

timber resources

of the sacramento area, california a, 1972



METRIC CONVERSIONS

1,000 acres = 404.69 hectares
 1,000 cubic feet = 28.3 cubic meters
 1 cubic foot per acre = 0.070 0 cubic meters per hectare
 1 square foot basal area per acre = 0.229 6 square meters per hectare
 1 foot = 30.48 centimeters

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TIMBER RESOURCES OF THE SACRAMENTO AREA, CALIFORNIA, 1972

Reference Abstract

Wall, Brian R.

1978. Timber Resources of the Sacramento Area, California, 1972. USDA For. Serv. Resour. Bull. PNW-73, 62 p., illus. Pacific Northwest Forest and Range Experiment Station, Portland, Oregon.

This report summarizes the 1972 timber resource inventory of the Sacramento area, California. Included are detailed tables of forest area, timber volume, growth, mortality, and timber cut and a discussion of the current timber resource and timber industry situation.

KEYWORDS: Forest surveys, statistics (timber), timber statistics, resources (timber), timber resources, California (Sacramento area), Sacramento area--California.

RESEARCH SUMMARY

Resource Bulletin PNW-73

1978

California's Sacramento area has 13 percent of the State's total land area and 6 percent of the State's population. The area is largely rural with the population concentrated in the Sacramento valley between the timbered and sparsely populated Coast Range to the west and the Sierra Nevada Range to the east.

Forest land totals 7 million acres with about 4 million acres of commercial forest land capable of growing crops of timber, 3 million acres of unproductive forest land, and 71,000 acres of productive forest land which is reserved from timber harvesting in parks and wilderness areas. National Forests have 54 percent of the commercial forest land, forest industries 17 percent, farm and miscellaneous private owners 27 percent and other public owners 2 percent.

Since 1953 the loss of commercial forest land to other uses has been small. About 35,000 acres of commercial forest land has been converted to powerlines and other uses. Increasing recreational demands have resulted in the conversion of 16,000 acres of commercial forest land to parks

and wilderness areas. A large difference in the area of commercial forest occurred because new methods of evaluating forest land productivity resulted in a reclassification of 330,000 acres to noncommercial forest.

The volume of growing stock is 13 billion cubic feet and sawtimber 65 billion board feet (Scribner). National Forests have 64 percent of the sawtimber volume, forest industries 18 percent, and farm and miscellaneous private owners 17 percent.

White fir is the most important forest type in the resource area. Other important types are ponderosa pine, Douglas-fir, incense-cedar, red fir, and sugar pine.

Private forest lands are generally well stocked with conifers. About three-fifths of the total commercial area in private ownership is at least 60 percent stocked with conifers. This level of stocking is generally considered adequate for realizing the growth potential of the land.

Total net annual growth **is** 205 million cubic feet (1 billion board feet). Forest industry has the highest net annual growth with 63 cubic feet per acre. Farm and miscellaneous private and National Forests grow about 50 cubic feet per acre per year. Annual mortality is relatively low, amounting to only 33 million cubic feet. National Forest mortality as a percent of the inventory is less than the average for all owners.

The annual timber harvest for the area is about 1 billion board feet. This level of timber harvest has been maintained since the late 1940's with National Forests currently accounting for 65 percent. Most of the harvest is pines although the inventory runs heavily to true firs. This heavy cutting in pines will eventually shift the species mix even more heavily to fir.

The forest industry employs about 9,000 people. Lumber is the principal product. Veneer, plywood, and **pulp** are also manufactured in 44 primary processing plants located in the area.

THE SETTING

The Sacramento resource area contains 15 counties (fig. 1). Within the area is Sacramento, the State capital; several other population centers which are also processing centers for agricultural and forest products; portions of seven National Forests; numerous recreational attractions



Figure 1.--Counties of the Sacramento area.

including Lake Tahoe and Squaw Valley; fast-water rivers; the historic mother lode gold country; and a part of the extremely productive Central Valley.

The land area totals 12.8 million acres, or 13 percent of the State's total, and currently has a population of 1.4 million people, 6.5 percent of the State's total. The area is largely rural, with 70 percent of the population living in Sacramento County and the 25 largest towns and cities, most of which are located in the Sacramento Valley and the western foothills of the Sierra Nevada. Large areas are scantily populated, including the east slope of the Coast Range in Colusa, Glenn, and Tehama Counties and the mountainous lands in much of the Sierra Nevada.

The Sacramento resource area is dominated by the Sacramento Valley, drained by California's largest river, the Sacramento. The nearly flat alluvial plain is one of the most productive agricultural regions in the United States. The Sierra Nevada mountain range is located on the eastern side of the valley. On the west side is the Coast Range which roughly parallels the Sierra Nevada Range. The valley receives the easterly drainage from the Coast Range and the westerly drainage from the Sierra Nevada Range.

The dry, barren foothills of the Coast Range are isolated and sparsely populated (fig. 2). Timber at the higher elevations supports logging and sawmilling.



Figure 2.--Oak savanna in the Coast Range of Glenn County provides food and shelter for wildlife and domestic livestock.

The Sacramento resource area has long hot summers and rainy winters. The counties in the high Sierra Nevada receive heavy snowfall during the winter months, while in the valley heavy nighttime fog is common. In the spring and early summer, the melting snow runoff on western slopes feeds underground water supplies, rivers, and irrigation systems. Water is essential to the Central Valley's multi-billion dollar agricultural industry.

Lake Tahoe Basin is located on the east slope of the Sierra's. Its area is about 500 square miles, including the 192 square mile Lake Tahoe. This area was heavily logged between 1860 and 1900 when demand for lumber in the Nevada silver mines was high.

The Tahoe basin is a vacation haven for Californians from San Francisco and the Sacramento areas. With gaming on the Nevada side of the basin and skiing on the mountain slopes, the basin is a vacation spot with year-round appeal. With summer population rising to 150,000, the land receives increased pressures. As a consequence, environmental degradation is a major concern to the two State governments, the five county governments, and the Federal Government which owns 62 percent of the basin's land area. National Forests make up the Federal ownership.

FOREST AREA

The Sacramento area is about 60 percent forested. At the lower elevations, forest land first occurs in stringers along streams in the Sacramento Valley. Where these stringers have productive commercial hardwoods--mainly black cottonwood--and are of sufficient area (1 acre and 120 feet wide), they are classed as commercial forest land. If the area is too low in productivity, it is classed as noncommercial forest land. Noncommercial species found in the valley and the foothills include California sycamore, willow, California white oak, blue oak, and canyon live oak. In the foothills, Digger pine is sometimes mixed with the oak and chaparrel covers a large area, grading into oaks at lower elevations or pines and firs at higher elevations. Chaparral commonly consists of manzanita, ceanothus, chamise, or scrub oak.

Many areas of both chaparral and oak woodlands are being cleared for grazing (figs. 3 and 4).



Figure 3.--The chamise fields of the Coast Range foothills in Glenn County are dry and isolated. The chamise in the picture is being cleared.



Figure 4.--Oak woodlands occur on thousands of acres of noncommercial forest land.

Commercial forest land in fairly large contiguous areas first occurs above the foothills in stands of ponderosa pine with inclusions of chaparral which originated on burned forested areas. Ponderosa pine occurs in pure stands or mixed with California black oak and other hardwoods at lower elevations. With increasing elevation, ponderosa pine is found with Douglas-fir, sugar pine, and white fir grading into white fir and then to red fir.

A substantial amount of the forested area is in mixed conifer associations composed of ponderosa pine, Douglas-fir, white fir, sugar pine, and incense-cedar. Jeffrey pine appears on a broad range of elevations on the east side of the Sierra Nevada. Past history of man's use of the land has altered these forest associations and change is continuing (figs. 5 and 6).



Figure 5.--Mixed ages and mixed species are most common in the Sacramento resource area. Ponderosa pine reproduction is common to planted sites as well as natural open stands. This area is not fully stocked.



Figure 6.--A young-growth stand of Jeffrey pine near Truckee in Nevada County.

The Sacramento resource area has 7.5 million acres of forested land located along the Coast Range and the Sierras. Commercial forest land in the area amounts to 3.9 million acres, 23 percent of the State's total. Commercial forest occurs mainly at higher elevations where moisture is not a limiting factor to tree growth. This land is capable of growing at least 20 cubic feet of wood per acre per year.

Counties with the greatest concentrations of commercial forest land are located in the Sierra Nevada Range. These heavily timbered counties have been subjected to a long history of timber use dating back to the gold rush days. As a result there are many young-growth stands of timber, both unevenaged and evenaged (fig. 7).

There are 3.4 million acres of forest land that are unproductive for timber production in the eastern foothills of the Coast Range and the western foothills of the Sierra Nevada. This substantial forest area is important for grazing, wildlife, and watershed. The west side of the Sacramento resource area has vast, isolated, unproductive forest lands in Tehama, Lake, and Napa Counties. Many of these areas are being converted to grazing. This is accomplished by chemical, and mechanical methods and burning. Thousands of acres are treated each year and many of the acres are seeded with grass.



Figure 7.--An unevenaged stand of white fir and ponderosa pine in Plumas County.

About 71,000 acres of productive forest land in the Sacramento resource area are reserved from timber harvesting by law. The two largest areas are the Yollo Bolly Wilderness in Tehama County, and the Desolation Wilderness in El Dorado

County. Of the total productive reserved area, the National Forests account for 60 percent, National Parks 23 percent, and 17 percent are in State and county parks, Nature Conservancy, and other lands. The Wilderness System of the National Forests could increase in the future because some roadless areas and some wilderness study areas are under consideration for inclusion in the Wilderness System.¹

FOREST OWNERSHIP

The following tabulation shows the percentage of commercial forest land by ownership:

<u>Owner</u>	<u>Percent</u>
National Forest	54
Other public	2
Forest industry	17
Farmer owned	6
Miscellaneous private corporate	10
Miscellaneous private noncorporate	11
Total	100

The National Forests are the largest landowner with 2.1 million acres of commercial forest land. All or part of the following National Forests are in the area: Mendocino and Trinity in the Coast Range; the Plumas, Tahoe, Eldorado, Lassen, and Toiyabe in the Sierra Nevada. National Forests are managed for wildlife, forage, recreation, water, and timber; on lands with unique characteristics one or more of these land uses may be stressed. For instance, on the Eldorado and Tahoe National Forest within the Lake Tahoe Basin, recreation and water uses are stressed, whereas on the Mendocino National Forest water, timber, and wildlife are paramount.

There are 1.7 million acres of private commercial forest land in the Sacramento resource area. Forest industries own 653,000 acres of commercial forest with most of these lands in Tehama, Butte, and Plumas Counties. The largest forest industry landowners are Diamond International, Louisiana Pacific, Collins Pine, American Forest Products, Crane Mills, and Michigan-California Forest Industries. These six companies account for 72 percent of the land owned by forest industry.

¹ At the time of the inventory there were no wilderness study areas, but current statistics show 2,100 acres of commercial forest land in a wilderness study area on the Tahoe National Forest and 19,000 acres in the Mendocino National Forest.

There are 406 thousand acres of commercial forest owned by corporations included in the aggregate ownership group "farm and miscellaneous." A number of these corporations are large landowners although they do not own a primary conversion plant and thus are not identified as forest industry. In terms of management objectives they are similar to forest industry owners. Corporate owners usually managed their lands for long term objectives. This provides the stability necessary for timber management. This category includes such owners as Southern Pacific Land Company, Soper-Wheeler, Pacific Gas and Electric Company, Chy Corporation, and the old Shafco properties managed by W. M. Beaty and Associates, Inc. These five companies account for 59 percent of the miscellaneous private corporate land in the Sacramento area.

Farmer and miscellaneous private noncorporate lands total 565 thousand acres.

TIMBER PRODUCTION RESTRICTIONS ON NATIONAL FOREST LANDS

Commercial forest land on National Forests is classified according to the capability of the land to satisfy land management plans. Seventy-two percent of the commercial forest land is classed as *standard*. This is land on which the site can be fully utilized for growing crops of industrial wood with adequate protection for forest resources (fig. 8).

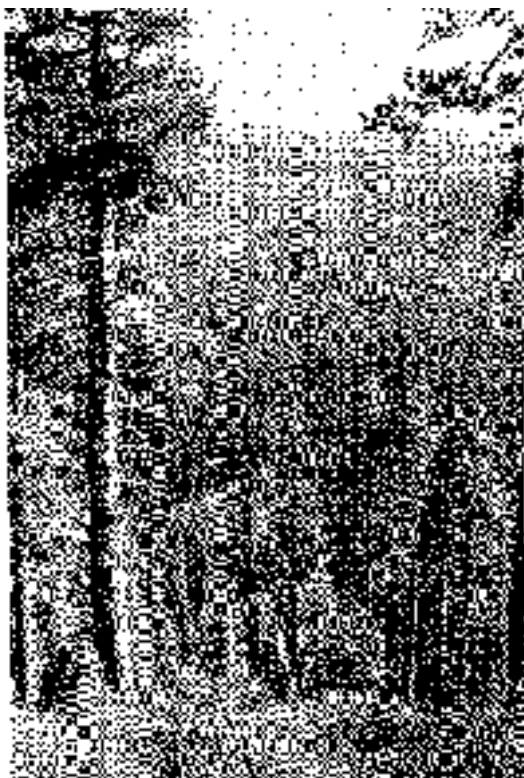


Figure B.--Commercial timber *land in*
a view from Bucks Summit in Plums
County.

