf maple	0	0	8,298	8,298
Red alder	0	6,594	15,613	22,207
Red alder / softwood	0	9,275	5,172	14,447
Pacific madrone	443	18,484	18,034	36,961
Pacific madrone / softwood	0	708	18,165	18,873
Giant chinkapin	0	976	0	976
Eucalyptus	0	0	1,404	1,404
Tanoak	0	115,925	104,128	220,053
Tanoak / softwood	0	108,957	40,305	149,262
Coast live oak	0	0	3,782	3,782
Coast live oak / softwood	0	0	2,066	2,066
Canyon live oak	2,634	9,138	7,759	19,531
Canyon live oak / softwood	3,741	0	3,535	7,276
Oregon white oak	0	0	7,872	7,872
Oregon white oak / softwood	0	0	9,071	9,071
California black oak	479	538	16,636	17,654
California black oak / softwood	0	3,343	15,873	19,216
Valley white oak	0	0	1,451	1,451
Interior live oak	340	558	402	1,300
Willow / softwood	0	0	204	204
California-laurel	0	7,183	7,819	15,003
California-laurel / softwood	0	2,589	1,360	3,949
Total, hardwood types	7,637	284,268	288,949	580,853
Nonstocked [c]	0	1,804	1,068	2,872
Total, all types	118,713	915,083	612,742	1,646,538

0 = none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Board foot growth is not available on National Forest land.

[c] Nonstocked areas are less than 10-percent stocked with live trees. Includes recent clearcuts scheduled for planting.

Table 21-Average annual mortality of growing stock on timberland, by forest type and owner class, North Coast Resource Area, California, 1994 [a b]

Forest type	National Forest	Other public	Forest industry	Other private	All owners
			Thousand cubic feet		
Softwood types:					
Redwood--					
Redwood	0	1,345	5,159	1,505	8,009
Redwood / hardwood	0	143	2,112	986	3,241
Total	0	1,487	7,272	2,491	11,250
Douglas-fir--					
Douglas-fir	4,186	0	1,393	2,781	8,360
Douglas-fir / hardwood	0	524	1,659	2,676	4,859
Total	4,186	524	3,052	5,457	13,219
Fir-spruce--					
California red fir	32	0	0	0	32
Grand fir	0	0	0	102	102
Grand fir / hardwood	0	0	0	37	37
Sitka spruce	0	0	0	50	50
Sitka spruce / hardwood	0	0	0	240	240
Total	32	0	0	430	462
Other softwood types--					
Mixed conifer	2,974	0	0	0	2,974
Ponderosa pine / hardwood	0	0	62	0	62
Bishop pine	0	0	0	307	307
Knobcone pine / hardwood	0	0	41	0	41
Total	2,974	0	103	307	3,384
Total, softwood types	7,192	2,012	10,427	8,684	28,315
Hardwood types:					
Bigleaf maple	0	0	0	529	529
Red alder	0	0	828	904	1,732
Red alder / softwood	0	0	408	156	563
Pacific madrone	0	304	574	1,003	1,881
Pacific madrone / softwood	0	0	16	483	498
Giant chinkapin	0	0	28	0	28
Eucalyptus	0	0	0	108	108
Tanoak	0	0	4,569	5,980	10,549
Tanoak / softwood	0	0	2,889	1,247	4,136
Black cottonwood	0	0	10	0	10
Coast live oak	0	0	0	124	124
Coast live oak / softwood	0	0	0	42	42
Canyon live oak	0	220	346	596	1,162
Canyon live oak / softwood	0	225	0	186	410
Oregon white oak	0	0	0	794	794
Oregon white oak / softwood	0	0	0	375	375
California black oak	--	11	83	1,042	1,135
California black oak / softwood	0	0	118	368	485
Valley white oak	0	0	0	178	178
Interior live oak	0	35	58	21	114
Willow / softwood	0	0	0	19	19
California-laurel	0	0	157	567	724
California-laurel / softwood	0	0	36	27	63
Total, hardwood types	--	795	10,118	14,746	25,659
Nonstocked [c]	0	0	8	29	37
Total, all types	7,193	2,806	20,553	23,459	54,012

-- = less than 500,000 cubic feet, 0 = none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

[c] Nonstocked areas are less than 10-percent stocked with live trees. Includes recent clearcuts scheduled for planting.

Table 22--Average annual mortality of sawtimber on timberland outside National Forests, by forest type and owner class, North Coast Resource Area, California, 1994 [a] [b]

Forest type	Other public	Forest industry	Other private	All owners
	Thousand board feet, Scribner rule			
Softwood types:				
Redwood--				
Redwood	6,582	18,984	6,155	31,720
Redwood / hardwood	418	5,302	2,948	8,668
Total	7,000	24,286	9,103	40,388
Douglas-fir--				
Douglas-fir	0	5,490	11,572	17,061
Douglas-fir / hardwood	2,026	4,246	8,840	15,112
Total	2,026	9,735	20,412	32,174
Fir-spruce--				
Grand fir	0	0	564	564
Grand fir / hardwood	0	0	182	182
Sitka spruce	0	0	262	262
Sitka spruce / hardwood	0	0	1,128	1,128
Total	0	0	2,136	2,136
Other softwood types--				
Ponderosa pine / hardwood	0	181	0	181
Bishop pine	0	0	1,545	1,545
Knobcone pine / hardwood	0	92	0	92
Total	0	273	1,545	1,818
Total, softwood types	9,026	34,295	33,196	76,517
Hardwood types:				
Bigleaf maple	0	0	1,002	1,002
Red alder	0	1,954	1,594	3,548
Red alder / softwood	0	606	300	906
Pacific madrone	56	1,392	2,228	3,676
Pacific madrone / softwood	0	36	1,760	1,796
Giant chinkapin	0	105	0	105
Eucalyptus	0	0	587	587
Tanoak	0	10,356	11,006	21,361
Tanoak / softwood	0	6,702	3,535	10,236
Coast live oak	0	0	309	309
Coast live oak / softwood	0	0	92	92
Canyon live oak	268	856	1,048	2,172
Canyon live oak / softwood	1,000	0	315	1,314
Oregon white oak	0	0	907	907
Oregon white oak / softwood	0	0	1,248	1,248
California black oak	43	169	2,113	2,324
California black oak / softwood	0	419	903	1,322
Valley white oak	0	0	263	263
Interior live oak	30	123	35	189
Willow / softwood	0	0	104	104
California-laurel	0	329	1,154	1,483
California-laurel / softwood	0	154	76	230
Total, hardwood types	1,396	23,200	30,579	55,175
Nonstocked [c]	0	17	134	151
Total, all types	10,422	57,512	63,909	131,843

0 = none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Board foot mortality is not available on National Forest land.

