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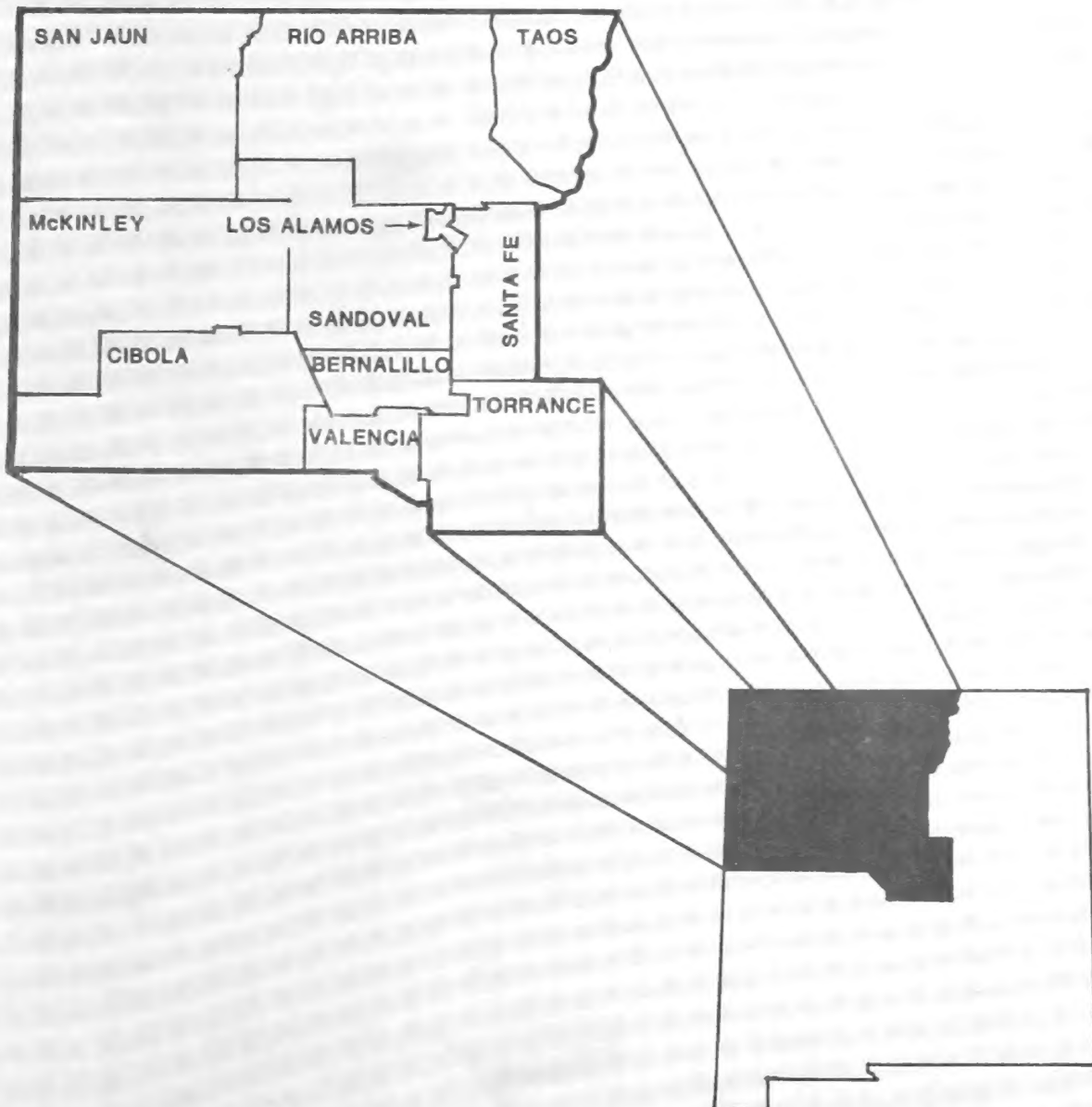
Intermountain
Research Station

Resource Bulletin
INT-46



Timberland and Woodland Resources Outside National Forests in Northwestern New Mexico, 1987

Dwane D. Van Hooser



PREFACE

The primary objective of Forest Survey—a continuing, nationwide undertaking of the Forest Service, U.S. Department of Agriculture—is to provide an assessment of the renewable resources for the forest lands of the Nation. Fundamental to the accomplishment of the objective are the periodic State-by-State resource inventories. Originally, Forest Survey was authorized by the McSweeney-McNary Act of 1928. The current authorization is through the Renewable Resources Research Act of 1978.

The Intermountain Research Station with headquarters in Ogden, UT, conducts the forest resource inventories for the Rocky Mountain States of Arizona, Colorado, Idaho, Montana, New Mexico, Nevada, western South Dakota, Utah, Wyoming, western Texas, and Oklahoma's Panhandle. These inventories provide information on the extent and condition of the forests—its volume of wood and stand dynamics as expressed by growth, removals, and mortality for State, privately owned, and most other forest lands not in the National Forest System. These data, when combined with similar information on National Forest lands, provide a basis for forming forest policies and programs and for the orderly development and use of the resources.