About 8 percent of the land is in a category termed *special* and includes lands under landscape management or travel influence and water influence zones. On these lands, consideration of other resource values may reduce timber yields. Three percent of the land *is unregulated*. This is commercial forest land that is not managed for timber production under sustained yield principles although timber harvest can be realized from these areas. Included are administrative sites and experimental forest land areas. *Marginal* lands account for 17 percent of the total commercial forest land area. These lands are a component of the regulated commercial forest land base not currently qualifying as standard or special components because of excessive development cost, low product values or resource protection constraints. Timber yields from marginal lands depend on reforestation funding, management and logging technology, and economic conditions.

TIMBER PRODUCTION RESTRICTIONS ON PRIVATE AND OTHER PUBLIC LANDS

Commercial forest land in private and other public ownership is not equally available for timber production. To estimate limitations to full timber production each field plot outside National Forests was classified into one of four categories:

- 1 No apparent cultural or physical limitation to timber production. Much of this area is used for grazing but with little apparent effect on tree growth.

Private land	1,421,000 acres or 83 percent
Other public land	43,000 acres or 71 percent

- 2 Harsh sites, including arid transition zone forests, steep rocky slopes, high elevation sites with limited stockability, and areas with peridotite-serpentine soils.

Private land	180,000 acres or 10 percent
Other public land	18,000 acres or 29 percent

3. Recreational, residential, or commercial development immediately adjacent to the plot. This category does not include the thousands of acres of undeveloped subdivisions.

Private land	99,000 acres or 6 percent
Other public land	0

4. Grazing development through partial clearing sufficient to reduce timber production but with land still defined as commercial forest (most grazing developments take the land out of commercial forest) (fig. 9).

Private land	15,000 acres or 1 percent
Other public land	0

The three categories of land with timber yield limitations amount to 294,000 acres in private ownership and 18,000 acres in other public ownership, or 17 percent and 29 percent of the commercial forest land in each owner class, respectively.



Figure 9.--Residential developments restricts the use of commercial forest land.

Residential development may eventually limit timber production on many acres of forest land but there was no way to quantify this category. Examples of such areas are numerous. To mention a few: Most of Napa County; the Independence Lake area where a large resort type development has been proposed; Graeagle-Portola area, which is developing as a summer home center; Paradise-Magalia area which is rapidly becoming a city in the trees; much of the privately owned commercial forest between State Highway 49 (the Mother Lode route) and the National Forest boundary from Placerville to Nevada City; Martis Valley near Truckee; and underdeveloped land near Lake Tahoe.

CHANGES IN OWNERSHIP AND AREA OF COMMERCIAL FOREST LAND

Changes in commercial forest area and ownership in the Sacramento resource area were identified for the period between 1952 and 1972.^{2/} This was done using records of road, powerline, and water development construction, land transactions, forest conversions, and park dedications along with aerial photographs and forest inventory records. The changes we found are shown in the following tabulation:

Gains and Losses in Commercial Forest Land

Source of Change	Public lands	Private lands	Net balance total
	- - - - -	Acres - - - - -	
Ownership shifting	+13,000	-13,000	0
Roads, powerlines, and other conversions	-16,000	-19,000	-35,000
Parks, wilderness	+16,000	-10,000	+6,000
Harsh site reclassification ^{3/}	-200,000	-130,000	-330,000
Unexplained differences ^{4/}	-78,000	-18,000	-96,000
Net change	-265,000	-190,000	-455,000

Ownership changes have occurred continuously since 1953. National Forests acquired 13,000 acres of commercial forest land from private owners and 9,000 acres from other public owners, mostly the State of California and the Bureau of Land Management. Forest industry lands have increased by more than 100,000 acres, while other private lands have decreased by a similar amount. A few large timber companies

^{2/}Statistics for 1953 are published. Forest Statistics for California. December 1954. Forest Survey Release 25. 66 p. California For, and Range Exp. Stn., Berkeley, Calif.

³¹Records of harsh site reclassification varied for the various National Forests and probably include other sources of difference.

^{4/}Unexplained differences are mainly due to judgment, procedures, and sampling error, and also include unclassified land in the Tahoe Basin Management Unit.

have acquired lands from smaller companies. On other private ownerships, especially the miscellaneous private lands held by individuals and small corporations, land has been steadily subdivided for residential and recreational development.

Physical conversion of commercial forest land to permanent roads, reservoirs, powerlines, pasture, and urban development accounted for 19,000 acres of private land. About 60 percent of this occurred in Nevada, Placer, and El Dorado Counties where residential development of forested areas is rapidly changing land use. Physical conversion in National Forests was mainly for roads. Powerlines and water development including dams, reservoirs, and waterways made up the bulk of the other physical conversions.

About 10,000 acres of private commercial forest land was donated to or purchased by the State and counties for parks. Included are lands purchased by the Nature Conservancy and held for eventual disposition as parks or other reservations. The commercial forest land base on National Forests has increased by about 16,000 acres from reclassification of reserved areas. This resulted from an increase in the boundaries of the Desolation Valley Wilderness which took 2,000 acres out of commercial forest use while reclassification of the Lakes Basin Recreational Area and a piece of the Yolla-Bolly--Middle Eel area placed about 18,000 acres back in commercial forest status. These areas had been carried as "reserved" by administrative decision but were not set aside by law until after the Wilderness Act (PL 88-577) of 1964. Boundaries were changed and some areas were dropped from the reserved category between 1953 and 1964.

About 130,000 acres of private forest lands were reclassified from commercial to noncommercial based on an improved method of estimating productivity (MacLean and Bolsinger 1973) in areas where tree stocking is limited due to aridity, rockiness, and other environmental factors.

At least 200,000 acres on National Forests were reclassified from commercial forest to noncommercial forest by Region 5 of the U.S. Forest Service. Included in this estimate are nonstocked burns where repeated reforestation failures revealed sites not feasible to manage, arid transition zones on the lower eastern and western slopes of the Sierra Nevada Range and the east slope of the Coast Range, unproductive sites in the granitic crest zone of the Sierra, and excessively steep slopes in river canyons.

There are 96,000 acres of change not directly accounted for but most likely attributable to procedural differences, judgment, and sampling error. On private land this is 18,000 acres and on public lands 78,000 acres. Part of the difference occurs on the National Forests as a result of classification of land within the Tahoe Basin Management Unit. This classification is awaiting a final decision.

Forest types are determined on the basis of plurality of all live trees that contribute to stocking, considering both size and spacing. White fir is the most extensive type in the resource area covering 1 million acres and occurring with other species such as ponderosa pine and Douglas-fir at the lower elevation and forming pure stands in higher elevations or being mixed with red fir. Sixty-two percent of this type **is** found on National Forests. White fir has increased in area as ponderosa pine and Douglas-fir have been selectively removed.

Douglas-fir type amounts to 513,000 acres of commercial forest land and is found in the mixed conifer type in the Sierra Nevada and the Coast Range. Fifty-eight percent of the Douglas-fir type **is** on National Forests.

Category	ACRIS Value
~Q	1000
Q	780
Q'	500
H	200

Figure 10.--Acreage
by forest type.

SAWTIMBER STANDS DOMINATE RESOURCE AREA

Even though there has been a long history of timber harvest in the Sacramento resource area most of the remaining stands still contain enough sawtimber trees to be classed as sawtimber stands. This was caused by commonly used selective method of cutting which leaves a residual volume of sawtimber trees on many of the acres. Sawtimber stands occur on 3.1 million acres or 81 percent of the total commercial land area. Sixty four percent of the remaining sawtimber stands are classed as large sawtimber (larger than 21 inches in diameter).

Of the large sawtimber stands, 70 percent are found on National Forest lands. Only 4 percent of the commercial forest is in poletimber stands, and 11 percent is in sapling and seedling stands.

STOCKING HIGH ON PRIVATE LANDS

Private forest lands are generally well stocked with conifers. About three-fifths of the total commercial area **in** private ownership is at least 60 percent stocked with conifers. This level of stocking is generally considered adequate for realizing the growth potential of the land. On the other end of the scale, about one-fourth of the area is either poorly stocked or nonstocked. Many of the poorly stocked or nonstocked acres contain hardwoods that compete with the conifers for space and present management problems. Hardwoods and cull softwoods occupy more than 60 percent of the growing space on about half of the areas that are less than well stocked with conifer growing stock. Thus competition from these less desirable stand elements makes conversion to better conifer stocking difficult.

Stocking comparisons of private with public lands is not valid because the National Forest stocking figures have both conifers and hardwoods contributing toward stocking and can't be separated into components. National Forests have 41 percent of this area well stocked, 36 percent is moderately stocked, and 23 percent is nonstocked or poorly stocked.

TIMBER VOLUME

The volume of growing stock in the Sacramento resource area **is** 13 billion cubic feet, 23 percent of the total in the State of California. The volume of sawtimber amounts to 65 billion board feet (Scribner).^{5/} Softwoods account for 96 percent of the growing stock volume.

The volume estimates shown in the report account for practically all of the wood on commercial forest land. The

^{5/} Sawtimber volumes used in this text are in Scribner.

reported volume of growing stock is the net volume of all sound live trees of commercial species 5.0 inches in diameter or larger. Additional volume of commercial species not qualifying as growing stock include rotten cull, sound cull, and salvable dead trees; and their net volume is reported in these tree classes. The volume of noncommercial species occurring on commercial forest land is reported as sound cull. Of the total volume, about 3 percent is in cull and salvable dead trees.

National Forests have the bulk of the sawtimber volume and also the highest volume per acre as shown in the following tabulation:

Owner	Percent of sawtimber volume	Volume per acre bd. ft.
National Forests	64	19,749
Other public	1	8,869
Forest industry	18	17,685
Farm and misc. private	17	10,456

The softwood sawtimber volume in the resource area amounts to 65 billion board feet with 77 percent of the volume in trees greater than 21 inches in diameter. The hardwood sawtimber volume is only 1.1 billion board feet, and nearly half of this volume is in trees less than 20 inches in diameter.

White fir is the leading sawtimber species. The inventory amounts to 18 billion board feet, and most of this volume is on National Forests. Ponderosa pine and Jeffrey pine have a combined volume of 14.6 billion board feet, and Douglas-fir has a volume of 11 billion board feet. Other important species in terms of volume are red fir and sugar pine (fig. 11).

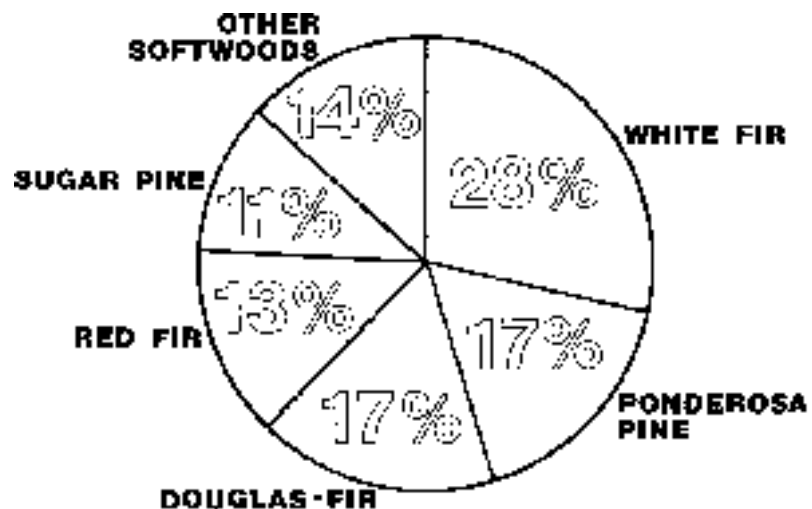


Figure 11.--Percent of softwood sawtimber volume by species.

TIMBER VOLUME CHANGE

The volume of sawtimber has been declining since 1953. Volume in public ownership (essentially National Forest) declined about 4 percent, and volume in private ownership declined 15 percent../ The present cut-growth balance shows that the public inventory is probably continuing to decline, but the inventory in private ownership is now increasing. The difference between the change that occurred between 1953 and 1972 and the current situation on private lands is due to the changing timber-cut over time, the increase in growth rates due to the large number of trees and stands that are entering the age of maximum growth, and the volume losses due to catastrophic forest fires in the early 1960's.

TIMBER GROWTH, CUT, AND MORTALITY

Net annual growth of sawtimber on all ownerships is 1.04 billion board feet or 2 percent of the inventory volume. Growing stock growth is 205 million cubic feet.