[c] Nonstocked areas are less than 10-percent stocked with live trees. Recent clearcuts scheduled for planting are included.

Table 23--Land area by county and land class (metric), North Coast Resource Area, California, 1994 [a b]

County	Forest land						Non-forest [e]	All land [f]
	Timberland	Reserved timberland [c]	Withdrawn timberland [d]	Available other forest	Reserved other forest	Total forest		
	Thousand hectares							
Del Norte	130	59	--	30	34	253	7	260
Humboldt	602	82	1	109	4	798	121	919
Mendocino	527	12	0	123	2	664	248	912
Sonoma	123	2	0	55	6	186	230	416
Total	1,381	155	2	317	46	1,901	606	2,507

-- = less than 500 hectares, 0 = none found
[a] Totals may be off because of rounding; data subject to sampling error.
[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.
[c] May include forest land incapable of growing 20 or more cubic feet of wood per acre per year (mean annual increment at culmination in fully stocked, natural stands). Reserved land has been taken out of timber production status by statute or administrative regulation.
[d] Withdrawn timberland is timberland on National Forests that is being considered for permanent reserved status.
[e] Includes cropland, pasture and range, swampland, industrial and urban areas, powerline clearings, railroads, and all improved roads and highways; and water as classified by Forest Service standards, but defined by the Bureau of Census as land (water that is less than 4.5 acres and < 200 feet wide is called land by the Bureau).
[f] Source: U.S. Department of Commerce, 1990.

Table 24--Area of timberland by owner class and stand-size class (metric), North Coast Resource Area, California, 1994 [a b]

Owner	Sawtimber	Poletimber	Seedling-sapling	Not classified [c d]	All classes
	Thousand hectares				
National Forest	169	9	34	5	217
Other public	43	13	0	0	56
Forest industry	375	89	91	13	568
Other private	408	85	38	9	540
All owners	995	196	163	27	1,381

0 = none found
[a] Totals may be off because of rounding; data subject to sampling error.
[b] Data for National Forests were updated to 1992; data for other owners were collected in 1991-94.
[c] Unclassified stand-size classes are primarily for nonstocked stands, where less than 10-percent of the area is stocked with live trees.
[d] Stand-size class was not determined for hardwood types on National Forest land.

Table 25--Area of reserved timberland and other forest land, by forest type and owner class, North Coast Resource Area, California, 1994 [a b]

Land class and forest type	National Forest	Other public	Forest industry	Other private	All owners
			Thousand acres		
Reserved timberland: [c]					
Redwood	2	129	0	1	132
Douglas-fir	106	37	0	2	144
Knobcone pine	0	--	0	0	--
Mixed conifer	34	5	0	0	39
Spruce	0	7	0	0	7
Lodgepole pine	0	--	0	0	--
Red alder	0	--	0	0	--
Tanoak	0	52	0	3	55
Other hardwood types	3	0	0	0	3
Total	145	230	0	6	381
Reserved other forest:					
Douglas-fir	48	0	0	0	48
Cypress	0	--	0	0	--
Mixed conifer	18	0	0	0	18
Coastal lodgepole pine	0	--	0	0	--
Riparian	0	2	0	0	2
Chaparral	0	5	0	--	5
Hardwood types	2	0	0	0	2
Oaks	0	10	0	--	10
Unclassified	28	0	0	0	28
Total	96	17	0	--	112
Total, reserved	241	247	0	6	493
Unreserved other forest:					
Douglas-fir	50	0	0	3	53
Knobcone pine	1	0	0	0	1
Mixed conifer	16	0	0	0	16
Cypress	0	0	3	0	3
Bigleaf maple	0	0	0	4	4
Pacific madrone	0	0	0	12	12
California-laurel	0	0	0	11	11
Buckeye	0	0	0	2	2
Oregon ash	0	0	0	7	7
Oaks	0	15	47	354	416
Other hardwood types	29	0	0	0	29
Chaparral	0	60	6	128	194
Unclassified	12	0	4	17	33
Nonstocked	0	0	0	7	7
Total, unreserved	108	76	59	545	787

-- = less than 500 acres, 0 = none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

[c] May include forest land incapable of growing 20 or more cubic feet of wood per acre per year (mean annual increment at culmination in fully stocked, natural stands).

Table 26--Area, net volume of growing stock, and net volume of sawtimber on timberland, by stand age and owner class, North Coast Resource Area, California, 1994 [a b]