THE AUTHOR

DWANE D. VAN HOOSER is project leader of the Forest Survey Research Work Unit at the Intermountain Research Station, Forest Service, U.S. Department of Agriculture, Ogden, UT. He holds a B.S. degree in forestry and an M.S. degree in forestry and business management from Southern Illinois University, Carbondale. He began his Forest Service career in 1964 with the Southern Forest Experiment Station, New Orleans. Before coming to Ogden, he held a staff position at the Forest Service national headquarters in Washington, DC.

ACKNOWLEDGMENTS

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RESEARCH SUMMARY

The forest land base outside the National Forests in northwestern New Mexico totals more than 4 million acres. Three-quarters of these forests are owned by private individuals or companies. Acres supporting stands of timber species total 917,000, while the woodland resources typified by stands of pinyon-juniper account for more than 3 million acres. These areas contain wood volumes of 936 million cubic feet and 1.5 billion cubic feet, respectively. This report presents additional information on the land base, timberland and woodland area, and associated inventory volume, growth, and mortality.

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324 25th Street
Ogden, UT 84401

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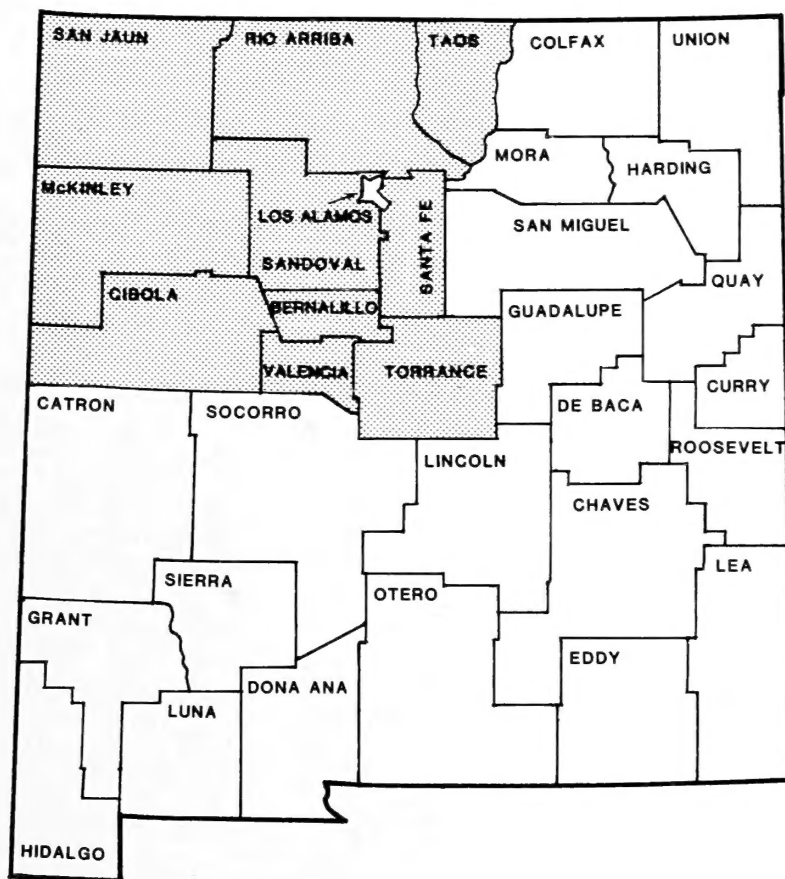
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Timberland and Woodland Resources Outside National Forests in Northwestern New Mexico, 1987

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INTRODUCTION

This report presents the principal findings of the most recent Forest Survey of the timberland and woodland resources outside the National Forests in northwestern New Mexico. Phase I of the survey began in 1985 with the collection and reconciliation of area information and aerial photo interpretation. The field phase began in early June 1986 and was completed in mid-November of the same year.



Northwestern New Mexico counties.