Forest industry lands have the highest gross growth per acre, and net growth per acre. National Forests and farm and miscellaneous private lands have the lowest mortality per acre as shown below:

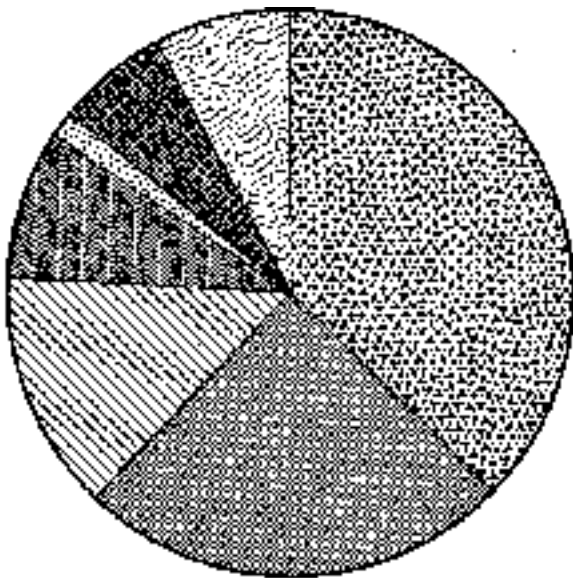
	Gross growth per acre	Net growth per acre	Mortality per acre
	- - - - -	- - - Cubic feet	
National Forest	57	50	7
Other public	62	49	13
Forest industry	75	63	12
Farm and misc. private	59	51	8
Average all owners	61	53	8

About 94 percent of the growing stock growth is from softwood species. White fir and red fir combined account for about 38 percent of the softwood growing stock growth.

Statistics for 1953 are unpublished, on file at the Pacific Northwest Forest and Range Experiment Station.

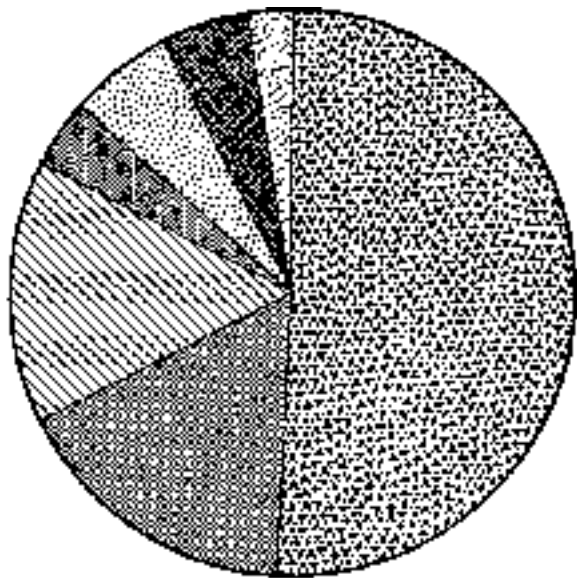
Ponderosa pine and Jeffrey pine account for 25 percent of the growth as shown in figure 12.

Average annual mortality of growing stock trees, 5.0 inches in diameter and larger, for the 5-year period preceding the inventory was 33 million cubic feet. Softwoods account for 98 percent of the mortality. Half of the softwood mortality occurs in white and red fir (fig. 13).



MRS HARDWOODS 6%
 OTHER CONIFERS 7%
 LODGEPOLE PINE 1%
 SUGAR PINE-
 WHITE PINE 9%
 DOUGLAS-FIR 14%
 JEFFERY PINE-
 PONDEROSA PINE 25%
 WHITE FIR-RED FIR 38%

Figure 12.--Percent of net annual cubic foot growth by species, Sacramento resource area, 1972.



HARDWOODS 2%
 OTHER CONIFERS 5%
 LODGEPOLE PINE 6%
 SUGAR PINE
 WHITE PINE 4%
 DOUGLAS-FIR 15%
 JEFFERY PINE
 PONDEROSA PINE 17%
 WHITE FIR RED FIR 51%

Figure 13.--Percent of annual mortality by species, Sacramento area, 1972.

The leading identifiable cause of mortality on lands outside of National Forests was weather (26 percent) followed by insects (14 percent), fire (8 percent), disease (4 percent), suppression (3 percent), and logging (2 percent). Forty-three percent of the mortality was unclassified. Some was due to the combined effect of several of the above agents but the primary cause of death could not be established. Other unclassified causes include landslides, exposure due to stand disturbance, damage by vehicles, and unrecognized suppression.

Hardwoods have the highest growth rates relative to inventory volume followed by ponderosa pine and Jeffrey pine and lodgepole pine has the highest mortality rate as shown below:

<u>Species</u>	<u>Net annual cubic-foot growth as a percent of total species volume</u>
Douglas-fir	1.3
White fir and red fir	1.5
Ponderosa and Jeffrey pine	1.8
Sugar and white pine	1.4
Lodgepole pine	1.0
Incense-cedar	1.6
Hardwoods	2.3
All species	1.6

In 1973, the Sacramento resource area had a timber harvest of 1.1 billion board feet (Scribner log rule) or 22 percent of the total cut in California. This harvest level has not changed appreciably since the late 1940's although there have been changes in production from individual counties.

Although the timber harvest of 1.1 billion board feet is about equal to the net growth of 1.0 billion board feet, the balance between cut and growth varies among owner groups. Harvest and growth values are equal only for forest industry.

	<u>National Forests</u>	<u>Forest industry</u>	<u>Farm and miscellaneous private</u>
	- - - -	<u>(Board feet per acre - Scribner)</u>	- - - -
Net growth	280	350	270
Timber harvest	350	350	200

On forest industry lands it appears that the present harvest level can be maintained. Supporting this is the fact that the stands are unevenaged and the selective method of harvesting timber currently used tends to maintain the existing forest and forest conditions. On National Forest lands the timber harvest exceeds net growth and is a result of the conversion of a largely old-growth high volume-per-acre forest to a regulated young-growth forest. On farm and miscellaneous private lands, annual net growth exceeds the annual timber harvest by one-third. This is most likely due to several factors including ownership objectives which in some cases may include holding land for recreation or speculation. Also, these lands have only 60 percent of the per acre volume of industrially owned lands and may not now offer attractive timber harvesting opportunities. Obviously with 1,062,000 acres in this ownership compared to 653,000 acres in industrial ownership, future opportunities in the farm and miscellaneous private ownership could be considerable.

Whereas the inventory is predominantly white fir, the timber cut is mainly ponderosa pine. The following tabulation shows the estimated 1972 percentage of the harvest and inventory volume by species:

	<u>Inventory volume percent</u>	
	<u>Cut</u> <u>percent</u>	<u>Board foot</u> <u>Scribner</u>
Ponderosa, Jeffrey, and sugar pine	43	33
True fir	34	41
Douglas-fir	12	17
Incense-cedar	5	5
Other softwood	5	2
Hardwoods	1	2
Total	100	100

Heavy cutting of ponderosa pine and sugar pine has altered the species mix to true firs. The change has been viewed by some as a problem. Industry people maintain that species characteristics will matter less in the future because all of the principal softwoods can be utilized.

The National Forests account for 55 percent of the timber harvest in this resource area, and the remaining cut comes mostly from the private lands although a small amount comes from other public lands. Twenty-one percent comes from forest industry lands and 19 percent comes from farmer and miscellaneous private lands.

FOREST INDUSTRY

In 1972 the forest industries in the Sacramento resource area consumed 1.2 billion board feet of timber. Ninety-three percent of this wood came from within the area, and the remainder came from nine other California counties and out of State (Howard 1974).

Of the wood consumed in the unit, 97 percent went to sawmills; and 69 percent of the wood consumed by sawmills came from trees more than 100 years old. In 1972 there were 39 sawmills with an installed, 8-hour capacity of 3.4 million board feet lumber tally. These mills produced one-fourth of California's lumber production. Sawmills consumed 1.16 billion board feet (Scribner) of logs in 1972.

There were two veneer plants located in El Dorado and Nevada Counties and a veneer and layup plant located in Tehama County. The veneer capacity amounted to 100,000 square feet (3/8-inch), and the veneer and layup plant's capacity amounted to 130,000 square feet. Eighty-five percent of the wood consumed in these plants was old growth. About 65 percent came from National Forests, one-fourth from industry lands, and one-tenth from farm and miscellaneous private lands. True firs were the main species used by these veneer and plywood plants.

There was one groundwood pulpmill in Tehama County and a particle board plant in Plumas County. The pulpmill capacity amounted to 80 tons per day, and the particle board capacity was 120,000 square feet (3/4-inch basis). These mills used only mill residues.

The single wood preserving plant consumed roundwood from Butte County. The capacity for post, pole, and pilings amounted to 7.3 million board feet per year. Post, pole, and piling operations used young-growth timber and depended heavily on nonindustrial private lands. Logs were exported by one firm in Sacramento.

In 1972, sawmills produced 1.25 million tons of wood residue in the Sacramento unit. Seventy-nine percent of this volume was used as raw material for other products. Pulp plants consumed 438,323 tons, and 444,581 tons was burned as fuel. Board and other plants used 105,346 tons of wood residue.

FOREST-BASED EMPLOYMENT

Average employment was about 9,000 in the forest industries of the Sacramento unit. Lumber and wood products manufacturing employed about 8,000 workers. Logging accounted for 13 percent, sawmills and planing mills 50 percent, and millwork 14 percent. There were 700 employees working in the manufacture of prefabricated wooden buildings and

structural members and 600 employees in the manufacture of nailed and locked corner wooden boxes and shook.

Employment in pulp, paper, and allied products amounted to 1,200 workers. This industry includes manufacture of bags, pressed and molded pulp goods, folding paper boxes, and corrugated and solid fiber boxes.

INVENTORY PROCEDURES

The statistics for National Forests lands that are included in this report were collected by National Forest personnel from the Eldorado, Lassen, Mendocino, Plumas, Tahoe, Trinity, and the Toiyabe National Forests. Data for all other lands were collected by Forest Resources Evaluation personnel of the Pacific Northwest Forest and Range Experiment Station.

The same standards were used for all data elements, but slightly different collection procedures were used for some areas and certain data items: National Forests, except the Eldorado, and all lands outside National Forests, were inventoried using a double sampling design. First, aerial photo sample plots 1 acre in size were distributed systematically across the area and classified into commercial forest, noncommercial forest, and nonforest. Commercial forest plots were further classified into several stand volume classes. In addition, plots outside National Forests were classified by kind of owner, using county tax assessor records. A random sample of field plots was selected proportional to the number of aerial photo plots in each forest and in each land, volume, and ownership class on lands outside National Forests. The field sample was used to adjust the aerial photo sample for photo interpretation errors and changes since date of photography and also provided detailed stand data such as stocking by species, volume by size class, etc. Field plots consisted of 10 sample points distributed over an acre. The variable radius plot sampling principle was used to select tally trees of 5.0 inches and larger. Trees smaller than 5-inch d.b.h. were tallied on a circular fixed radius plot. Where no trees were tallied, a ground cover class was recorded.

For the Eldorado National Forest a type map was made on which commercial, noncommercial, and nonforest land classes were delineated. Commercial forest areas were then further divided into condition classes and major types. Type-mapped areas of noncommercial and nonforest land were accepted without ground checking. The commercial forest area was sampled with field plots distributed proportional to area by condition class and major type. Field plots consisted of five sample points 132 feet apart in an L-shape. At each point, the variable radius plot sampling principle was used

to select tally trees 1-inch d.b.h. and larger. Trees smaller than 1-inch d.b.h. were tallied on a circular fixed radius plot.

Growth and mortality estimates for National Forests except the Eldorado and Toiyabe were developed from data taken from plots measured at two or more points in time over a 7- to 20-year period. This information was supplemented with measurements of past 10-year's growth on increment borings and postdated mortality over the past 5 years.

Growth and mortality estimates for the Eldorado and Toiyabe National Forests and lands outside National Forests were developed from 10-year increment borings and 5-year postdating of dead trees.

For all National Forests except the Eldorado the sample consisted of approximately 5,820 aerial photo plots within the Sacramento resource area, and 1,125 field plots including 790 on commercial forest land, 255 on noncommercial forest land, and 82 on nonforest land. The Eldorado National Forest's field sample consisted of about 80 plots within the resource area.

For lands outside the National Forest the sample consisted of 16,428 aerial photo plots and 1,310 field plots, including 361 on commercial forest land, 431 on noncommercial forest land, and 518 on nonforest land.

Fieldwork on commercial forest land was completed as follows:

Outside National Forests	1971
Region 5 National Forests	
Eldorado	1974
Lassen	1970
Mendocino	1971
Plumas	1969
Tahoe	1972
Trinity	1969
Toiyabe National Forest (Region 4)	1975

No attempt was made to adjust the information from the various dates of collection to a common date. The annual change in volume indicated by growth and cut amounts to about -0.2 percent for National Forests and +0.1 percent for other ownerships. Adjusting all inventories to a common date would produce very insignificant differences in the volume estimates from those presented in this report.

The information on both productive and unproductive forests in reserved areas including National, State, and county parks, and National Forest wilderness and natural

areas was obtained by aerial photo sampling and type-mapping procedures and by collecting existing data from agency records.

RELIABILITY OF FOREST RESOURCE ESTIMATES

Forest Land Area and Timber Volume

The estimates of forest land area and timber volume in the Sacramento area were derived by sampling and thus have sampling error. Sampling errors have been computed for the estimate of commercial forest land area, noncommercial forest land area, net cubic-foot volume of growing stock, and net board-foot volume (International 1/4-inch rule) of sawtimber. These sampling errors are presented in table 1 as a percent of the estimated total at the 68- and 95-percent probability levels. They may be interpreted as meaning that the odds are two out of three for 68-percent probability, or 19 out of 20 for 95-percent probability that the ranges shown includes the true value (i.e., the results of a 100-percent inventory). For example, we can expect, with 95-percent confidence, that the estimate of commercial forest land area--3,611,000 acres $\pm$ 3.00 percent (108,330 acres)--includes the true values.

In addition to measurable sampling errors, there may be nonsampling errors due to mistakes in judgment, measurement, and compilation. The magnitude of errors of this nature cannot be determined. Such errors, however, are kept to a minimum through training, supervision, field checking, and complete editing and machine verification in compiling the data.