Stand age	National Forest			Other public			Forest industry			Other private			All owners		
	Area	Growing stock volume	Sawtimber volume, Scribner rule	Area	Growing stock volume	Sawtimber volume, Scribner rule	Area	Growing stock volume	Sawtimber volume, Scribner rule	Area	Growing stock volume	Sawtimber volume, Scribner rule	Area	Growing stock volume	Sawtimber volume, Scribner rule
	Thousand acres	*Thousand cubic feet*	*Thousand board feet*	*Thousand acres*	*Thousand cubic feet*	*Thousand board feet*	*Thousand acres*	*Thousand cubic feet*	*Thousand board feet*	*Thousand acres*	*Thousand cubic feet*	*Thousand board feet*	*Thousand acres*	*Thousand cubic feet*	*Thousand board feet*
Even-aged:															
0-9	27	0	0	0	0	0	87	21,882	80,082	30	14,473	38,723	144	36,354	118,804
10-19	0	0	0	10	4,446	6,993	90	63,083	167,645	44	11,927	25,802	143	79,456	200,439
20-29	0	0	0	0	0	0	121	197,111	671,418	37	36,160	54,516	158	233,271	725,935
30-39	0	0	0	15	68,688	318,012	157	562,803	2,077,112	174	453,665	1,430,699	346	1,085,156	3,825,823
40-49	0	0	0	0	0	0	149	714,914	2,739,497	78	398,539	1,270,856	228	1,113,454	4,010,353
50-59	33	109,200	579,000	13	140,895	706,595	95	745,356	3,601,523	129	447,007	1,685,515	270	1,442,459	6,572,633
60-69	0	0	0	0	0	0	123	732,705	3,800,221	113	446,870	1,913,627	235	1,179,575	5,713,848
70-79	9	29,583	131,275	12	120,825	646,501	75	325,413	1,447,585	83	281,625	991,655	179	757,447	3,217,015
80-89	--	389	2,100	2	6,986	12,919	30	96,282	295,388	57	282,449	1,194,936	89	386,106	1,505,343
90-99	4	5,234	29,424	0	0	0	17	44,416	177,750	72	191,647	721,651	93	241,298	928,825
100-109	49	238,313	1,327,449	0	0	0	17	68,878	189,649	22	84,947	245,456	88	392,138	1,762,554
110-119	80	184,208	1,108,557	0	0	0	8	32,657	114,057	0	0	0	88	216,865	1,222,614
120-129	66	348,378	1,949,183	0	0	0	0	0	0	2	5,754	35,905	68	354,132	1,985,088
130-139	30	113,863	665,204	0	0	0	6	13,563	28,206	4	7,575	11,525	40	135,000	704,935
140-149	--	47	254	0	0	0	0	0	0	0	0	0	--	47	254
150-159	102	724,705	4,164,522	0	0	0	0	0	0	5	11,708	39,762	107	736,413	4,204,284
160-169	22	309,899	1,779,581	0	0	0	6	37,238	207,374	0	0	0	28	347,137	1,986,955
170-179	28	220,717	1,330,958	0	0	0	0	0	0	0	0	0	28	220,717	1,330,958
180-189	28	190,624	1,178,361	0	0	0	0	0	0	0	0	0	28	190,624	1,178,361
190-199	54	595,829	3,584,107	0	0	0	8	75,778	399,443	0	0	0	62	671,607	3,983,550
200-299	0	0	0	0	0	0	0	0	0	13	94,727	619,695	13	94,727	619,695
300 +	1	15,510	95,367	6	54,297	247,643	13	111,358	666,482	4	36,424	180,393	24	217,589	1,189,886
Uneven-aged:															
< 100	0	0	0	70	322,135	1,352,000	312	1,001,776	3,718,166	327	1,155,261	4,203,439	709	2,479,172	9,273,604
100 +	0	0	0	12	149,557	804,550	53	298,559	1,539,621	107	615,765	3,334,645	172	1,063,880	5,678,816
Nonstocked	0	0	0	0	0	0	38	34,753	155,148	36	38,620	172,428	74	73,373	327,576
Total, all ages	534	3,086,499	17,925,342	140	867,830	4,095,213	1,402	5,178,524	22,076,365	1,336	4,615,143	18,171,226	3,412	13,747,996	62,268,146

-- = less than 500 acres; 0 = none found

[a] Totals may be off because of rounding, data subject to sampling error.

[b] National Forest data are updated to 1992; data for all other owners were collected in 1991-94.

Table 27--Volume of growing stock and sawtimber on timberland, by county, owner class, and species, North Coast Resource Area, California, 1994 [a b]

County	National Forest			Other public			Forest industry			Other private			All owners		
	Softwood species	Hardwood species	All species	Softwood species	Hardwood species	All species	Softwood species	Hardwood species	All species	Softwood species	Hardwood species	All species	Softwood species	Hardwood species	All species
							Million cubic feet								
Growing stock:															
Del Norte	757	124	881	--	--	--	201	111	312	78	45	123	1,036	280	1,316
Humboldt	1,609	211	1,820	69	22	91	2,155	511	2,666	1,140	1,006	2,146	4,973	1,750	6,723
Mendocino	350	35	386	610	134	744	1,267	749	2,016	701	648	1,349	2,928	1,566	4,494
Sonoma	0	0	0	21	12	33	141	43	184	707	290	997	869	345	1,214
Total	2,716	370	3,087	700	168	868	3,764	1,414	5,178	2,626	1,989	4,615	9,807	3,942	13,748
							Million board feet, Scribner rule								
Sawtimber:															
Del Norte	4,608	438	5,046	--	--	--	1,007	273	1,280	395	100	495	6,010	811	6,821
Humboldt	9,828	764	10,592	392	42	434	11,007	1,068	12,075	6,112	2,444	8,556	27,339	4,318	31,657
Mendocino	2,155	133	2,288	3,317	234	3,551	6,056	1,826	7,882	3,191	1,407	4,598	14,719	3,600	18,319
Sonoma	0	0	0	101	10	111	745	94	839	4,037	485	4,522	4,883	589	5,472
Total	16,591	1,335	17,926	3,810	286	4,096	18,815	3,261	22,076	13,735	4,436	18,171	52,950	9,318	62,268
							Million cubic meters								
Growing stock:															
Del Norte	21	4	25	--	--	--	6	3	9	2	1	3	29	8	37
Humboldt	46	6	52	2	1	3	61	14	75	32	28	61	141	50	190
Mendocino	10	1	11	17	4	21	36	21	57	20	18	38	83	44	127
Sonoma	0	0	0	1	--	1	4	1	5	20	8	28	25	10	34
Total	77	10	87	20	5	25	107	40	147	74	56	131	278	112	389

-- = less than 500,000 cubic feet, 500,000 board feet, or 500,000 cubic meters; 0 = none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

Table 28--Current net annual growth, average annual mortality, and average annual removals of growing stock on timberland, by species and owner, North Coast Resource Area, California, 1994 [a b]