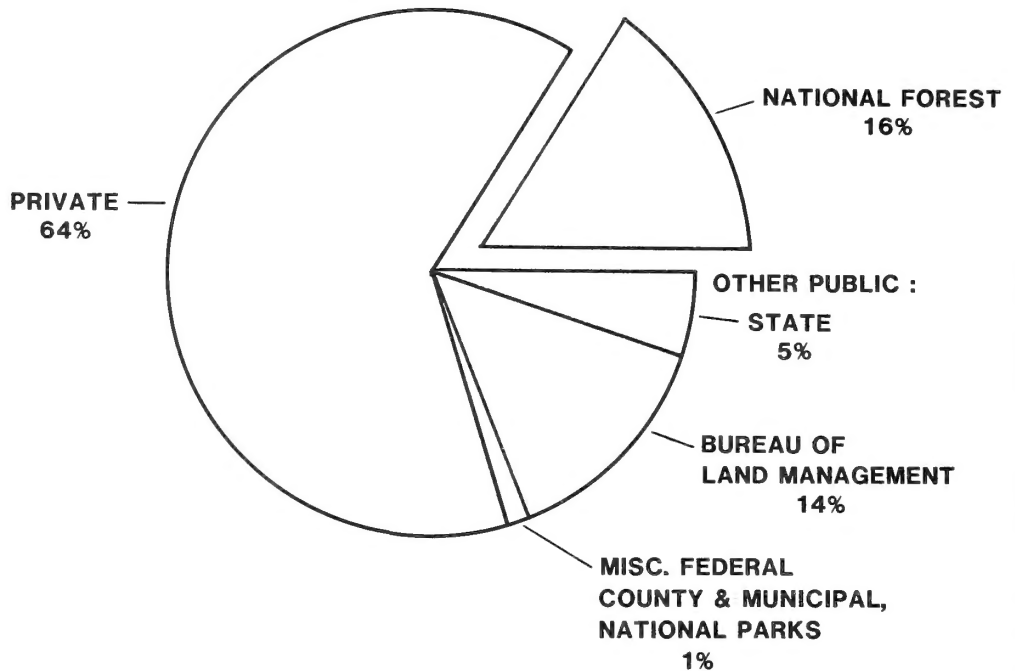
The resource statistics in this report include estimates for those lands in private ownership and those public lands administered by the USDI Bureau of Land Management, other Federal agencies, the State of New Mexico, and county and municipal governments. Reserved areas, such as those lands administered by the USDI National Park Service, are not field sampled but are included in the total area summaries (table 1). Resource estimates for those lands administered by the USDA Forest Service in the National Forest System are not included in this report but will be combined with the estimates presented here and in other sample area reports to form the basis for a comprehensive statewide analysis of New Mexico's forest resource situation.

HIGHLIGHTS

Area

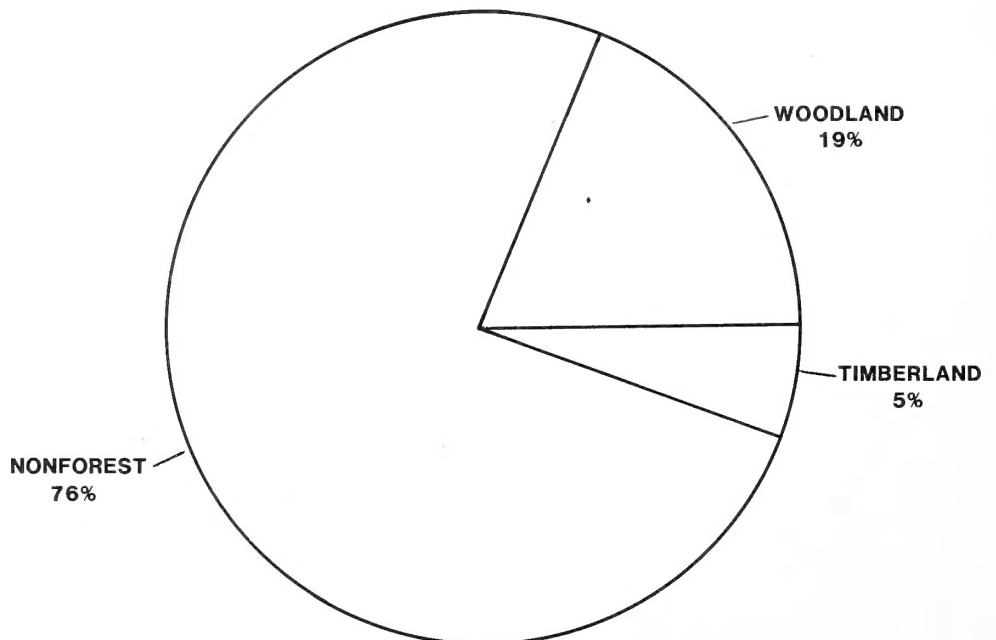
The total land area of northwestern New Mexico is 20.2 million acres. Some 7.3 million of it is publicly owned.

Those lands outside the National Forests, about which this report is concerned, amount to 17 million acres. Of these, the Bureau of Land Management (BLM) administers nearly 3 million acres, the State of New Mexico controls over 1.1 million acres, and the remaining area—nearly 13 million acres—is in private ownership.



Distribution of land in northwestern New Mexico by ownership.

Of the 17 million acres of land outside the National Forests about 4.1 million are forested. Slightly more than a fifth is timberland, and 77 percent is classified as woodland.