The sampling error of any breakdown of these totals will be substantially greater than the total. The smaller the breakdown, the larger the sampling error. An approximation of increasing sampling error can be obtained from table 2, which shows the sampling error associated with smaller estimates.

DEFINITION OF TERMS

LAND AREA

Total Land area is that area reported by the Bureau of the Census and 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 1/8-mile wide and lakes, reservoirs, and ponds less than 40 acres in area.

Forest land is at least 10 percent stocked by trees of any size, or formerly having such tree cover, and not currently developed for nonforest use. Minimum area of land recognized as forest is 1 acre.

Nonforest Land has never supported forests or was formerly forested and is currently developed for nonforest uses. Included are areas used for agricultural crops, improved pasture, residential areas, city parks, improved roads of any width and their right-of-way clearings, powerline clearings of any width, and 1- to 40-acre areas of water classified by the Bureau of the Census as land. If intermingled in forest areas, unimproved roads and other nonforest strips must be more than 120 feet wide and clearings etc. more than 1 acre in size to qualify as nonforest land.

FOREST LAND CLASSES

Commercial forest Land is capable of producing 20 cubic feet per acre per year of industrial wood and not withdrawn from timber utilization.

Noncommercial forest land consists of unproductive forest land and productive reserved forest land.

Productive reserved forest land is withdrawn from timber utilization through statute, ordinance, or administrative order but otherwise qualifies as commercial forest land.

Unproductive forest Land is incapable of yielding crops of industrial wood products because of adverse site conditions such as sterile soil, poor drainage, high elevation, steepness, and rockiness.

FOREST TYPES

Forest types are determined on the basis of species plurality of all live trees that contribute to stocking, considering both size and spacing.

TREE CLASSES

Sawtimber trees, poletimber trees, saplings, and seedlings are included as *growing stock*.

Sawtimber trees are growing-stock trees and are at least 9.0 inches in d.b.h. if they are softwoods, and at least 11.0 inches d.b.h. if they are hardwoods. At least 25 percent of the board-foot volume in any sawtimber tree must be free from defect. Softwood trees must contain at least one 12-foot sawlog with a top diameter of not less than 6 inches inside the bark; hardwood trees must contain at least one 8-foot sawlog with a top diameter of not less than 8 inches inside the bark.

Poletimber trees are 5.0- to 8.9-inch d.b.h., live, and of commercial species, not less than 25 percent sound on a cubic-foot basis, and with no disease, defects, or deformities which are likely to prevent them from becoming growing-stock sawtimber trees.

Sapling and seedling trees are less than 5.0-inch d.b.h., live, of commercial species, and have no disease, defects, or deformities which are likely to prevent them from becoming growing-stock poletimber trees.

Nongrowing Stock

Cull trees are noncommercial species or commercial species which are too defective or which are unlikely to become growing-stock trees due to deformity, disease, low vigor, etc.

Sound cull trees are noncommercial species or commercial species with excessive defect due to form, roughness, etc.

Rotten cull trees have excessive defect due primarily to rot.

Mortality trees are commercial species which have died from natural causes within a specified period and which were not cull trees at the time of death.

Salvable dead trees are standing or down, of commercial species, 11.0 inches or more in diameter, containing 25 percent or more of sound volume and at least one merchantable 16-foot log if a softwood or one merchantable 8-foot log if a hardwood.

STAND SIZE CLASSES

Sawtimber stands are at least 10.0 percent stocked with growing-stock trees, with half or more of this stocking in sawtimber and poletimber trees and with sawtimber stocking equal to or greater than poletimber stocking. In *large sawtimber stands*, the majority of the sawtimber stocking is in trees 21.0 inches and larger at breast height. In *small sawtimber stands*, the majority of the sawtimber stocking is in softwood trees from 9.0 to 20.9 inches d.b.h. and hardwood trees 11.0 to 20.9 inches d.b.h.

Poletimber stands are at least 10.0 percent stocked with growing-stock trees, with half or more of this stocking in sawtimber and poletimber trees, and with poletimber stocking exceeding sawtimber stocking.

Sapling and seedling stands are at least 10.0 percent stocked with growing-stock trees, with more than half of this stocking in saplings, seedlings, or both.

Nonstocked areas of commercial forest land are less than 10.0 percent stocked with growing-stock trees.

STOCKING

Stocking is a measure of how well the productive potential of the site is being utilized by trees. For stands with a mean d.b.h. of at least 8 inches, the measure of stocking used is relative density expressed as a percent of normal stocking, i.e., the current number of trees per acre expressed as a percent of the normal number indicated for a stand of the same mean diameter and species. For stands with a mean diameter of less than 8 inches, stocking does not indicate the current level of site utilization but rather estimates the degree of site utilization that is expected when the stand reaches 8 inches in mean diameter. For such stands, the stocking standard is the normal number of trees for an 8-inch stand, discounted for expected mortality. In stands of mixed size and species, the density standard used is a weighted average for the various species and sizes of trees present.

In general, stocking standards are based on normal yield tables such as USDA Technical Bulletin No. 630 (Meyer 1961). Some sites, however, because of hot dry conditions, serpentine soils, rock outcrops, or other restrictions, are unable to support the density of trees indicated by the normal yield tables. On such areas, stocking standards are adjusted to reflect lower stocking capacity (MacLean and Bolsinger 1973, 1974).

Full normal stocking (100 percent in this report) requires far more trees than are needed to fully occupy the site. In general, stands in excess of 60-percent stocking are considered to be fully occupying their sites.

TIMBER VOLUME

Net volume of *live sawtimber* trees of commercial species is measured in board feet. Net volume equals gross volume less deduction of rot, sweep, crook, and other defects that affect use for lumber.

Scribner rule is the common board-foot log rule used locally in determining volume of sawtimber. Scribner volume was computed on a 16-foot log basis to a California utilized top_ for trees 11.0-inch d.b.h. and larger.

International 1/4-inch rule is the standard board-foot log rule adopted nationally by the Forest Service for the presentation of Forest Survey volume statistics. For calculating International 1/4-inch board-foot volume the minimum diameter for softwood trees is 9.0-inch d.b.h. and the minimum log length is 12 feet with a small end diameter of 7.0 inches

ⁱ Utilization study data are on file at the Pacific Southwest Forest and Range Experiment Station, Berkeley, California.

outside bark. The minimum diameter for hardwoods is 11.0-inch d.b.h., with a minimum log length of 8 feet and a small diameter of 9.0 inches outside bark.

Growing stock is calculated from the net volume in cubic feet of live sawtimber trees and live poletimber trees from stump to a minimum 4.0-inch top (of central stem) outside bark is measured. Net volume equals gross volume less deduction for rot and missing bole sections.

Industrial wood includes all roundwood products except fuelwood.

Net annual growth is the net increase in volume of trees during a specified year. (Components of net annual growth include: (a) the increment in net volume of trees at the beginning of the specified year surviving to the year's end plus (b) the net volume of trees reaching the size class during the year, minus (c) the net volume of trees that died during the year, minus (d) the net volume of trees that become culls during the year.)

OWNERSHIP CLASSES

National Forest lands are Federal lands which have been designated by Executive Order or statute as National Forests or purchase units and other lands under the administration of the Forest Service, including experimental areas and Bankhead-Jones title III lands.

Other public lands are Federal lands other than National Forests, including lands administered by the Bureau of Land Management, Bureau of Indian Affairs, and miscellaneous Federal agencies, and lands owned by States, counties, and local public agencies or lands leased by these governmental units for more than 50 years.

Forest industry lands are owned by companies or individuals operating wood-using plants.

Farmer-owned lands are lands owned by operators of farms.

Miscellaneous private-corporate lands are owned by companies or corporations that do not operate wood-using plants. Included are corporate farms, some railroad lands, oil company lands, real estate and land-holding company lands, and lands held by banks and other financial institutions and various other companies and corporations.

Miscellaneous private-noncorporate lands are privately owned lands other than forest industry, farmer-owned, or corporate lands.

APPENDIX I

The principal tree species found in the Sacramento resource area:

<u>Scientific name</u>	<u>Common name</u>
<i>Abies concolor</i> (Gord. & Glend.) Lindl.	white fir
<i>Abies magnifica</i> A. Murr.	California red fir
<i>Abies magnifica</i> var. <i>shastensis</i> Lemm.	Shasta red fir
<i>Acer macrophyllum</i> Pursh	bigleaf maple
<i>Aesculus californica</i> (Spach) Nutt.	California buckeye
<i>Arbutus menziesii</i> Pursh	Pacific madrone
<i>Cercocarpus</i> H.B.K. Spp.	mountain-mahogany
<i>Fraxinus latifolia</i> Bent h.	Oregon ash
<i>Juniperus occidentalis</i> Hook.	western juniper
<i>Libocedrus decurrens</i> Torr.	incense-cedar
<i>Lithocarpus densiflorus</i> (Hook. & Arn.) Rehd.	tanoak (tree)
<i>Pinus attenuata</i> Lemm.	knobcone pine
<i>Pinus contorta</i> Dougl.	lodgepole pine
<i>Pinus jeffreyi</i> Grev. & Balf.	Jeffrey pine
<i>Pinus lambertiana</i> Dougl.	sugar pine
<i>Pinus monticola</i> Dougl.	western white pine
<i>Pinus ponderosa</i> Laws.	ponderosa pine
<i>Pinus sabiniana</i> Dougl.	Digger pine
<i>Platanus racemosa</i> Nutt.	California sycamore
<i>Populus fremontii</i> s. Wats.	Fremont cottonwood
<i>Populus trichocarpa</i> Torr. & Gray	black cottonwood
<i>Pseudotsuga menziesii</i> (Mirb.) Franco	Douglas-fir
<i>Quercus chrysolepsis</i> Liebm.	canyon live oak
<i>Quercus douglasii</i> Hook. & Arn.	blue oak
<i>Quercus garryana</i> Dougl. var. <i>breweri</i> Jeps	Oregon white oak
<i>Quercus kelloggii</i> Newb.	California black oak
<i>Quercus Zobata</i> Ne'e	California white oak
<i>Quercus wis lizenii</i> A. DC.	interior live oak
<i>Salix</i> L. Spp.	willow
<i>Tsuga mertensiana</i> (Bong.) Carr.	mountain hemlock
<i>Umbellularia californica</i> (Hook. & Arn.) Nutt.	California-laurel

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APPENDIX II

Table 1--Sampling errors of estimate of forest area and timber volume,
Sacramento area, California, January 1, 1971

Item	Estimated total	Sampling error in percent	
		68-percent probability	95-percent probability
Commercial forest land ^{1/}	3,611,000 acres	±1.53	±3.00
Noncommercial forest land ^{-2/}	3,323,000 acres	+4.02	+7.88
Volume:			
Growing stock	13,042 million cubic feet	+2.23	±4.37
Sawtimber (International 1/4-inch rule)	74,472 million board feet	+1.56	+3.06

^{1/} In addition to the estimated 3,611,000 acres of commercial forest land derived by sampling methods, 284,000 acres of commercial forest land on the Eldorado National Forest were determined by type-mapping procedures and have no sampling error.

^{2/} In addition to the estimated 3,323,000 acres of noncommercial forest land derived by sampling methods, 89,000 acres of unreserved-unproductive on the Eldorado National Forest and 101,000 of forest land in parks and other reservations were determined by type-mapping procedures and have no sampling error.

Table 2--Approximate sampling error by size of estimate, Sacramento
area, California, January 1, 1971

Commercial		Growing stock		Sawtimber	
Area	Sampling error	Volume	Sampling error	Volume	Sampling error
Thousand acres	Percent	Million cu. ft.	Percent	Million bd. ft./	Percent
3,611	1.53	13,042	2.23	74,742	1.56
2,113	2.0	7,206	3.0	45,309	2.0
939	3.0	4,054	4.0	20,137	3.0
528	4.0	2,594	4.0	11,327	4.0
338	5.0	649	10.0	7,249	5.0
84	10.0	299	15.0	1,812	10.0
38	15.0	162	20.0	805	15.0
21	20.0	104	25.0	453	20.0
13	25.0	72	30.0	290	25.0
9	30.0			201	30.0

1/2000 1971

Table 3--Area by land class and county, Sacramento area, California, January 1, 1972

(In thousand acres)

Land class	All counties	Butte	Colusa	El Dorado	Glenn	Lake	Napa	Nevada	Placer	Plumas	Sacramento	Sierra	Sutter	Tehama	Yolo	Yuba
Forest land:																
Commercial	3,895	341	19	538	119	138	36	308	365	7,084		382	3	460	2	100
Productive reserved	71	1		9		1/	1	2		17				41		
Unproductive	3,442	199	216	272	206	502	295	189	231	286	14	91	17	/29	113	1/82
Total	7,408	541	235	819	325	640	332	499	596	1,387	14	473	20	1,229	115	182
Nonforest land--	5,339	505	502	219	519	167	172	122	318	253	610	140	366	681	543	223
Unclassified ^{3/}	66		--	66	--	--	--						--		--	--
Total area ^{2/}	12,813	1,046	737	1,104	844	807	504	621	914	1,640	624	613	386	1,909	658	406

^{1/}In 1970.