Species	National Forest [c]		Outside National Forests: Other public			Outside National Forests: Forest industry			Outside National Forests: Other private			Outside National Forests: Total, outside National Forests			All owners [c]	
	Current net annual growth	Average annual mortality	Current net annual growth [d]	Average annual mortality	Average annual removals	Current net annual growth [d]	Average annual mortality	Average annual removals	Current net annual growth [d]	Average annual mortality	Average annual removals	Current net annual growth [d]	Average annual mortality	Average annual removals	Current net annual growth [d]	Average annual mortality
	Thousand cubic feet															
Softwoods:																
White fir	5,808	1,172	0	0	0	0	0	0	0	0	0	0	0	0	5,808	1,172
Grand fir	0	0	114	244	329	5,507	1,026	1,432	1,176	380	0	6,797	1,650	1,761	6,797	1,650
California red fir	1,380	223	0	0	0	0	0	0	0	0	0	0	0	0	1,380	223
Port-Orford-cedar	729	0	0	0	0	41	26	827	18	48	0	59	74	827	788	74
Incense-cedar	1,189	0	0	0	0	41	4	0	45	4	0	86	8	0	1,275	8
Sitka spruce	0	0	0	0	0	0	0	245	2,455	323	0	2,455	323	245	2,455	323
Brewer spruce	142	0	0	0	0	0	0	0	0	0	0	0	0	0	142	0
Knobcone pine	--	0	0	0	0	364	27	0	0	0	0	364	27	0	364	27
Sugar pine	1,512	296	0	0	0	516	104	328	100	166	135	616	270	464	2,128	566
Bishop pine	0	0	67	203	0	608	96	96	539	564	0	1,214	864	96	1,214	864
Ponderosa pine	2,230	339	-3	58	0	246	85	0	994	337	0	1,236	480	0	3,466	819
Monterey pine	0	0	0	0	0	141	8	228	0	0	0	141	8	228	141	8
Douglas-fir	40,296	4,400	4,426	699	2,744	53,104	5,554	40,901	50,805	6,666	8,028	108,335	12,919	51,673	148,631	17,319
Redwood	400	0	12,555	423	3,917	81,383	2,716	108,447	24,157	662	5,626	118,096	3,801	117,989	118,496	3,801
Western redcedar	0	0	0	0	0	55	8	0	0	0	0	55	8	0	55	8
California-nutmeg	0	0	33	27	0	37	42	0	-6	6	0	64	76	0	64	76
Western hemlock	0	0	46	24	0	859	142	256	354	126	0	1,259	292	256	1,259	292
Total	53,686	6,430	17,238	1,679	6,989	142,902	9,838	152,759	80,636	9,281	13,790	240,776	20,798	173,539	294,462	27,228
Hardwoods:																
Bigleaf maple	0	0	57	11	0	870	363	341	670	394	0	1,597	768	341	1,597	768
Red alder	0	0	0	0	0	5,977	2,167	3,228	3,780	1,697	0	9,757	3,864	3,228	9,757	3,864
Pacific madrone	0	319	840	420	0	3,696	1,508	2,845	8,056	3,323	405	12,592	5,251	3,249	12,592	5,570
Giant chinkapin	0	0	0	0	0	354	57	0	246	26	0	599	83	0	600	83
Eucalyptus	0	0	0	0	0	-15	42	0	120	27	0	105	70	0	105	70
Oregon ash	0	0	0	0	0	0	0	0	25	22	0	25	22	0	25	22
Tanoak	0	0	1,372	273	0	29,860	5,695	16,951	22,340	4,482	1,412	53,572	10,450	18,363	53,572	10,450
Black cottonwood	0	0	0	0	0	33	10	0	73	15	0	105	25	0	105	25
Coast live oak	0	0	0	0	0	0	0	0	277	120	0	277	120	0	277	120
Canyon live oak	0	0	399	222	0	741	284	108	1,951	505	0	3,091	1,010	108	3,091	1,010
Oregon white oak	0	0	123	39	0	123	33	21	2,325	1,030	82	2,572	1,102	103	2,572	1,102
California black oak	0	444	72	138	0	419	167	0	2,452	1,265	117	2,943	1,570	117	2,943	2,014
Valley white oak	0	0	0	0	0	0	0	0	421	113	0	421	113	0	421	113
Interior live oak	0	0	35	9	0	70	69	0	219	66	0	324	144	0	324	144
California-laurel	0	0	145	16	0	1,176	322	754	2,699	1,094	34	4,021	1,431	788	4,020	1,431
Total	0	763	3,044	1,128	0	43,304	10,715	24,247	45,653	14,178	2,049	92,001	26,021	26,296	92,001	26,784
All species	53,686	7,193	20,282	2,806	6,989	186,206	20,553	177,006	126,289	23,459	15,839	332,776	46,819	199,834	386,463	54,012

-- = less than 500 cubic feet; 0 = none found

[a] Totals may be off because of rounding, data subject to sampling error.

[b] Data for National Forests were updated to 1992; data for other owners were collected during 1991-94.

[c] Annual removal volume and hardwood growth volume are not available for National Forests.

[d] Negative net annual growth is the result of annual mortality exceeding gross annual growth.

Table 29--Current net annual growth, average annual mortality, and average annual removals of sawtimber on timberland outside National Forests, by species and owner class, North Coast Resource Area, California, 1994 [a b]

Species	Other public			Forest industry			Other private			All owners		
	Current net annual growth	Average annual mortality	Average annual removals	Current net annual growth [c]	Average annual mortality	Average annual removals	Current net annual growth	Average annual mortality	Average annual removals	Current net annual growth	Average annual mortality	Average annual removals
	Thousand board feet, Scribner rule											
Softwoods:												
Grand fir	992	1,473	1,640	27,525	3,809	8,283	7,298	2,085	0	35,815	7,367	9,923
Port-Orford-cedar	0	0	0	2,787	111	4,211	232	160	0	3,019	271	4,211
Incense-cedar	0	0	0	0	0	0	207	14	0	207	14	0
Sitka spruce	0	0	0	0	0	1,587	15,616	1,717	0	15,616	1,717	1,587
Knobcone pine	0	0	0	729	37	0	0	0	0	729	37	0
Sugar pine	0	0	0	2,041	404	1,642	627	1,084	787	2,668	1,488	2,429
Bishop pine	708	1,058	0	3,271	493	420	4,141	2,966	0	8,119	4,516	420
Ponderosa pine	42	373	0	1,660	322	0	5,783	1,558	0	7,485	2,253	0
Monterey pine	0	0	0	682	30	1,291	0	0	0	682	30	1,291
Douglas-fir	28,263	3,921	17,749	278,502	21,619	246,640	282,333	27,467	43,966	589,099	53,006	308,355
Redwood	79,483	2,005	20,061	468,770	11,611	636,652	134,298	2,875	29,093	682,550	16,491	685,805
California-nutmeg	217	136	0	86	98	0	0	0	0	302	234	0
Western hemlock	329	144	0	3,632	623	887	1,613	423	0	5,575	1,190	887
Total	110,033	9,108	39,450	789,684	39,157	901,612	452,148	40,349	73,846	1,351,865	88,613	1,014,908
Hardwoods:												
Bigleaf maple	124	19	0	581	110	895	6,404	767	0	7,110	897	895
Red alder	0	0	0	12,169	4,349	11,295	19,685	2,767	0	31,854	7,116	11,295
Pacific madrone	2,991	376	0	14,852	2,504	7,959	31,718	5,467	1,023	49,561	8,347	8,982
Giant chinkapin	0	0	0	1,279	88	0	854	85	0	2,133	173	0
Eucalyptus	0	0	0	-26	217	0	862	160	0	836	377	0
Tanoak	2,224	308	0	84,173	9,727	51,491	73,844	8,539	3,934	160,240	18,574	55,425
Black cottonwood	0	0	0	0	0	0	506	90	0	506	90	0
Coast live oak	0	0	0	0	0	0	752	212	0	752	212	0
Canyon live oak	2,447	277	0	7,505	510	0	6,784	714	0	16,736	1,500	0
Oregon white oak	319	35	0	147	52	0	2,964	784	32	3,429	872	32
California black oak	285	258	0	1,171	291	0	6,308	1,987	239	7,764	2,537	239
Valley white oak	0	0	0	0	0	0	797	105	0	797	105	0
Interior live oak	49	6	0	283	160	0	471	125	0	802	291	0
California-laurel	240	34	0	3,266	347	1,231	8,647	1,757	0	12,153	2,138	1,231
Total	8,680	1,314	0	125,398	18,355	72,870	160,595	23,560	5,228	294,673	43,229	78,099
All species	118,713	10,422	39,450	915,083	57,512	974,482	612,742	63,909	79,075	1,646,538	131,843	1,093,007