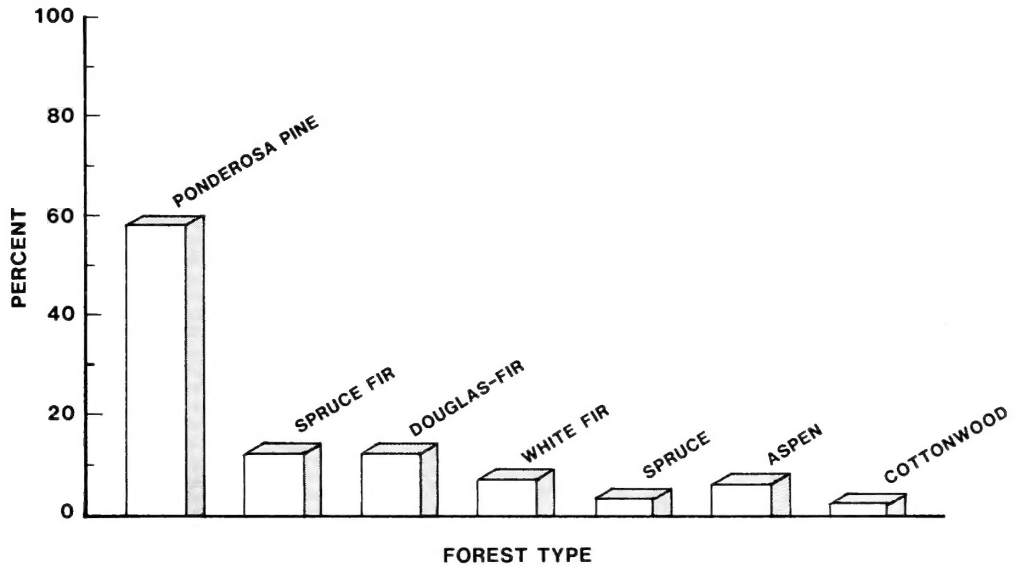


Distribution of land outside National Forests by type of land.

Timberland

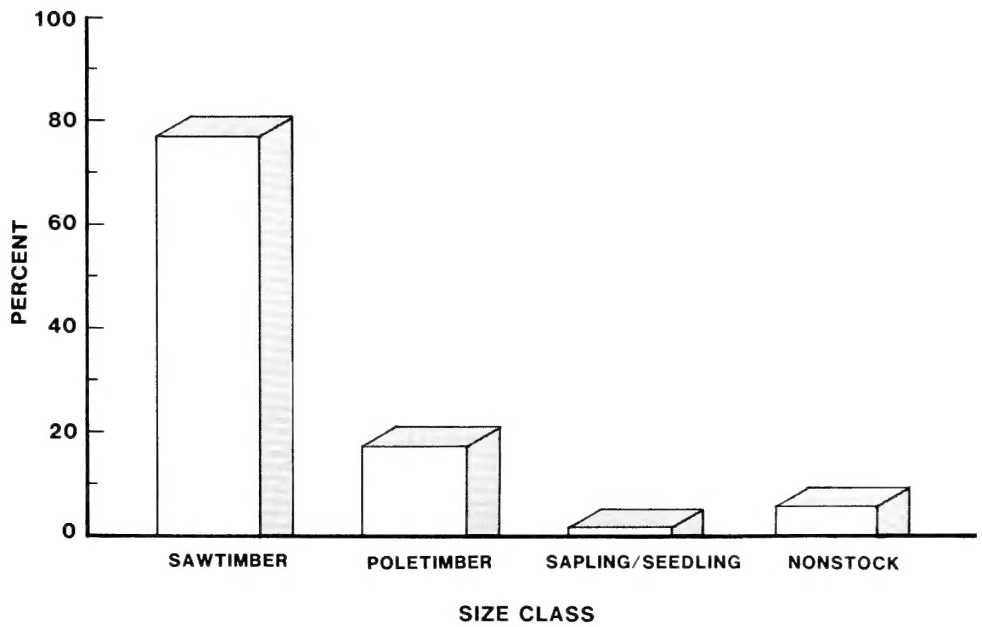
Area—Of the 917,800 acres of timberland a substantial portion is in private holdings. Only 5 percent is administered by public agencies.

Well over half the timberland acres support stands in which ponderosa pine (*Pinus ponderosa*) predominates. Another 25 percent of the area is about evenly divided between the spruce-fir and Douglas-fir types. The remaining area supports stands of white fir, spruce, aspen, or cottonwood.



Distribution of timberland outside National Forests by forest type.

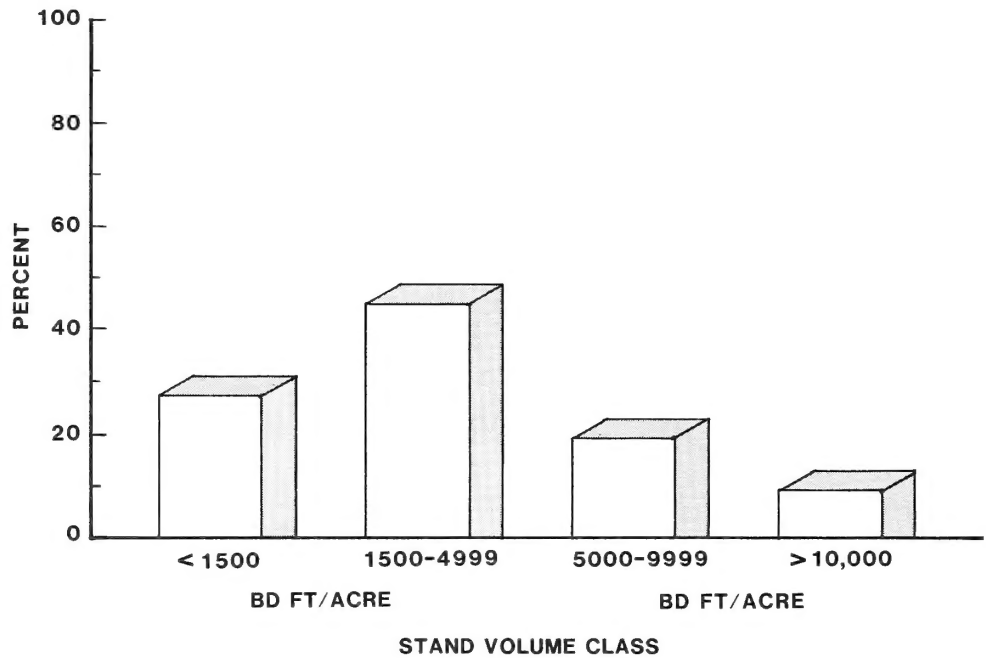
Over three-fourths of the timberland is in sawtimber-size stands. An additional 17 percent supports stands of poletimber. Some 41,000 acres are classed as nonstocked.