^{2/}Includes cropland, pasture and range, swampland, industrial and urban areas, powerline clearings, railroads, and all improved roads and highways and 58,714 acres classified as water by Forest Survey standards but defined by the Bureau of the Census as land.

^{3/}Unclassified land in the El Dorado County portion of the Tahoe Basin Management Unit is primarily nonforest and non-commercial forest.

Source: United States Bureau of the Census, Land and Water Area of the United States, 1970.

Table 4--Area of commercial forest land, by ownership class and county, Sacramento area, California, January 1, 1972

(In thousand acres)

Ownership class	All counties	Butte	Colusa	El Dorado	Glenn	Lake	Napa	Nevada	Placer	Plumas	Sacramento	Sierra	Sutter	Tehama	Yolo	Yuba
National Forest	2,120	93	16	256	89	80	--	105	167	776		282		215		39
Other public	61	10		11				13	15	4		3		4		2
Private:																
Forest industry	653	113	--	99	20	12	--	5	58	103		30	--	213	-	
Farmer-owned	216	11	1	68	6	19	15	12	3	45		8	1	10	1	8
Miscellaneous private--corporate	406	55	1/	21	1/	5	1	96	42	117		28		14		27
Miscellaneous private--noncorporate	440	59	2	82	5	23	20	78	81	39		21	1	4	1	24
Total private	1,715	238	3	271	31	58	36	190	184	304		97	3	240	2	58
All ownerships--	3,895	341	19	538	119	138	36	308	365	1,084		382	3	460	2	100

^{1/}Less than 500 acres.

--Numbers may not add to totals due to rounding.

Table 5--Area of commercial forest land, by stand-size and ownership class, Sacramento area, California, January 1, 1972

(In thousand acres)

Stand-size class	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
Sawtimber stands: ¹					
Large sawtimber ²	1,999	1,400	25	284	290
Small sawtimber ³	1,143	420	22	246	455
Total	3,141	1,820	47	529	745
Poletimber stands	165	99	2	24	40
Sapling and seedling stands	430	116	12	95	207
Nonstocked areas	158	84	--	4	70
Total ⁴	3,895	2,120	61	653	1,062

¹ Large sawtimber includes trees 21.0-inch d.b.h. and larger.

² Small sawtimber includes softwood trees 9.0- to 20.9-inch d.b.h. and hardwood trees 11.0- to 20.9-inch d.b.h.

⁴ Numbers may not add to totals due to rounding.

Table 6--Area of commercial forest land, by cubic-foot site and ownership classes,
Sacramento area, California, January 1, 1972

Site class ¹¹	All ownerships	National Forest	Other public	Forest industry	Forest ¹¹ and miscellaneous private
Cubic feet	----- Thousand acres -----				
225 or more	23	13			10
165 to 224	372	307	3	37	25
120 to 164	745	433		147	165
85 to 119	898	498	9	141	250
50 to 84	1,222	610	36	208	368
20 to 49	634	258	13	119	244
Total'	3,895	2,120	61	653	1,062

¹¹A classification in terms of capacity for cubic-foot annual growth per acre at culmination of mean annual growth in fully stocked stands.

'Numbers may not add to totals due to rounding.

Table 7--Area of commercial forest land by stocking class of all growing-stock trees
and ownership class, Sacramento area, California, January 1, 1972

(In thousand acres)

Stocking percent'	All ownerships	National Forest	Other public	Forest industry	Forest ¹¹ and miscellaneous private
81+	576	302	1	115	158
61 to 80	1,224	563	33	290	338
36 to 60	1,304	760	13	198	333
11 to 35	632	410	14	45	163
0 to 10	158	84		4	70
Total'	3,895	2,120	81	653	1,062

"See "Definition of Terms."

- Numbers may not add to totals due to rounding.

Table 8--Area *of* commercial forest land by stocking percent, stand component, and cubic-foot site class on other public lands, Sacramento area, California, January 1, 1972.

Stocking percent in softwood growing-stock trees and site	Stocking percent in hardwood and cull softwood trees					
	- 10	11 - 35	36 - 60	61 - 80	81+	Total
	<					

^{1/}Numbers may not add to totals due to rounding.

Table 9--Area of commercial forest land by stocking percent, stand component, and cubic-foot site class on private lands, Sacramento area, California, January 1, 1972.

Stocking percent in softwood growing-stock trees and site	Stocking percent in hardwood and cull softwood trees					
	0 - 10	11 - 35	36 - 60	61 - 80	81+	Total
	-----Thousand acres-----					
0 - 10						
High site						
Medium site	4	15	3	10	48	80
Low site	13	4	23	14	39	93
11 - 35						
High site	--	--	--	--	11	11
Medium site	29	--	19	13	36	97
Low site	52	15	21	5	16	110
36 - 60						
High site	--	--	--	19	--	19
Medium site	14	--	24	27	25	90
Low site	38	38	24	9	28	137
61 - 80						
High site	--	--	--	--	4	4
Medium site	45	19	9	15	9	97
Low site	75	29	64	--		167
81+						
High site	25	--	13			38
Medium site	218	103	18			339
Low site	275	120	37			432
Totals						
High site	25	--	13	19	15	72
Medium site	310	136	73	66	118	704
Low site	453	207	169	28	82	939
Total ^{1/}	788	343	255	113	216	1,715

^{1/}Numbers may not add to totals due to rounding.

Table 10--Area of commercial forest Land, by forest type and ownership class, Sacramento area, California, January 1, 1972

(In thousand acres)

Forest type	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
Douglas-fir	513	296	5	109	103
White fir	1,011	631	6	168	206
Red fir	296	194	5	49	48
Ponderosa pine	524	305	11	105	103
Jeffrey pine	267	180	5	31	51
Sugar pine	92	60	1	27	4
Western white pine	15	5			10
Lodgepole pine	46	18		5	23
Knobcone pine	3	3			
Mountain hemlock	1/	1/			
Incense-cedar	276	79	8	68	121
Unclassified softwoods ^{2/}	155	155			
Other softwoods	21	21			
Aspen	7	7			
Cottonwood	3		3	--	--
California black oak	259	42	6	50	161
Madrone	30		--	--	30
Other hardwoods	214	34	11	37	132
Noncommercial conifers	5	5	-		
Noncommercial hardwoods	5			--	5
Nonstocked	158	84		4	70
Total	3,895	2,120	61	653	1,062

^{1/}Less than 500 acres.

^{2/}Classified as mixed conifer on the Eldorado National Forest.

"Numbers may not add to totals due to rounding.

Table 11--Area of reserved noncommercial forest land by ownership class and forest type or land class, Sacramento area, California, January 1, 1972

(In thousand acres)

Forest type or land class	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
Productive:					
Douglas-fir	7	5	2		
Red fir	5	4			
True fir	21	4	17		
Ponderosa pine	29	27	2		
Jeffrey pine					
Sugar pine	2	1			
Western white pine		1	1/		
Lodgepole pine					
Mountain hemlock	2	1/	2		
Redwood	1/		1/		
Incense-cedar	1/		1/		
Cottonwood	1/		1/		
Total"	71	42	29		
Unproductive:					
Rocky	18	17			
Oak	4		4		
Chaparral	7	5	2		
Low site	2	2			
Willow	1/		1/		
Total ^{7/}	32	24	8		
Total reserved	103	66	37		

"Less than 500 acres.

⁷ Numbers may not add to totals due to rounding.

Table 12--Area of unreserved unproductive noncommercial forest land by ownership class and forest type or land class, Sacramento Area, California, January 1, 1972

(In thousand acres)

Forest type or land class	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
Rocky:					
Douglas-fir	24	19		1/	5
White fir	39	31		2	6
Shasta red fir	41	36			5
Ponderosa pine	45	45		1/	9
Jeffrey pine	70	59		2	
Sugar pine	12	12			
Lodgepole pine	8				8
Mountain hemlock	2	2			
California black oak	14	14			
Oregon white oak	2	2			
Other hardwoods	41	30	3	8	
Noncommercial conifers	8	8		--	
Noncommercial hardwoods	8	8			
Total ^{2/}	315	266	3	13	33
Low Site:					
Douglas-fir	2	2			
White fir	22	22			
Shasta red fir	25	25			
Ponderosa pine	61	24			37
Jeffrey pine	46	22			24
Sugar pine	4	4			
Western white pine	3	3			
Lodgepole pine	18	--			18
Incense-cedar	5			5	
Aspen	3	--		3	
California black oak	40	3			37
Other hardwoods	17	13	--		4
Noncommercial conifers	74	16	18		40
Noncommercial hardwoods	15	15	--		
Nonstocked	30	--			30
Total ^{2/}	367	150	18	8	191
Critical Watershed:					
Douglas-fir	6	6			
Adverse Location:					
Douglas-fir	19	19			
White fir	13	13			
Shasta red fir	2	2			
Ponderosa pine	37	37			
Jeffrey pine	3	3			
California black oak	8	8			
Noncommercial hardwoods	2	2			
Total ^{1/}	84	84			
Juniper	11	11	--	--	--
Oak madrone	1,723	71	155	10	1,487
Chaparral	802	263	190	1	348
Willow	4	--	--	--	4
Other	--	--			1/
Unclassified ^{3/}	97	97			-
Total unreserved unproductive ^{2/}	3,410	949	366	32	2,063

^{1/} Less than 500 acres.

^{2/} Numbers may not add to totals due to rounding.

No breakdown is available for 88,000 acres of **Eldorado** National Forest. This includes 9,000 acres of other unclassified **areas**.

Table 13--Area of commercial forest land and volume of growing stock and sawtimber, it by stand age and ownership classes, Sacramento area, California, January 1, 1972

Stand-age class	All ownerships			National Forest			Other public			Forest industry			Farmer and miscellaneous private		
	Area	Growing stock	Sawtimber	Area	Growing stock	Sawtimber	Area	Growing stock	Sawtimber	Area	Growing stock	Sawtimber	Area	Growing stock	Sawtimber
Years	Thousand acres	Million cubic feet	Million board feet	Thousand acres	Million cubic feet	Million board feet	Thousand acres	Million cubic feet	Million board feet	Thousand acres	Million cubic feet	Million board feet	Thousand acres	Million cubic feet	Million board feet
Sons tucked	158	30	149	84	11	62				4			70	19	87
0- 9	220	88	461	49	19	106	8	5	20	63	39	227	100	25	108
10- 19	41	27	151	14	5	22					8	15	19	7	35
20- 29	40	18	64	14	6	16	-	--	--		8	5	18	7	25
30- 39	43	44	212	11	6	29	-	--	--	12	8	39	20	30	144
40- 49	67	109	478	39	53	240	-			9	20	106	19	36	132
50- 59	152	415	1,824	55	152	836	1	4	18	27	115	378	69	144	592
60- 69	142	492	2,573	79	253	1,330	3	4	22	22	117	570	38	118	651
70- 79	132	426	2,178	70	268	1,425	3	4	22	13	32	120	46	122	611
80- 89	72	408	2,479	45	212	1,308		--	-	8	62	355	19	134	816
90- 99	57	216	1,223	38	154	930	2	11	59	9	28	111	8	23	114
100-119	95	476	2,956	74	383	2,382		--	--	5	31	211	16	62	363
120-139	57	167	1,045	39	137	862		--	--	--	--		18	30	183
140-159	22	87	549	22	87	549									
160-179	20	49	297	20	49	297									
180-199	25	99	628	25	99	628									
200 and over	155	967	6,135	140	905	5,741				15	62	394			
uneven-aged under rotation age	1,442	4,217	24,379	674	2,185	11,611	29	62	326	277	947	5,266	462	1,023	5,176
uneven-aged over rotation age	951	4,706	28,563	628	3,097	18,645	14	31	177	170	876	5,548	139	/02	4,193
Total /	3,896	13,042	74,348	2,120	8,082	47,028	61	122	644	653	2,358	13,443	1,062	2,480	13,233

^{1/} International 1/4-inch rule.

^{2/} Numbers may not add to totals due to rounding.

Table 14--Area *of commercial forest land, by stand volume and ownership classes, Sacramento area, California, January 1, 1972*

(In thousand acres)

Stand volumes per acre ^{1/}	All ownerships	National Forest ^{2/}	Other public	Forest industry	Farmer and miscellaneous private
Less than 1,500 board feet	354	146		25	183
1,500 to 4,999 board feet	466	156	18	75	217
5,000 to 9,999 board feet	631	276	26	118	211
10,000 to 19,999 board feet	905	433	9	188	275
20,000 to 29,999 board feet	479	321	5	88	65
30,000 to 39,999 board feet	327	221	2	70	34
40,000 to 49,999 board feet	223	123	1	62	37
50,000 to 59,999 board feet	87	64		5	18
60,000 to 69,999 board feet	55	45		5	5
70,000 to 79,999 board feet	46	24		5	17
80,000 to 89,999 board feet	20	15		5	
90,000 board feet or more	19	11		8	
Total ^{3/}	3,612	1,836	61	653	1,062

^{1/} Net volume, International 1/4-inch rule.

^{2/} Data for the Eldorado National Forest not available.

^{3/} Numbers may not add to totals due to rounding.