0 = none found
[a] Totals may be off because of rounding, data subject to sampling error.
[b] Board foot growth, mortality, and removal volume are not available for National Forests.
[c] Negative net annual growth is the result of annual mortality exceeding gross annual growth.

Table 30--Changes in timberland area outside National Forests, by owner class, North Coast Resource Area, California, 1984, 1994 [a b]

Description of change	Other public	Forest industry	Other private	All owners
		Thousand acres		
Timberland area published in 1984 [c]	263	1,301	1,430	2,994
New estimate of timberland area for 1984, based on remeasured plots only [d]	270	1,298	1,370	2,938
Adjustments to 1984 area:				
Reclassification of Native American ownership (from public to private)	- 90	--	90	--
Updates to owner or land class [e]	21	89	2	112
Adjusted timberland area for 1984 [f]	**201**	**1,387**	**1,462**	**3,050**
Area change (during 1984 -1994) due to:				
Changes in land class--				
Timberland to rights-of-way	--	- 33	- 8	- 41
Timberland to urban	--	--	- 21	- 21
Timberland to agriculture	--	--	- 17	- 17
Rights-of-way to timberland	--	24	--	24
Agriculture to timberland	--	--	8	8
Net change	--	- 8	- 38	- 47
Changes in inventory area--				
To reserved timberland [g]	- 57	--	- 7	- 64
Changes in ownership--				
From other public	- 9	9	--	--
From forest industry	--	- 27	27	--
From other private	11	37	- 49	--
Net change	2	20	- 22	--
Timberland area in 1994,[f] based on remeasured plots only	**147**	**1,398**	**1,395**	**2,939**
Timberland area in 1994, based on all sample plots	140	1,402	1,336	2,878

-- = none found or less than 500 acres

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Negative values are losses of timberland and positive values are gains in timberland. Losses are shown by the 1984 owner, and gains are shown by the 1994 owner.

[c] Source: Timber resource statistics for the North Coast Resource Area of California, Lloyd and others 1986.

[d] The modified sampling design for the 1991-94 inventory produced a different set of plots for the sample, which includes existing plots that were remeasured and new plots. Only remeasured plots were used to create this table. The 1984 data were recompiled by using the current (1994) procedures. Updates to the original classification of owner and land class were incorporated into the new version of the 1984 data. The adjusted 1984 data also reflect the new Bureau of Census (1990) land area figures.

[e] The classification of owner or land class assigned to a plot in 1984 was verified during the 1994 inventory. In some cases, updates were made to the 1984 data when new or more accurate information was available.

[f] Use the adjusted 1984 data and the 1994 remeasured plot data (bolded) when analyzing for periodic change.

[g] 64,000 acres entered the King Range Conservation Area, a BLM reserve.

Table 31--Changes in volume of growing stock on timberland outside National Forests, by species group and owner class, North Coast Resource Area, California, 1984, 1994 [a b c]

Description of change	Softwood species				Hardwood species			
	Other public	Forest industry	Other private	All owners	Other public	Forest industry	Other private	All owners
	Million cubic feet							
Volume published in 1984 [d]	707	4,300	2,513	7,520	392	1,041	1,642	3,075
New estimate of volume for 1984, based on remeasured plots only [e]	926	4,130	2,296	7,352	394	1,023	1,651	3,068
Adjustments to 1984 volume:								
Reclassification of Native American ownership (from public to private)	-250	--	250	--	-134	--	134	--
Updates to owner or land class [f]	124	103	-243	-16	-43	189	-58	88
Adjusted volume for 1984 [g]	**800**	**4,233**	**2,303**	**7,336**	**217**	**1,212**	**1,727**	**3,156**
Volume changes due to:								
Changes in land class--								
Timberland to nonforest	--	--	-8	-8	--	-55	-5	-60
Nonforest to timberland	--	20	--	20	--	--	--	--
Net change	--	20	-8	12	--	-55	-5	-60
Change in inventory area--								
To reserved timberland	-242	--	-12	-254	-71	--	--	-71
From reserved timberland	--	--	--	--	--	--	--	--
Net change	-242	--	-12	-254	-71	--	--	-71
Changes in owner--								
From other public	-24	24	--	--	-17	17	--	--
From forest industry	--	-59	59	--	--	-24	24	--
From other private	58	68	-126	--	26	106	-131	--
Net change	33	34	-68	--	9	99	-108	--
Growth, mortality, and harvest--								
Periodic gross growth	189	1,494	839	2,521	43	471	555	1,068
Periodic mortality	--	-54	-48	-101	-4	-57	-63	-124
Periodic removals	-96	-1,915	-157	-2,168	--	-283	-36	-319
Net change	93	-475	635	252	39	130	457	626
Total volume in 1994, [g] based on remeasured plots only	**684**	**3,812**	**2,851**	**7,347**	**193**	**1,386**	**2,071**	**3,651**
Total volume in 1994, based on all sample plots	700	3,764	2,626	7,090	168	1,414	1,989	3,571

-- = none found or less than 500,000 cubic feet

[a] Includes growing-stock trees > 5 inches d.b.h.