Distribution of timberland outside National Forests by stand size class.

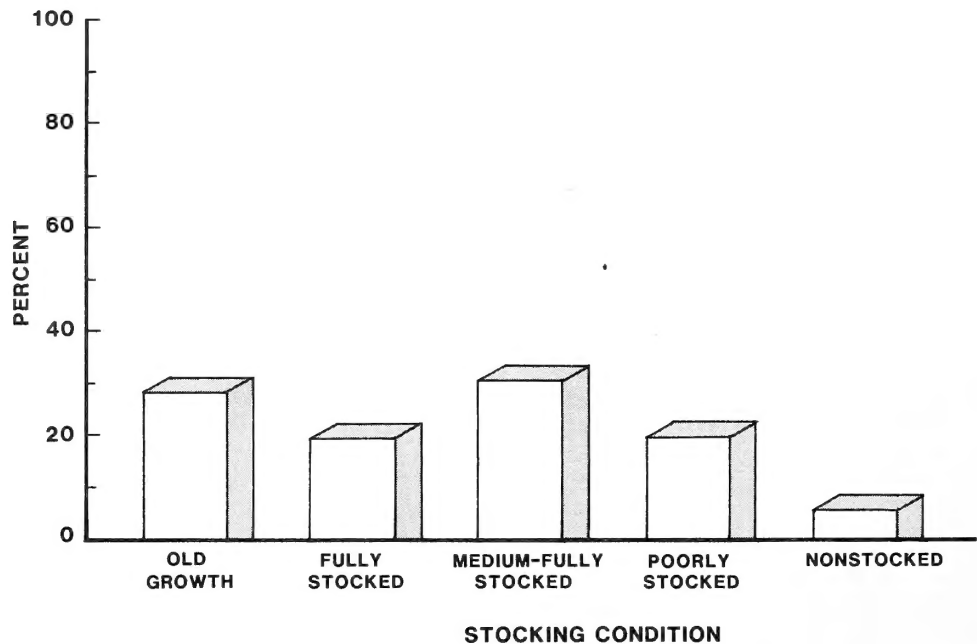
All of the timberland is capable of producing at least 20 cubic feet per acre per year, but only 2 percent has the inherent capability to produce more than 85 cubic feet per acre per year.

Nearly three-quarters of the timberland acres support less than 5,000 board feet per acre, while some 83,000 acres, all in private ownership, contain more than 10,000 board feet per acre.



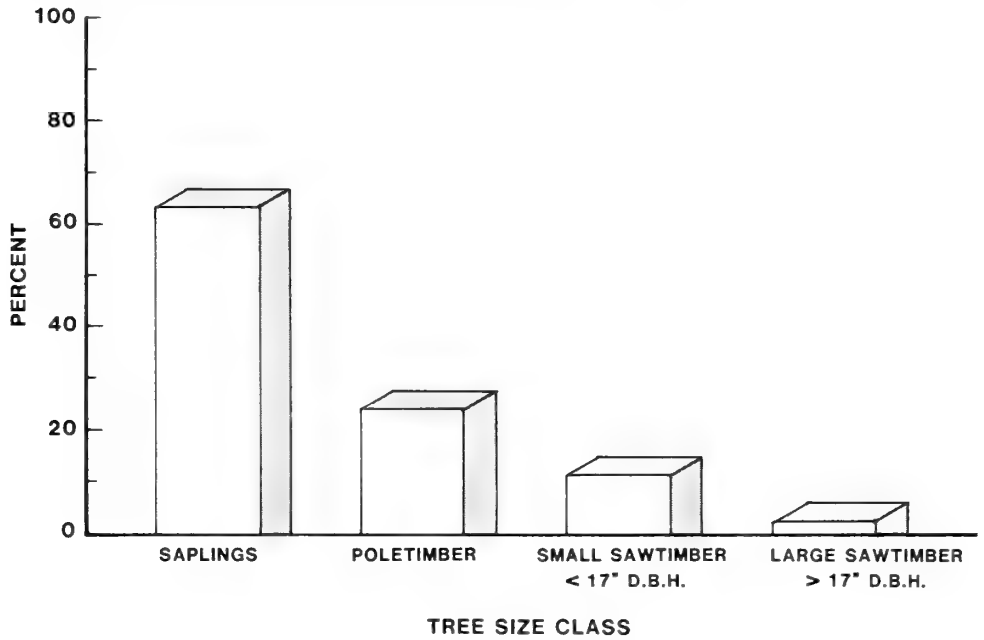
Distribution of timberland outside National Forests by stand volume class.