Table 15--Volume of growing stock and saavtimber on commercial forest land, by ownership class and by softwoods and hardwoods, Sacramento area, California, January 1, 1972

Ownership classes	Average volume per acre	All species	Softwoods	Hardwoods
	Cubic feet	- - - -	Million cubic feet	- - - -
Growing stock: [/]				
National Forest	3,812	8,082	7,909	173
Other public	2,000	122	105	17
Forest industry	3,611	2,358	2,238	120
Farmer and miscellaneous private	2,335	2,480	2,243	236
Total ^{?/}	3,348	13,042	12,243	547
	Board feet	- - - -	Million board feet	- - - -
Sawtimber (International 1/4-inch rule): ^{3/}				
National Forest	22,183	47,028	46,568	460
Other public	10,557	644	608	36
Forest industry	20,587	13,443	13,277	166
Farmer and miscellaneous private	12,460	13,233	12,747	485
Total ^{?/}	19,088	74,348	73,200	1,147
Sawtimber (Scribner rule): ^{4/}				
National Forest	19,749	41,867	41,432	435
Other public	8,869	541	506	35
Forest industry	17,685	11,458	11,296	162
Farmer and miscellaneous private	10,456	11,104	10,628	476
Total ^{?/}	16,680	64,970	63,862	1,108

[/] Includes trees 5.0-inch d.b.h. and larger.

^{?/} Numbers may not add to totals due to rounding.

^{3/} Includes softwood trees 9.0-inch d.b.h. and larger, and hardwood trees 11.0-inch d.b.h. and larger.

^{4/} Includes trees 11.0-inch d.b.h. and larger.

Table 16--Volume of all growing stock on commercial forest land, by county and ownership class, Sacramento area, California, January 1, 1972

(In million cubic feet)

County	Total	National Forest	Other public	Forest industry	Farmer and miscellaneous private
Butte	885	286	10	361	228
Colusa	47	45	--	--	2
El Dorado	1,865	911	30	471	453
Glenn	444	357	--	77	10
Lake	318	233		38	47
Napa	48	--	--	--	48
Nevada	887	389	17	24	457
Placer	1,465	792	29	266	378
Plumas	3,562	2,802	22	248	490
Sacramento					-
Sierra	1,537	1,174	4	183	176
Sutter	4	--	--	--	4
Tehama	1,671	924	7	688	52
Yolo	2	--	--	--	2
Yuba	308	169	3	4	132
Total ^{1/}	13,042	8,082	122	2,358	2,480

^{1/} Numbers may not add to totals due to rounding.

Table 17--Volume of all sawtimber on commercial forest land, by county and ownership class, Sacramento area, California, January 1, 1972

(International 1/4-inch rule)

County	Total	National Forest	Other public	Forest industry	Farmer and miscellaneous private
- - - - - Million board feet - - - - -					
Butte	4,356	1,573	56	1,665	1,062
Colusa	265	255			10
El Dorado	11,220	5,765	155	2,869	2,431
Glenn	2,613	2,064		498	51
Lake	1,772	1,293		251	228
Napa	227		-	--	227
Nevada	4,895	2,171	76	148	2,500
Placer	8,871	4,895	159	1,640	2,177
Plumas	19,787	15,763	130	1,339	2,555
Sacramento					
Sierra	8,935	6,768	17	1,156	994
Sutter	21	--	--	--	21
Tehama	9,696	5,542	38	3,854	262
Yolo	9	--	--	--	9
Yuba	1,680	938	14	22	706
Total ^{1/}	74,348	47,028	644	13,443	13,233

^{1/} Numbers may not add to totals due to rounding.

Table 18--Volume *of all sawtimber on commercial forest land, by county and ownership class, Sacramento area, California, January 1, 1972*

(Scribner rule)

County	Total	National Forest	Other public	Forest industry	Farmer and miscellaneous private
-----Million board feet-----					
Butte	3,648	1,337	48	1,383	880
Colusa	236	227			9
El Dorado	9,850	5,208	130	2,475	2,037
Glenn	2,361	1,880		438	43
Lake	1,588	1,180		219	189
Napa	194				194
Nevada	4,215	1,898	59	130	2,128
Placer	7,842	4,431	134	1,382	1,895
Plumas	17,108	13,823	112	1,124	2,049
Sacramento					
Sierra	7,816	5,935	13	1,020	848
Sutter	18	-			18
Tehama	8,599	5,083	34	3,268	214
Yolo	8				8
Yuba	1,487	865	11	19	592
Total¹	64,970	41,867	541	11,458	11,104

¹ Numbers may not add to totals due to rounding.

Table 19--Volume *of timber on commercial forest land, by class of timber and by softwoods and hardwoods, Sacramento area, California, January 1, 1972*

(In million cubic feet)

Class of timber	All species	Softwoods	Hardwoods
Sawtimber trees:			
Saw log portion	11,562	11,274	288
Upper stem portion	480	1 ¹ 397	J83
Total	12,042	11,671	371
Poletimber trees	1,000	824	176
All growing-stock trees	13,042	12,495	547
Sound cull trees	165	34	130
Rotten cull trees	168	121	47
Salvable dead trees	107	106	1
All timber-¹	13,482	12,755	726

^{1/} Used relationships from 1968 and 1970 compilation for all of California.

^{2/} Numbers may not add to totals due to rounding.

Table 20--Net volume of softwood growing stock on commercial forest *land* by diameter and *ownership* classes, Sacramento area, California, January 1, 1972

Diameter class	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
Inches d.b.h.	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
5.0 - 6.9	217	129	1	41	46
7.0 - 8.9	348	209	1	68	70
9.0 - 10.9	443	260	3	93	87
11.0 - 12.9	510	297	5	91	117
13.0 - 14.9	617	344	7	116	150
15.0 - 16.9	683	391	9	120	163
17.0 - 18.9	692	374	7	128	183
19.0 - 20.9	848	536	9	130	173
21.0 - 28.9	2,703	1,600	32	512	559
29.0 - 38.9	2,765	1,849	26	490	400
39.0 and larger	2,671	1,922	4	449	296
Total ^{1/}	12,495	7,909	105	2,238	2,243

^{1/} Numbers may not add to totals due to rounding.

Table 21--Net volume of *softwood* sautimber on commercial forest land by diameter and *ownership* classes, Sacramento area, California, January 1, 1972

(International 1/4-inch rule)

Diameter class	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
Inches d.b.h.	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
9.0 - 10.9	1,568	874	10	365	319
11.0 - 12.9	2,314	1,359	22	409	524
13.0 - 14.9	3,156	1,780	36	587	753
15.0 - 16.9	3,686	2,095	46	651	894
17.0 - 18.9	3,888	2,046	41	730	1,071
19.0 - 20.9	5,086	3,201	57	784	1,044
21.0 - 28.9	16,776	9,748	200	3,316	3,512
29.0 - 38.9	18,228	12,137	168	3,310	2,613
39.0 and larger	18,500	13,329	28	3,126	2,017
Total ^{1/}	73,200	46,568	608	13,277	12,747

"Numbers may not add to totals due to rounding.

Table 22--Net volume of softwood sawtimber on commercial forest *land* by diameter and *ownership* classes, Sacramento area, California, January 1, 1972

(Scribner rule)

Diameter class	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
Inches d.b.h.	- - - - -	- - - - -	- - - - -	- - - - -	- - - - -
9.0 - 10.9					
11.0 - 12.9	1,552	951	11	267	323
13.0 - 14.9	2,340	1,353	25	427	535
15.0 - 16.9	2,918	1,693	34	505	686
17.0 - 18.9	3,216	1,720	34	594	868
19.0 - 20.9	4,356	2,783	47	655	871
21.0 - 28.9	14,904	8,750	175	2,904	3,075
29.0 - 38.9	16,934	11,387	154	3,018	2,375
39.0 and larger	17,644	12,796	27	2,926	1,895
Total ^{1/}	63,862	41,432	506	11,296	10,628

^{1/} Numbers may not add to totals due to rounding.

Table 23--Volume of growing stock on commercial forest land by species and ownership class, Sacramento area, California, January 1, 1972

(In million cubic feet)

Species	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
Softwoods:					
Douglas-fir	2,124	1,317	33	434	340
Red fir ^{1/}	1,542	988	1	205	348
Red fir ^{1/}	1,542	988	1	205	348
Grand fir	12	12			
Ponderosa pine	2,108	1,185	32	500	391
Jeffrey pine	742	566	4	21	151
Sugar pine	1,181	797	8	285	91
Western white pine	87	50		16	21
Lodgepole pine	272	108		54	110
Knobcone pine	1	1			
Mountain hemlock	12	7		5	--
Redwood--old growth	2			--	2
Redwood--young growth		5			
Incense-cedar	808	342	11	184	271
Total ^{2/}	12,495	7,909	105	2,238	2,243
Hardwoods:					
Red alder	3	1		--	2
White alder	6	2		3/	4
Oregon ash	3/	3/			3/
Quaking aspen	6	5	--		1
Black cottonwood	12	1	1		10
Bigleaf maple	5	2	--	--	3
California black oak	354	127	8	67	152
Miscellaneous oaks ^{4/}	129	26	6	53	44
Golden chinkapin	1	1	--	--	--
Pacific madrone	29	6	2		21
Other hardwoods	1	1	--		--
Total ^{1/}	547	173	17	120	236
All species ^{2/}	13,042	8,082	122	2,358	2,480

^{1/} Includes California and Shasta red firs.

^{2/} Numbers may not add to totals due to rounding.

^{3/} Less than 500,000 cubic feet.

^{4/} Includes California live oak, California white oak, canyon live oak, and tanoak.

Table 24--Volume of sawtimber on commercial forest land by species and ownership class, Sacramento area, California, January 1, 1972

(International 1/4-inch rule)

Species	All ownerships	National Forest	Other public	Forest industry	Farmer and private
- - - - - Mil l i on board feet - - - - -					
Softwoods:					
Douglas-fir	12,259	7,678	200	2,518	1,863
White fir	21,135	14,432	92	3,411	3,200
Red fir ¹ /	9,567	6,151	4	1,247	2,165
Grand fir	61	61	--	--	
Ponderosa pine	12,353	7,185	183	2,846	2,139
Jeffrey pine	4,121	3,215	24	135	747
Sugar pine	7,516	5,170	49	1,768	529
Western white pine	533	309	--	98	126
Lodgepole pine	1,411	469		330	612
Knobcone pine	1	1		--	
Mountain hemlock	65	39		26	
Redwood	32	--	--	--	32
Incense-cedar	4,147	1,858	57	898	1,334
Total	73,200	46,568	608	13,277	12,747
Hardwoods:					
Red alder	11	3			8
White alder	15	6			9
Oregon ash	1	1			--
Quaking aspen	15	10	--		5
Black cottonwood	41	4	5		32
Bigleaf maple	6	2	--	--	4
California black oak	762	300	17	133	312
Miscellaneous oaks ² /	230	111	11	32	76
Golden chinkapin	3	3	--	--	--
Pacific madrone	57	15	3		39
Other hardwoods	4	4	--		--
Total	1,147	460	36	166	485
All species ³	74,348	47,028	644	13,443	13,233

¹/ Includes California and Shasta red firs.

² Includes California live oak, California white oak, canyon live oak, and tanoak.

³ Numbers may not add to totals due to rounding.

Table 25--Volume of sawtimber on commercial forest land, by species and ownership class, Sacramento area, California, January 1, 1972

(Scribner rule)

Species	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
- - - - - Million board feet - - - - -					
Softwoods:					
Douglas-fir	10,879	7,022	171	2,127	1,559
White fir	18,039	12,428	74	2,878	2,659
Red fir ^{1/}	8,367	5,365	3	1,073	1,926
Grand fir	56	56	--	--	
Ponderosa pine	10,988	6,668	153	2,412	1,755
Jeffrey pine	3,628	2,914	17	121	576
Sugar pine	6,841	4,763	43	1,578	457
Western white pine	476	274	--	90	112
Lodgepole pine	1,200	395		288	517
Knobcone pine	1	1		--	
Mountain hemlock	53	31		22	
Redwood	27	--	--	--	27
Incense-cedar	3,310	1,517	44	708	1,041
Total	63,862	41,432	506	11,296	10,628
Hardwoods:					
Red alder	11	3			8
White alder	15	6			9
Oregon ash	1	1			--
Quaking aspen	15	10	--		5
Black cottonwood	41	4	5		32
Bigleaf maple	7	2	--	--	5
California black oak	740	287	16	131	306
Miscellaneous oaks ^{2/}	215	100	10	31	74
Golden chinkapin	3	3	--	--	--
Pacific madrone	55	14	3		38
Other hardwoods	4	4	--		-
Total	1,108	435	35	162	476
All species ^{3/}	64,970	41,867	541	11,458	11,104

^{1/} Includes California and Shasta red firs.

^{2/} Includes California live oak, California white oak, canyon live oak, and tanoak.

^{3/} Numbers may not add to totals due to rounding.