[b] Totals may be off because of rounding; data subject to sampling error.

[c] Negative values are losses of volume and positive values are gains in volume. Losses are shown by the 1984 owner and gains are shown by the 1994 owner.

[d] Source: Timber resource statistics of the North Coast Resource Area of California, Lloyd and others 1986.

[e] The modified sampling design for the 1991-94 inventory produced a different set of plots for the sample, which includes existing plots that were remeasured and new plots. Only remeasured plots were used to create this table. The 1984 data were recompiled by using the current (1994) procedures. Updates to the original classification of owner and land class were incorporated into the new version of the 1984 data. The adjusted 1984 data also reflect the new Bureau of Census (1990) land area figures.

[f] The classification of owner or land class assigned to a plot in 1984 was verified during the 1994 inventory. In some cases, updates were made to the 1984 data when new or more accurate information was available.

[g] Use the adjusted 1984 data and the 1994 remeasured plot data (bolded in table) when analyzing for periodic change.

Table 32--Changes in volume of sawtimber on timberland outside National Forests, by species group and owner class, North Coast Resource Area, California, 1984, 1994 [a b c]

Description of change	Softwood species				Hardwoods species			
	Other public	Forest industry	Other private	All owners	Other public	Forest industry	Other private	All owners
	Million board feet, Scribner rule							
Volume published in 1984 [d]	3,851	21,982	12,884	38,717	919	2,271	3,340	6,530
New estimate of volume for 1984, based on remeasured plots only [e]	5,031	21,949	11,796	38,776	924	2,376	3,489	6,789
Adjustments to 1984 volume:								
Reclassification of Native American ownership (from public to private)	-1,469	--	1,469	--	-351	--	351	--
Updates to owner or land class [f]	845	301	-1,125	21	-170	474	-112	192
Adjusted volume for 1984 [g]	**4,407**	**22,250**	**12,140**	**38,797**	**403**	**2,850**	**3,728**	**6,981**
Volume changes due to:								
Change in land class--								
Timberland to nonforest	--	--	-47	-47	--	-241	-6	-247
Nonforest to timberland	--	90	--	90	--	--	--	--
Net change	--	90	-47	43	--	-241	-6	-247
Changes in inventory area--								
To reserved timberland	-1,483	--	-56	-1,540	-186	--	--	-186
From reserved timberland	--	--	--	--	--	--	--	--
Net change	-1,483	--	-56	-1,540	-186	--	--	-186
Changes in ownership--								
From other public	-122	122	--	--	-32	32	--	--
From forest industry	--	-287	287	--	--	-41	41	--
From other private	330	371	-701	--	40	353	-393	--
Net changes	208	205	-414	--	8	343	-351	--
Growth, mortality, and harvest--								
Periodic gross growth	1,121	8,007	4,400	13,528	103	1,206	1,353	2,662
Periodic mortality	--	-235	-249	-484	--	-136	-141	-
Periodic removals	-542	-11,239	-838	-12,619	--	-850	-103	-953
Net change	579	-3,468	3,313	425	103	221	1,109	1,432
Total volume in 1994, [g] based on remeasured plots only	**3,711**	**19,077**	**14,936**	**37,725**	**328**	**3,173**	**4,479**	**7,980**
Total volume in 1994, based on all sample plots	3,810	18,815	13,735	36,360	286	3,261	4,437	7,984

-- = none found or less than 500,000 board feet

[a] Includes sawtimber softwood trees ≥ 9 inches d.b.h. and sawtimber hardwood trees ≥ 11 inches d.b.h.

[b] Totals may be off because of rounding; data subject to sampling error.

[c] Negative values are losses of volume and positive values are gains in volume. Losses are shown by the 1984 owner and gains are shown by the 1994 owner.

[d] Source: Timber resource statistics of the North Coast Resource Area of California, Lloyd and others 1986.

[e] The modified sampling design for the 1991-94 inventory produced a different set of plots for the sample, which includes existing plots that were remeasured and new plots. Only remeasured plots were used to create this table. The 1984 data were recompiled by using the current (1994) procedures. Updates to the original classification of owner and land class were incorporated into the new version of the 1984 data. The adjusted 1984 data also reflect the new Bureau of Census (1990) land area figures.

[f] The classification of owner or land class assigned to a plot in 1984 was verified during the 1994 inventory. In some cases, updates were made to the 1984 data when new or more accurate information was available.

[g] Use the adjusted 1984 data and the 1994 remeasured plot data (bolded in table) when analyzing for periodic change.

Table 33--Area, volume of growing stock, and volume of sawtimber on timberland outside National Forests, by forest type, North Coast Resource Area, California, 1984, 1994 [a b]