Nearly half of the timberland acres are medium to fully stocked with acceptable and desirable growing-stock trees. Over a quarter million acres are in stands classified as old-growth, and 19 percent are poorly stocked.



Distribution of timberland outside National Forests by stocking condition.

There are an estimated 276 million growing-stock trees. Nearly two-thirds are saplings, and only 2 percent are classed as large sawtimber. Most of the trees that are dead but considered salvable for wood products are on private land. Similarly, most of the trees that were culled are on private land, and nearly two-thirds are rotten.



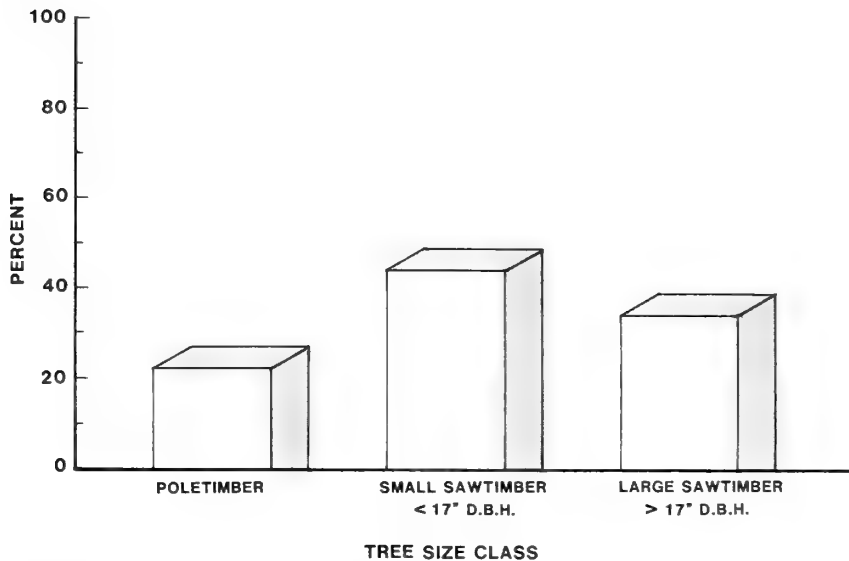
Distribution of growing—stock trees on timberland outside National Forests by tree size class.

Volume—Growing-stock volume amounts to 936 million cubic feet and includes 3.6 billion board feet of sawtimber. Rough, rotten, and salvable dead trees account for an additional 83 million cubic feet of volume.

Of the growing-stock volume, 80 percent is contained in sawtimber-size stands. Less than 1 percent of total growing stock is in sapling/seedling or nonstocked stands.

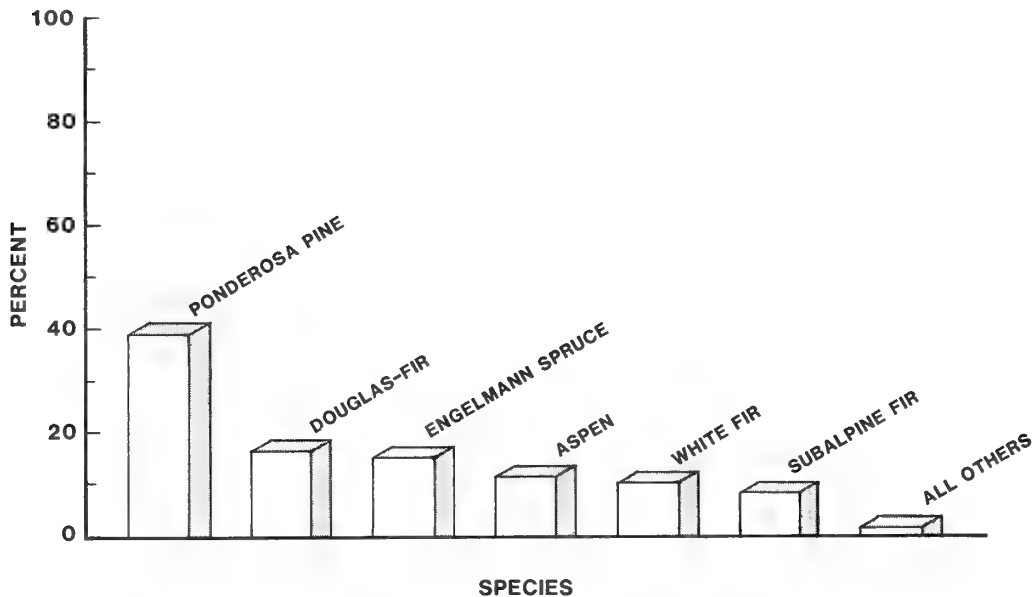
The bulk of the growing-stock and sawtimber volume is in private ownership.