Table 26--Volume of growing stock on commercial forest land, by species and diameter class, Sacramento area, California,
January 1, 1972
(In million cubic feet)

Species	Diameter class (inches at breast height)											
	All classes	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 and larger
Softwoods:												
Douglas-fir	2,124	45	64	79	82	91	105	102	109	393	479	577
White fir	3,602	83	136	165	185	220	227	243	294	797	748	506
Red fir/	1,542	15	23	31	43	50	60	74	92	363	395	395
Grand fir	12	1	1	--						2	8	
Ponderosa pine	2,108	19	42	62	85	114	127	117	170	539	454	377
Jeffrey pine	745	15	24	33	30	44	46	41	54	134	166	156
Sugar pine	1,181	7	14	13	21	22	35	39	50	213	268	495
Western white pine	87	2/	2/	1	2	3	2	4	4	24	21	25
Lodgepole pine	272	5	9	15	18	18	24	21	22	73	57	7
Knobcone pine	1	--	2/	--					2		2	
Mountain hemlock	12	2/	2/	1		1	1	2/		4		2/
Redwood	7						2/		1	3	1	
Incense-cedar	808	28	35	42	40	54	54	50	52	157	163	133
Total	12,495	217	348	443	510	617	683	692	848	2,703	2,765	2,671
Hardwoods:												
Red alder	3	--	2/	2/	--	--				1	2	
White alder	6	2/	1	1	2/	2	--			2	--	
Oregon ash	2/		2/	--	--	--	2/					
Quaking aspen	6	2/	1	1	2/	1	1	1	1	2/	--	--
Black cottonwood	12	--	--	2/	2/	2/	--	1	2	7	1	1
Bigleaf maple	5	1	1	1	2/	1	1	1	--	2/	--	--
California black oak	354	24	38	38	34	29	27	31	23	70	33	9
Miscellaneous oaks ^{3/}	129	15	20	27	15	10	6	7	6	11	7	2
Golden chinkapin	1	2/	--	1	--	2/	2/	--	2/	2/	2/	--
Pacific madrone	29	1	2	2	3	6	7	2	3	2	1	
Other hardwoods	1	--	--	--	2/	1	2/	2/	--	--	--	
Total	547	42	64	72	52	49	42	43	35	93	44	12
All species ^{4/}	13,042	259	412	515	562	666	725	735	883	2,796	2,809	2,683

^{1/} Includes California and Shasta red firs.

^{2/} Less than 500,000 cubic feet.

^{3/} Includes California live oak, California white oak, canyon live oak, and tanoak.

^{4/} Numbers may not add to totals due to rounding.

Table 27--Volume of sawtimber on commercial forest land, by species and diameter class, Sacramento area, California,
January 1, 1972

(International 1/4-inch rule)

Species	Diameter class (inches at breast height)									
	All classes	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 and larger
----- Million board feet -----										
Softwoods:										
Douglas-fir	12,259	231	332	419	542	569	627	2,417	3,128	3,994
White fir	21,135	538	875	1,222	1,334	1,451	1,815	5,210	5,138	3,551
Red fir ^{1/}	9,567	145	225	291	360	444	559	2,254	2,591	2,699
Grand fir	61							12	49	--
Ponderosa pine	12,353	214	359	534	630	613	1,011	3,263	3,020	2,708
Jeffrey pine	4,121	146	129	190	207	193	311	760	1,070	1,115
Sugar pine	7,516	41	90	118	203	225	306	1,340	1,748	3,443
Western white pine	533	3	8	13	15	19	23	151	135	164
Lodgepole pine	1,411	42	72	81	115	108	126	446	371	46
Knobcone pine	1	--	1			--	--	--	--	--
Mountain hemlock	65	4	5	5	5	2	6	21	15	2
Redwood	32	--	2	--	2	6	5	15	3	--
Incense-cedar	4,147	203	216	282	272	259	295	885	959	777
Total	73,200	1,568	2,314	3,156	3,686	3,888	5,086	16,776	18,228	18,500
Hardwoods:										
Red alder	11		--	--				3	8	
White alder	16		2/	5	--			11	--	
Oregon ash	1		--	--	1	--	--	--	--	
Quaking aspen	15		2/	4	4	5	1	2/	--	--
Black cottonwood	41		2/	2	--	2	5	25	6	1
Bigleaf maple	7		2/	1	2	1	--	2	--	--
California black oak	762		68	66	66	83	80	225	134	41
Miscellaneous oaks ^{3/}	230		30	29	18	28	31	52	29	12
Golden chinkapin	3		--	2/	2/	--	1	1	1	--
Pacific madrone	57		6	12	16	5	11	6	2	
Other hardwoods	4		2/	2	1	1	--	--	--	
Total	1,147		103	122	111	124	127	325	180	55
All species ^{-1/}	74,348	1,568	2,417	3,278	3,797	4,012	5,213	17,101	18,408	18,555

^{1/} Includes California and Shasta red firs.

^{2/} Less than 500,000 board feet.

^{3/} Includes California live oak, California white oak, canyon live oak, and tanoak.

^{4/} Numbers may not add to totals due to rounding.

Table 28--Volume of sawtimber on commercial forest land, by species and diameter class, Sacramento area, California,
January 1, 1972
(Scribner rule)

Species	Diameter class (inches at breast height)									
	All classes	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 and larger
----- Million board feet -----										
Softwoods:										
Douglas-fir	10,879		241	317	428	463	524	2,123	2,924	3,859
White fir	18,039		651	947	1,072	1,198	1,540	4,565	4,713	3,353
Red fir/ Grand fir	8,367		154	216	286	368	476	1,979	2,371	2,518
Ponderosa pine	56		--	--	--	--	--	11	45	--
Jeffrey pine	10,988		192	380	509	529	903	3,017	2,868	2,590
Sugar pine	3,628		61	130	164	165	283	720	1,032	1,074
Western white pine	6,841		55	81	149	177	252	1,173	1,629	3,326
Lodgepole pine	476		4	9	10	15	19	131	127	159
Knobcone pine	1,200		57	66	96	93	109	400	336	42
Mountain hemlock	1		1	--	--	--	--	--	--	--
Redwood--old growth	53		2	4	3	2	6	19	15	2
Redwood--young growth	6		--	--	2	--	--	2	2	--
Incense-cedar	21		1	--	--	4	4	11	--	--
	3,310		131	190	200	203	241	755	871	719
Total	63,862		1,552	2,340	2,918	3,216	4,356	14,904	16,934	17,644
Hardwoods:										
Red alder	11		--	--	--	--	--	3	8	
White alder	15	--	2/	5	--	--	--	10	--	
Oregon ash	1		--	--	1	--	--	2/	--	--
Quaking aspen	15		1	4	4	5	1	2/	--	--
Black cottonwood	41		2/	2	--	2	5	24	6	1
Bigleaf maple	6		2/	1	2	1	--	2	--	--
California black oak	740		65	64	64	80	76	220	131	41
Miscellaneous oaks ^{3/}	215		28	28	18	25	28	49	28	12
Golden chinkapin	3		--	2/	1	--	2/	1	1	--
Pacific madrone	55		6	12	16	5	10	6	2	
Other hardwoods	4		2/	1	1	1	--	--	--	
Total	1,108		100	117	107	120	120	316	175	53
All species ^{4/}	64,970		1,652	2,457	3,025	3,336	4,476	15,220	17,109	17,697

^{1/} Includes California and Shasta red firs.

^{1/} Less than 500,000 board feet.

^{3/} Includes California live oak, California white oak, canyon live oak, and tanoak.

^{4/} Numbers may not add to totals due to rounding.

Table 29--*Net annual growth of growing stock and sawtimber on commercial forest land, by ownership class and by softwoods and hardwoods, Sacramento area, California, January 1, 1972*

Ownership class	Average volume per acre	All species	Softwoods	Hardwoods
Cubic feet - - - - - Thousand cubic feet - - - - -				
Growing stock: ^{1/}				
National Forest	50	106,894	102,935	3,959
Other public	49	3,018	2,251	767
Forest industry	63	40,951	37,589	3,362
Farmer and miscellaneous private	51	54,650	50,323	4,327
Total	53	205,513	193,098	12,415
Board feet - - - - - Thousand board feet - - - - -				
Sawtimber (International 1/4-inch rule): ^{2/}				
National Forest	305	646,465	639,950	6,515
Other public	254	15,481	14,845	636
Forest industry	417	272,205	269,121	3,084
Farmer and miscellaneous private	293	311,338	303,683	7,655
Total	320	1,245,489	1,227,599	17,890
Sawtimber (Scribner rule): ^{3/}				
National Forest	245	519,981	513,640	6,341
Other public	171	10,435	9,804	631
Forest industry	352	230,156	227,108	3,048
Farmer and miscellaneous private	266	282,231	274,654	7,577
Total	268	1,042,803	1,025,206	17,597

^{1/} Includes trees 5.0-inch d.b.h. and larger.

^{2/} Includes softwood trees 9.0-inch d.b.h. and larger, and hardwood trees 11.0-inch d.b.h. and larger.

^{3/} Includes trees 11.0-inch d.b.h. and larger.

Table 30--*Net annual growth of growing stock on commercial forest land by species and ownership class, Sacramento area, California, January 1, 1972*

(In thousand cubic feet)

Species	All ownerships	National Forest	Other public	Forest industry	Farmer and misprilateous private
Softwoods:					
Douglas-fir	29,181	13,498	^{1/} -223	6,406	9,500
white fir	60,668	43,912	941	7,532	8,283
Red fir ^{2/}	17,565	10,991		3,245	3,329
Grand fir	135	135	--	--	
Ponderosa pine	38,566	12,919	1,231	10,260	14,156
Jeffrey pine	13,325	8,711	133	377	4,104
Sugar pine	16,291	7,051	84	5,854	3,302
western white pine	1,333	442	--	321	570
Lodgepole pine	2,868	1,732		729	407
Mountain hemlock	115	115		--	--
Redwood--young growth	202	—			202
Incense-cedar	12,850	3,429	85	2,865	6,471
Total	193,098	102,935	2,251	37,589	50,323
Hardwoods:					
Red alder	39	27			12
white alder	80	67			13
Quaking aspen	215	198	--		17
Black cottonwood	23	2	15		6
Bigleaf maple	174	117			57
California black oak	7,753	3,028	549	1,121	3,055
Miscellaneous oaks ^{3/}	3,529	417	37	2,241	834
Golden chinkapin	23	23	--	--	--
Pacific madrone	579	80	166		333
Total	12,415	3,959	767	3,362	4,327
All species--	205,513	106,894	3,018	40,951	54,650

^{1/} Negative net annual growth is the result of net annual mortality exceeding gross annual growth.

^{2/} Includes California and Shasta red firs.

^{3/} Includes California live oak, California white oak, canyon live oak, and tanoak.

⁴ Numbers may not add to totals due to rounding.

Table 31--Net annual growth of sawtimber on commercial forest land, by species and ownership class, Sacramento area, California, January 1, 1972

(International 1/4-inch Rule)

Species	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
- - - - - Thousand board feet - - - - -					
Softwoods:					
Douglas-fir	180,015	78,760	1,454	52,035	47,766
White fir	385,119	262,017	3,744	58,172	61,186
Red fir ^{1/}	114,160	68,234	--	24,725	21,201
Grand fir	416	416	--	--	--
Ponderosa pine	266,183	91,032	7,451	75,087	92,613
Jeffrey pine	79,710	52,367	786	2,811	23,746
Sugar pine	109,260	50,446	652	39,360	18,802
Western white pine	9,214	3,401	--	2,140	3,673
Lodgepole pine	20,628	9,437		4,663	6,528
Mountain hemlock	1,421	1,421		--	--
Redwood--young growth	1,319	--	--	--	1,319
Incense-cedar	60,153	22,419	758	10,128	26,848
Total	1,227,599	639,950	14,845	269,121	303,683
Hardwoods:					
Red alder	111	38			73
White alder	243	169			74
Quaking aspen	160	72	--		88
Black cottonwood	152	12	71		69
Bigleaf maple	164	43	--	--	121
California black oak	12,246	5,095	270	1,787	5,094
Miscellaneous oaks ^{2/}	3,736	899	55	1,297	1,485
Golden chinkapin	53	53	--	--	--
Pacific madrone	1,024	134	240		650
Total	17,890	6,515	636	3,084	7,655
All species /	1,245,489	646,465	15,481	272,205	311,338

^{1/} Includes California and Shasta red firs.

^{2/} Includes California live oak, California white oak, canyon live oak, and tanoak.

^{3/} Numbers may not add to totals due to rounding.

Table 32--Net annual *growth of sawtimber* on commercial forest Land, *by species and ownership* class, Sacramento area, California January 1, 1972

(Scribner rule)

Species	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
Thousand - board feet - - - - -					
Softwoods:					
Douglas-fir	141,295	60,655	¹¹ -1,577	41,947	40,270
white fir	333,161	218,163	3,167	47,256	64,575
Red fir ^{2/}	93,963	57,555	--	16,922	19,486
Grand fir	380	380	--	--	--
Ponderosa pine	224,642	73,184	6,355	64,630	80,473
Jeffrey pine	60,010	36,316	519	2,327	20,848
Sugar pine	94,528	40,903	685	36,928	16,112
Western white pine	8,549	2,966	--	2,015	3,568
Lodgepole pine	13,381	7,076		3,839	2,466
Mountain hemlock	528	528		--	--
Redwood--young growth	1,152	--	--	--	1,152
Incense-cedar	53,619	16,014	655	11,244	25,706
Total	1,025,206	513,640	9,804	227,108	274,654
Hardwoods:					
Red alder	112	40			72
white alder	242	168			74
Quaking aspen	158	72	--		86
Black cottonwood	146	5	70		71
Bigleaf maple	165	44	--	--	121
California black oak	12,039	4,961	270	1,770	5,038
Miscellaneous oaks ^{3/}	3,670	867	55	1,278	1,470
Golden chinkapin	54	54	--	--	--
Pacific madrone	1,010	130	236		644
Total	17,597	6,341	631	3,048	7,577
All species ¹	1,042,803	519,981	10,435	230,156	282,231

¹Negative net annual growth is the result of net annual mortality exceeding gross annual growth.