Forest type	Outside National Forests					
	1981-84			1991-94		
	Area	Growing stock	Sawtimber	Area	Growing stock	Sawtimber
	Thousand acres	*Million cubic feet*	*Million board feet*	*Thousand acres*	*Million cubic feet*	*Million board feet*
Softwood types:						
Redwood--						
Redwood	509	3,386	17,406	459	3,351	17,063
Redwood / hardwood	276	1,544	7,575	214	1,072	4,875
Total	785	4,930	24,981	673	4,423	21,938
Douglas-fir--						
Douglas-fir	144	751	4,224	214	819	4,153
Douglas-fir / hardwood	313	1,122	4,860	263	1,134	5,032
Total	457	1,873	9,083	477	1,953	9,185
Mixed conifer--						
Mixed conifer	9	8	34	0	0	0
Mixed conifer / hardwood	8	11	51	0	0	0
Total	17	19	85	0	0	0
Ponderosa pine--						
Ponderosa pine / hardwood	7	12	32	7	14	39
Total	7	12	32	7	14	39
Fir-spruce--						
Grand fir	11	14	79	5	17	94
Grand fir / hardwood	0	0	0	9	16	79
Sitka spruce	6	15	73	6	36	196
Total	17	30	152	20	69	369
Total, softwood types	1,282	6,864	34,333	1,176	6,458	31,531
Hardwood types:						
Bigleaf maple	24	38	125	24	52	173
Red alder	31	53	124	46	87	179
Red alder / conifer	18	6	21	25	74	230
Pacific madrone	157	380	1,134	128	457	1,488
Pacific madrone / softwood	32	98	285	46	157	547
Giant chinkapin	6	0	0	9	10	37
Tanoak	684	1,633	5,552	607	1,668	5,145
Tanoak / softwood	177	384	1,432	270	809	3,062
Black cottonwood	9	0	0	9	1	0
Coast live oak	13	18	59	13	24	88
Coast live oak / softwood	6	12	35	6	14	45
Canyon live oak	78	220	506	88	307	767
Canyon live oak / softwood	27	111	470	20	59	246
Oregon white oak	146	203	355	117	211	376
Oregon white oak / softwood	15	32	118	38	70	233
California black oak	114	209	585	114	258	735
California black oak / softwood	35	65	198	25	68	230
Valley white oak	22	50	98	22	64	126
Interior live oak	19	30	69	19	37	89
Willow	0	0	0	8	0	0
Willow / softwood	6	3	16	6	3	18
California-laurel	44	66	202	51	84	261
California-laurel / softwood	6	5	21	6	10	39
Total, hardwood types	1,669	3,616	11,404	1,696	4,523	14,113
Nonstocked	100	11	41	68	16	62
Total, all types	3,050	10,491	45,777	2,939	10,998	45,704

0 = none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Data are summarized from remeasured plots only. All data from the 1981-84 inventory were recompiled with the same procedures and methods used in the 1991-94 inventory. See text for discussion of data used for change analysis.

Table 34--Volume of growing stock and volume of sawtimber on timberland outside National Forests, by species and year, North Coast Resource Area, California, 1984, 1994 [a] [b]

	Outside National Forests			
	1981-84		1991-94	
Species	Growing stock	Sawtimber	Growing stock	Sawtimber
	Million cubic feet	*Million board feet*	*Million cubic feet*	*Million board feet*
Softwoods:				
Grand fir	103	464	148	691
Port-Orford-cedar	16	76	7	29
Incense-cedar	--	2	1	2
Sitka spruce	20	94	43	234
Knobcone pine	0	0	3	5
Sugar pine	41	234	32	185
Bishop pine	38	190	51	277
Ponderosa pine	41	198	49	239
Monterey pine	3	14	3	10
Douglas-fir	2,994	16,197	3,106	16,033
Redwood	4,049	21,201	3,856	19,831
California-nutmeg	6	23	8	27
Western hemlock	26	103	41	162
Total	7,336	38,797	7,347	37,725
Hardwoods:				
Bigleaf maple	62	123	78	147
Red alder	130	246	198	395
Pacific madrone	688	1,495	764	1,707
Water birch	1	4	2	5
Giant chinkapin	18	53	22	73
Eucalyptus	5	24	4	19
Tanoak	1,346	3,524	1,547	3,851
Coast live oak	17	30	21	38
Canyon live oak	211	347	233	407
Oregon white oak	193	174	223	229
California black oak	262	504	293	579
Valley white oak	31	55	39	69
Interior live oak	25	53	30	65
California-laurel	167	349	198	397
Total	3,155	6,981	3,651	7,980
All species	10,491	45,778	10,998	45,705

-- = less than 500,000 cubic feet, 0 = none found

[a] Totals may be off because of rounding; data subject to sampling error.

[b] Data are from remeasured plots only. All data from the 1981-84 inventory were recompiled with the same procedures and methods used in the 1991-94 inventory. See text for discussion of data used for change analysis.

Table 35--Timber harvest volume by county and year, North Coast Resource Area, California, 1947-77 [a]

Year	County				
	Del Norte	Humboldt	Mendocino	Sonoma	Total
	Thousand board feet, local scale [b]				
1947	23,398	481,345	211,801	20,949	737,493
1948	34,471	863,138	315,631	40,480	1,253,720
1949	61,361	819,783	364,772	48,378	1,294,294
1950	141,995	861,685	509,915	55,253	1,568,848
1951	174,451	982,660	752,964	76,609	1,986,684
1952	203,834	1,060,887	805,437	75,677	2,145,835
1953	288,912	1,324,405	927,191	84,321	2,624,829
1954	240,193	1,264,122	993,734	133,887	2,631,936
1955	305,741	1,298,346	1,030,321	213,455	2,847,863
1956	234,779	1,249,618	990,027	212,058	2,686,482
1957	201,179	1,211,925	791,690	208,365	2,413,159
1958	283,132	1,521,650	795,632	189,417	2,789,831
1959	336,862	1,570,108	632,121	257,428	2,796,519
1960	258,028	1,135,416	635,473	206,446	2,235,363
1961	229,669	1,264,964	683,262	140,754	2,318,649
1962	192,287	1,446,944	726,596	157,012	2,522,839
1963	283,132	1,247,281	634,145	151,022	2,315,580
1964	336,862	1,367,838	611,328	118,796	2,434,824
1965	258,028	1,301,296	540,226	116,676	2,216,226
1966	229,669	1,220,336	486,948	80,745	2,017,698
1967	303,846	1,134,383	493,473	59,318	1,991,020
1968	302,014	1,225,648	560,985	76,936	2,165,583
1969	269,801	1,165,685	525,123	77,893	2,038,502
1970	210,466	1,006,072	478,471	54,398	1,749,407
1971	236,027	1,017,805	491,336	67,180	1,812,348
1972	240,165	1,087,855	540,345	66,414	1,934,779
1973	216,881	1,098,911	529,869	66,195	1,911,856
1974	229,769	1,023,604	519,279	76,542	1,849,194
1975	208,885	955,313	490,542	68,432	1,723,172
1976	242,547	959,154	573,106	50,117	1,824,924
1977	265,391	903,527	617,393	33,248	1,819,559

[a] Miscellaneous harvest values that are not recorded in thousand board-foot units are not included in this summary; the data include no cull, fuelwood, hardwood chips or logs, poles, pilings, or posts.
[b] Various log rules were used in California; no attempt was made to convert the data to a common base; however, most timber companies in the North Coast Resource Area use the short-log Scribner rule.

Source: Data for the years 1948-77, "Production of California timber operators", State Forest notes published annually by the California Department of Forestry.