Two-thirds of the growing-stock volume is in trees less than 17 inches diameter at breast height (d.b.h.). About 50 percent of the sawtimber volume is in trees less than 17 inches d.b.h.



Distribution of growing—stock volume on timberland outside National Forests by tree size class.

Ponderosa pine and Douglas-fir (*Pseudotsuga menziesii*) together account for more than half of the total growing-stock volume and 62 percent of the sawtimber volume. White fir (*Abies concolor*) and Engelmann spruce (*Picea engelmannii*) account for an additional 25 percent of the growing-stock volume, and aspen (*Populus tremuloides*) contributes 11 percent. Most of this volume is in private ownership.



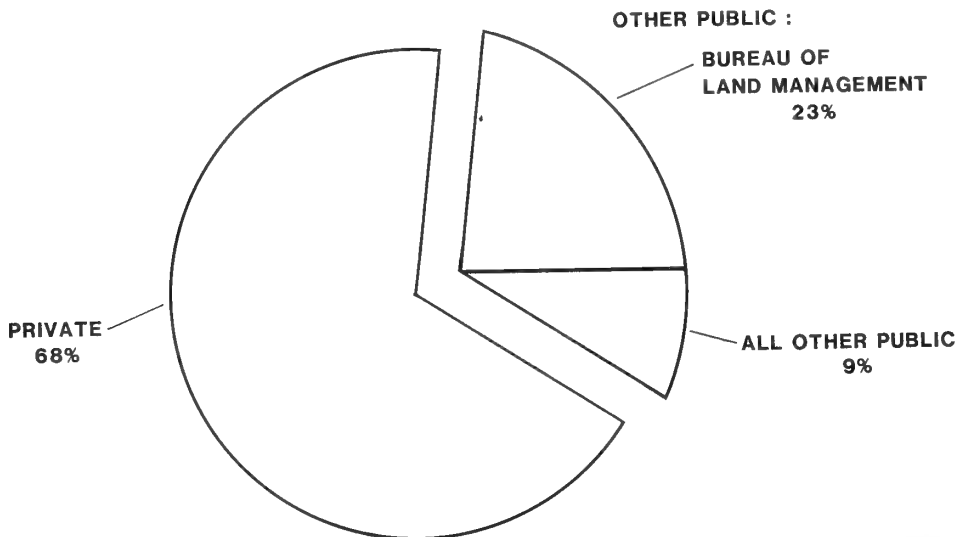
Distribution of growing—stock volume on timberland outside National Forests by species.

Components of Change—On an average annual basis, gross growth of growing stock is increasing the standing inventory by about 23 million cubic feet or 2.5 percent. When mortality is deducted, however, the annual rate of change in the absence of harvest is 22 million cubic feet.

Mortality of growing stock is low, amounting to a tenth of 1 percent of inventory. The specific cause of death for most trees was unknown. Disease, however, was the major agent where a cause of death could be determined.

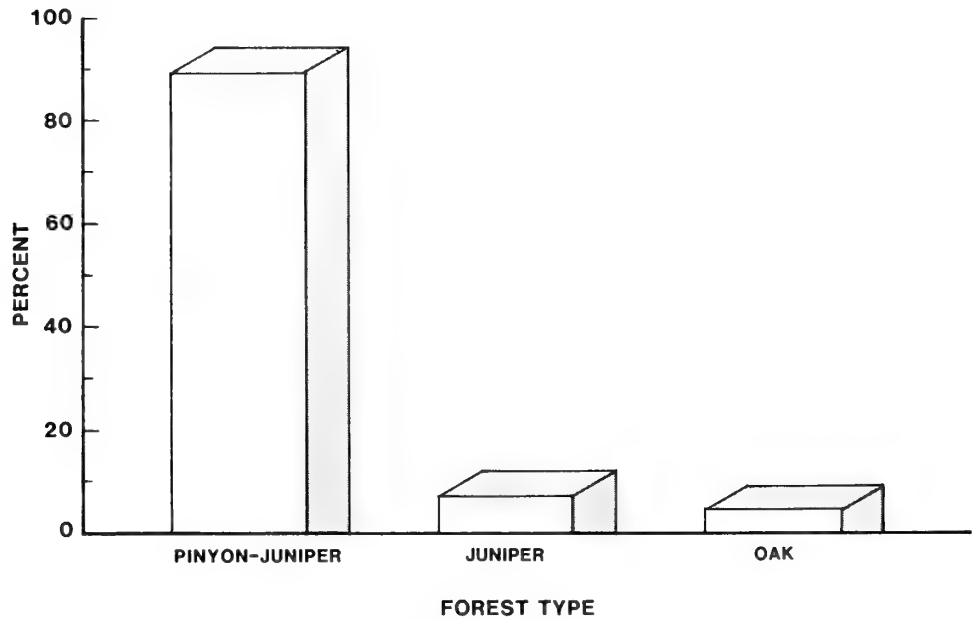
Woodland

Area—More than three-quarters of the forested area is in the woodland types. Over two-thirds is privately owned. The BLM administers almost a fourth of the woodland area.