^{2/} Includes California and Shasta red firs.

³ Includes California live oak, California white oak, canyon live oak, and tanoak.

⁴ Numbers may not add to totals due to rounding.

Table 33--Average annual mortality of growing stock on commercial forest land, by species and ownership class, Sacramento area California, January 1, 1972

(In thousand cubic feet)

Species	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
Softwoods:					
Douglas-fir	5,010	2,955	668	1,049	338
White fir	11,015	3,863		3,482	3,670
Red fir/	5,828	4,756		289	783
Ponderosa pine	4,184	948	9	1,339	1,888
Jeffrey pine	1,225	1,148		77	
Sugar pine	1,089	309	59	721	
Western white pine	345	142			203
Lodgepole pine	1,876	526		199	1,151
Incense-cedar	1,588	576	75	401	536
Total	32,158	15,223	810	7,557	8,568
Hardwoods:					
Quaking aspen	60	60			
Black cottonwood	76	--			76
California black oak	442	370			72
Canyon live oak	145	--			145
Pacific madrone	62	62			
Total	785	492			293
All species ^{2a}	32,943	15,715	810	7,557	8,861

Includes California and Shasta red firs.

^{2/} Numbers may not add to totals due to rounding.

Table 34--Average annual mortality of sawtimber on commercial forest land, by species and ownership class, Sacramento area, California, January 1, 1972

(International 1/4-inch rule)

Species	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
-----Thousand board feet-----					
Softwoods:					
Douglas-fir	29,748	18,423	4,300	5,149	1,876
White fir	65,041	22,732	--	21,091	21,218
Red fir/	26,418	20,796		1,211	4,411
Ponderosa pine	23,812	13,081		3,146	7,585
Jeffrey pine	2,999	2,999	--	--	--
Sugar pine	10,021	6,940	300	2,781	--
Western white pine	2,163	888	--	--	1,275
Lodgepole pine	9,349	1,709	--	1,318	6,322
Incense-cedar	6,300	3,303	76	1,671	1,250
Total	175,850	90,870	4,676	36,367	43,937
Hardwoods:					
Quaking aspen	172	172			
Black cottonwood	287	--			287
California black oak	1,609	1,517			92
Pacific madrone	102	102			
Total	2,170	1,791			379
All species ¹	178,020	92,661	4,676	36,367	44,316

¹Includes California and Shasta red firs.

² Numbers may not add to totals due to rounding.

Table 35--Average annual mortality of saw-timber on commercial forest Land by species and ownership class, Sacramento area, California, January 1, 1972

(Scribner rule)

Species	All ownerships	National Forest	Other public	Forest industry	Farmer and miscellaneous private
- - - - - Thousand board feet - - - - -					
Softwoods:					
Douglas-fir	26,877	17,118	3,925	4,365	1,469
White fir	54,657	19,688	--	17,606	17,363
Red fir ^{1/}	21,895	17,290		1,021	3,584
Ponderosa pine	19,139	11,996		2,028	5,115
Jeffrey pine	2,586	2,586	--	--	--
Sugar pine	8,451	6,261	192	1,998	--
Western white pine	1,838	703	--	--	1,135
Lodgepole pine	7,371	1,346		1,178	4,847
Incense-cedar	4,432	2,341		1,161	930
Total	147,246	79,330	4,117	29,357	34,442
Hardwoods:					
Quaking aspen	167	167			
Black cottonwood	283	--			283
California black oak	1,593	1,503			90
Pacific madrone	100	100			
Total	2,143	1,770			373
All species -"	149,389	81,100	4,117	29,357	34,815

^{1/}Includes California and Shasta red firs.

Numbers may not add to totals due to rounding.

Table 36--Average annual mortality of growing stock and sawtimber on commercial forest land outside National Forests, by cause of death and by softwoods and hardwoods, Sacramento area, California

Cause of death	Growing stock			Sawtimber ^{1/}			Sawtimber ^{2/}		
	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods	All species	Softwoods	Hardwoods
	- - - -Thousand cubic feet-			- - - - -Thousand board feet - - - - -					
Fire	1,444	1,259	185	5,343	5,343		4,038	4,038	
Insects	2,345	2,345		11,401	11,401		8,915	8,915	
Disease	756	756		4,012	4,012		3,264	3,624	
Animals	36	36		139	139				
Weather	4,407	4,299	108	17,242	16,863	379	10,826	10,453	373
Suppression	534	534	--	654	654		192	192	
Logging	273	273		1,050	1,050		827	827	
Unknown	7,433	7,433		45,517	45,517		40,227	40,227	
Total	17,229	16,936	293	85,359	84,980	379	68,290	67,917	373

^{1/} International 1/4-inch rule.

^{2/} Scribner rule.

Table 37--Net *volume of* salvable dead sawtimber on commercial forest land outside National Forests, by volume per acre class and by county, Sacramento area, California

(In thousand cubic feet)

Volume per acre class	Butte	West Sacramento	El Dorado	Nevada group	Placer	Plumas	Sacramento	Tehama
1- 199 cu. ft.	2,997	2,608	4,612	6,317	3,167	5,035		3,597
200- 499 cu. ft.	--	461	4,263	755	8,070	3,770		1,006
500- 999 cu. ft.		--	3,702	3,937	4,219	3,537		--
1,000-1,999 cu. ft.			--	--	--	--		
2,000+								
Total ^{1/}	2,997	3,069	12,577	11,009	15,456	12,342		4,603

^{1/} Numbers may not add to totals due to rounding.

Table 38--Net volume of salvable dead samtimber on commercial forest land outside National Forests, by volume per acre class and by county, Sacramento area, California

(International 1/4-inch rule)

Volume per acre class	Butte	West Sacramento	El Dorado	geoupa	Placer	Plumas	Sacramento	Tehama
- - - - - Thousand board feet - - - - -								
1- 499 bd. ft.	5,395	5,049	4,551	7,617	--	6,422		7,007
500- 999 bd. ft.	11,805	6,540	10,993	17,212	13,918	20,230	--	13,037
1,000-2,499 bd. ft.	-e-	--	38,614	17,661	17,661	10,639		6,469
2,500-4,999 bd. ft.		3,404	--	26,199	54,250	32,252		--
5,000-9,999 bd. ft.		--	26,998	--	--	--		
10,000+								
Total ¹¹	17,200	14,993	81,156	68,689	103,356	69,543		26,513

==Numbers may not add to totals due to rounding.

Table 39--Net volume of salvable dead sautimber on commercial forest land outside National Forests, by volume per acre class and by county, Sacramento area, California

(Scribner rule)

Volume per acre class	Butte	West Sacramento	El Dorado	Nevada group	Placer	Plumas	Sacramento	Tehama
- - - - - Thousand board feet - - - - -								
1- 199 bd. ft.	6,169	8,883	4,027	9,178	--	6,306		7,520
500- 999 bd. ft.	7,310		14,255	11,392	12,003	14,118		8,098
1,000-2,499 bd. ft.			27,364	15,948	47,593	18,011		5,675
2,500-4,999 bd. ft.		3,100		24,731	34,240	17,856		
5,000-9,999 bd. ft.			25,577					
10,000+								
Total ==	13,479	11,983	71,222	61,249	93,836	56,290		21,293

==Numbers may not add to totals due to rounding.

Table 40--Reported timber production by county in the Sacramento area of California and for all of California, 1947-1973

(In thousand board feet) ^{1/}

Year	Butte	Colusa	El Dorado	Glenn	Lake	Napa	Nevada	Placer	Plumas	Sierra	Sutter	Tehama	Yolo	Yuba	Total Sacramento	Total all California
1947	233,319	2/	226,908	900	77,794	2/	80,959	40,074	236,732	67,046	2/	22,500	2/	40,759	1,026,991	3,185,995
1948	192,877	2/	243,794	1	24,500		36,841	44,901	187,743	45,295	2/	96,344	2/	74,119	946,414	3,983,213
1949	136,276	2/	155,481	2/	32,491		71,542	53,025	344,095	42,184	2/	91,758	2/	52,349	979,201	3,795,252
1950	105,352	2/	201,206	6,229	18,100	4/180	98,343	87,229	348,368	41,627	2/	128,143	2/	53,890	1,088,667	4,303,011
1951	126,607	2/	240,251	31,750	21,351		97,024	137,199	318,862	60,128	2/	74,472	2/	31,090	1,138,734	4,984,288
1952	136,523	2/	251,101	25,914	29,874	6/620	103,593	106,424	419,195	65,162	2/	71,730	2/	40,348	1,250,484	5,057,036
1953	172,600	3/	213,380	56,849	3/19,732		151,017	110,750	401,504	99,583	2/	82,868	2/	33,129	1,341,412	5,990,088
1954	129,779	3/	150,456	28,750	3/20,890	4/719	132,739	110,176	276,840	118,598	2/	120,967	2/	57,152	1,147,066	5,600,310
1955	124,134	3/	228,621	34,682	3/34,448	4/10,010	126,285	98,526	289,093	133,456	2/	81,540	2/	44,119	1,204,914	6,014,939
1956	136,065	3/	213,194	51,377	3/17,180	4/5,256	120,199	111,087	300,478	71,400	6/23,055	114,383	2/	45,797	1,209,471	5,861,634
1957	115,381	3/	154,576	43,872	3/39,472	4/2,595	94,480	57,732	268,461	70,195	6/43,589	103,611	2/	42,399	1,036,363	5,346,521
1958	102,033	3/	170,756	32,662	3/40,761	4/8,643	67,292	79,053	213,514	87,452	6/28,024	141,205	2/	49,621	1,021,016	5,675,392
1959	104,890	3/	218,442	40,944	3/30,483	4/725,906	70,246	117,039	211,610	83,905	2/	102,104	2/	67,342	1,072,911	5,886,061
1960	144,113	3/	336,824	39,968	1/34,883	4/9,165	64,442	74,283	179,712	99,594	2/	146,067	2/	36,500	1,165,551	5,136,649
1961	53,319	3/	197,450	52,681	3/45,876	3/3,890	71,692	182,333	185,881	130,170	2/	155,255	2/	60,695	1,139,242	5,342,250
1962	43,588	3/	189,009	66,889	3/11,723	4/1,575	75,108	111,630	215,451	114,622	2/	157,053	2/	60,022	1,046,670	5,538,928
1963	50,329	3/	160,758	45,270	1/19,209	5/9,076	70,120	139,298	250,195	116,168	2/	135,291	2/	26,555	1,022,269	5,461,046
1964	65,721	3/	135,562	48,617	3/36,822	5/2,095	42,768	138,399	214,741	122,270	2/	138,425	2/	35,668	981,088	5,476,265
1965	55,796	3/	199,995	56,305	3/55,597	5/4,021	54,986	95,977	173,383	117,886	2/	140,914	2/	50,128	1,004,988	5,271,234
1966	49,701	3/	233,003	51,020	1/71,877	5/948	59,186	113,215	221,345	165,847	2/	107,365	2/	38,111	1,111,618	5,008,318
1967	69,121	3/	197,264	31,027	3/69,753	5/2	61,420	84,723	250,016	121,843	2/	127,880	2/	66,616	1,079,665	5,062,021
1968	64,220	3/	210,426	22,672	3/49,475	5/117	73,735	95,271	231,957	143,426	2/	139,852	2/	48,933	1,080,084	5,343,898
1969	28,267	/	253,622	58,494	3/3,676	5/8	54,799	103,607	217,743	84,534	2/	158,906	2/	43,835	1,007,491	5,000,596
1970	44,867	3/	259,525	49,494	3/37,330	5/341	52,241	113,971	157,462	46,243	2/	179,551	2/	41,344	982,369	4,565,827
1971	61,000	3/	206,324	42,481	3/41,562	1/690	75,782	118,170	238,915	61,602	2/	181,240	2/	30,095	1,057,861	4,789,617
1972	48,951	3/	194,946	54,376	3/40,087	5/105	79,491	126,715	286,659	92,198	2/	161,119	2/	25,068	1,109,715	5,000,507
1973	48,868	3/	197,163	60,975	3/43,271		62,624	120,056	305,437	73,748	2/	151,732	1	39,829	1,103,703	4,923,488

^{1/} Source: "Production of California timber operators." State Forest Notes. Published annually by California Division of Forestry. Various log rules are used in California; no attempt was made to convert the data to a common base. However, the majority of the timber industry in Sacramento used short-log Scribner rule.

Not available.

^{3/} Colusa and Lake Counties were added together.

^{4/} Napa and Marin Counties were added together.

^{5/} Napa, Marin, and Solano Counties were added together.

^{6/} Alpine, Mono, and Sutter Counties were added together.

Wall, Brian R.

1978. Timber Resources of the Sacramento Area, California, 1972. USDA For. Serv. Resour. Bull. PNW-73, 62 p., illus. Pacific Northwest Forest and Range Experiment Station, Portland, Oregon.

This report summarizes the 1972 timber resource inventory of the Sacramento area, California. Included are detailed tables of forest area, timber volume, growth, mortality, and timber cut and a discussion of the current timber resource and timber industry situation.

KEYWORDS: Forest surveys, statistics (timber), timber statistics, resources (timber), timber resources, California (Sacramento area), Sacramento area--California.

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