Table 36--Timber harvest volume by county, year, and owner group, North Coast Resource Area, California, 1978-94 [a]

Year	Owner group	County				
		Del Norte	Humboldt	Mendocino	Sonoma	Total
		Thousand board feet, local scale [b]				
1978	Private	314,050	518,492	412,713	27,535	1,272,790
	Public	40,961	69,086	41,940	0	151,987
	Total	355,011	587,578	454,653	27,535	1,424,777
1979	Private	248,154	399,983	309,339	30,947	988,423
	Public	45,361	64,984	24,605	6	134,956
	Total	293,515	464,967	333,944	30,953	1,123,379
1980	Private	201,797	342,898	322,617	22,991	890,303
	Public	27,631	82,331	20,583	0	130,545
	Total	229,428	425,229	343,200	22,991	1,020,848
1981	Private	163,151	335,544	294,357	21,194	814,246
	Public	17,786	72,983	52,548	3,103	146,420
	Total	180,937	408,527	346,905	24,297	960,666
1982	Private	108,392	330,928	278,301	15,381	733,002
	Public	7,322	30,962	31,935	0	70,219
	Total	115,714	361,890	310,236	15,381	803,221
1983	Private	144,945	414,520	350,721	23,714	933,900
	Public	12,486	74,915	35,993	0	123,394
	Total	157,431	489,435	386,714	23,714	1,057,294
1984	Private	174,475	405,494	412,357	17,783	1,010,109
	Public	24,950	64,161	36,954	0	126,065
	Total	199,425	469,655	449,311	17,783	1,136,174
1985	Private	175,716	455,621	377,766	25,960	1,035,063
	Public	27,151	91,710	47,177	0	166,038
	Total	202,867	547,331	424,943	25,960	1,201,101
1986	Private	156,847	570,759	388,681	25,639	1,141,926
	Public	32,161	86,573	34,361	10	153,105
	Total	189,008	657,332	423,042	25,649	1,295,031
1987	Private	145,736	644,190	435,264	26,346	1,251,536
	Public	32,264	128,631	42,100	29	203,024
	Total	178,000	772,821	477,364	26,375	1,454,560
1988	Private	142,395	641,132	408,867	37,900	1,230,294
	Public	49,521	101,921	65,426	0	216,868
	Total	191,916	743,053	474,293	37,900	1,447,162
1989	Private	114,541	576,552	463,587	50,486	1,205,166
	Public	8,352	86,666	51,712	0	146,730
	Total	122,893	663,218	515,299	50,486	1,351,896
1990	Private	143,448	583,779	398,274	52,225	1,177,726
	Public	27,814	26,083	24,458	0	78,355
	Total	171,262	609,862	422,732	52,225	1,256,081
1991	Private	96,808	432,539	269,753	32,598	831,698
	Public	26,047	26,611	5,233	0	57,891
	Total	122,855	459,150	274,986	32,598	889,589
1992	Private	86,557	465,739	242,746	29,351	824,393
	Public	7,780	10,554	8,151	0	26,485
	Total	94,337	476,293	250,897	29,351	850,878
1993	Private	94,036	457,676	234,800	34,626	821,138
	Public	3,378	7,254	20,095	0	30,727
	Total	97,414	464,930	254,895	34,626	851,865
1994	Private	77,785	492,137	229,005	28,917	827,844
	Public	6,282	2,091	118	0	8,491
	Total	84,067	494,228	229,123	28,917	836,335

[a] Miscellaneous harvest values that are not recorded in thousand board-foot units are not included in this summary; the data include no cull, fuelwood, hardwood chips or logs, poles, pilings, or posts.

[b] Various log rules were used in California; no attempt was made to convert the data to a common base; however, most timber companies in the North Coast Resource Area use the short-log (16-foot) Scribner rule.

Source: "California timber harvest by county," annual report prepared by the California State Board of Equalization, Timber Tax Division.

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Metric Equivalents

1 acre = 0.405 hectare 1,000 acres = 404.7 hectares
1,000 cubic feet = 28.3 cubic meters 1 cubic foot per acre = 0.07 cubic meter per hectare 1 foot = 0.3048 meter 1 inch = 2.54 centimeters 1 mile = 1.609 kilometers

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Appendix A

Reference documentation for the 1991-94 inventory of California. Note that these are unpublished, in-house documents.

1. Field instructions for the 1991-94 inventory of California, 1992. 219 p. On file with: The Pacific Resource Inventory, Monitoring, and Evaluation program (PRIME) of the Pacific Northwest Research Station, Portland, Oregon.

2. California photo-interpretation manual for the North Coast Resource Area, 1990. On file with: The Pacific Resource Inventory, Monitoring, and Evaluation program (PRIME) of the Pacific Northwest Research Station, Portland, Oregon.

3. California inventory procedures and techniques documentation for the 1991-94 forest inventory. On file with: The Pacific Resource Inventory, Monitoring, and Evaluation program (PRIME) of the Pacific Northwest Research Station, Portland, Oregon.

Appendix B

For more information about National Forest inventory procedures, contact the timber management staff at the following addresses:

Pacific Southwest Region (California)
Land Management Planning: Remote Sensing Lab
1920 20th St.
Sacramento, CA 95814

Pacific Northwest Region (Oregon and Washington)
Timber Management: Plans, Silviculture, and Inventory
P.O. Box 3623
Portland, OR 97208-3623

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This report is a summary of timber resource statistics for the North Coast Resource Area of California, which includes Del Norte, Humboldt, Mendocino, and Sonoma Counties. Data were collected by the Pacific Northwest Research Station as part of a State-wide multiresource inventory. The inventory sampled private and public lands except reserved areas and National Forests. The National Forest System provided data from regional inventories of North Coast National Forests. Area information for parks and other reserves was obtained directly from the organizations managing these areas. Statistical tables summarize all ownerships and provide estimates of land area, timber volume, growth, mortality, and harvest. Estimates of periodic change of volume and area on timberland are presented for all ownerships outside National Forests.

Keywords: Forest surveys, forest inventory, statistics (forest), timber resources, resources (forest), periodic change, trends, North Coast, Del Norte County, Humboldt County, Mendocino County, Sonoma County, California.

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Pacific Northwest Research Station
333 S.W. First Avenue P.O. Box
3890 Portland, Oregon 97208-3890