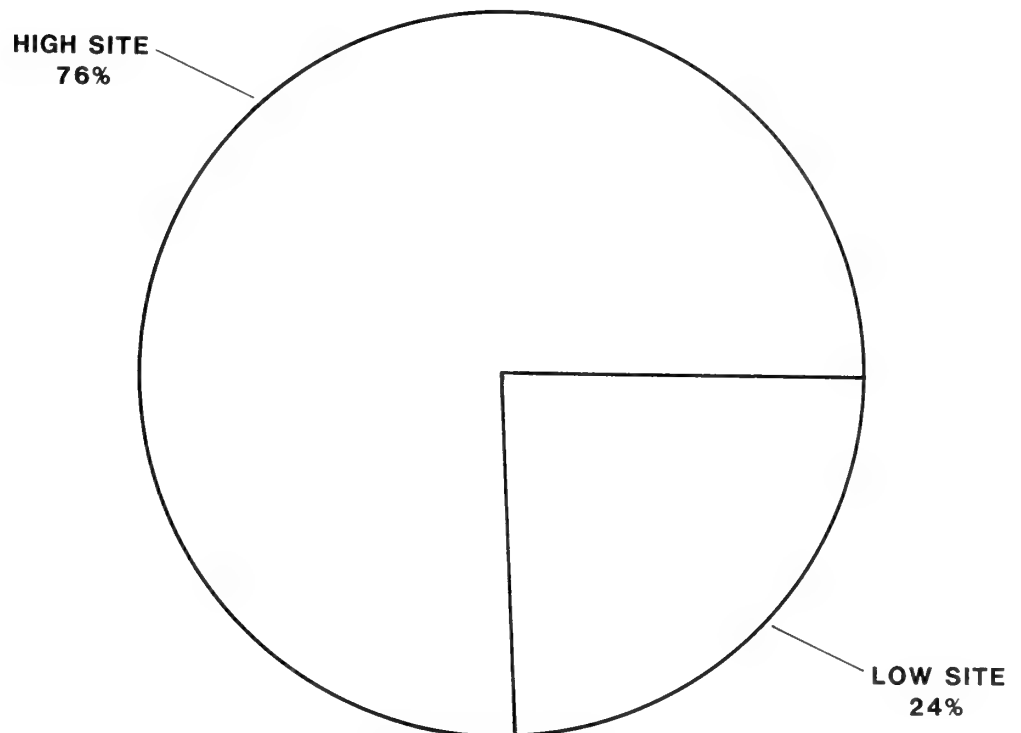
Distribution of woodland outside National Forests by ownership.

The woodland area is composed of three forest types, but the pinyon-juniper complex (P-J) is by far the most extensive. Although stands of pure juniper, either Rocky Mountain (*Juniperus scopulorum*), Utah (*J. osteosperma*), or oneseed (*J. monosperma*), exist they are rather insignificant in relation to P-J, as is the Gambel oak type.



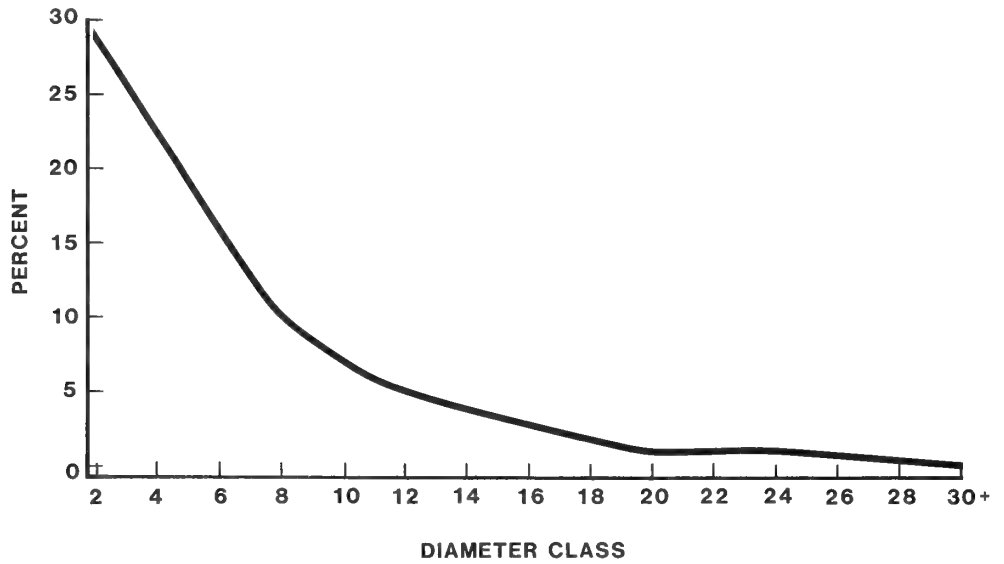
Distribution of woodland outside National Forests by forest type.

Slightly more than three-fourths of the woodland acres are capable of producing crops of wood such as fuelwood and fenceposts on a more or less sustained basis. The 743,000 acres classed as low site usually occupy the more harsh sites where vigorous growth and successful natural regeneration are difficult if not impossible to attain.



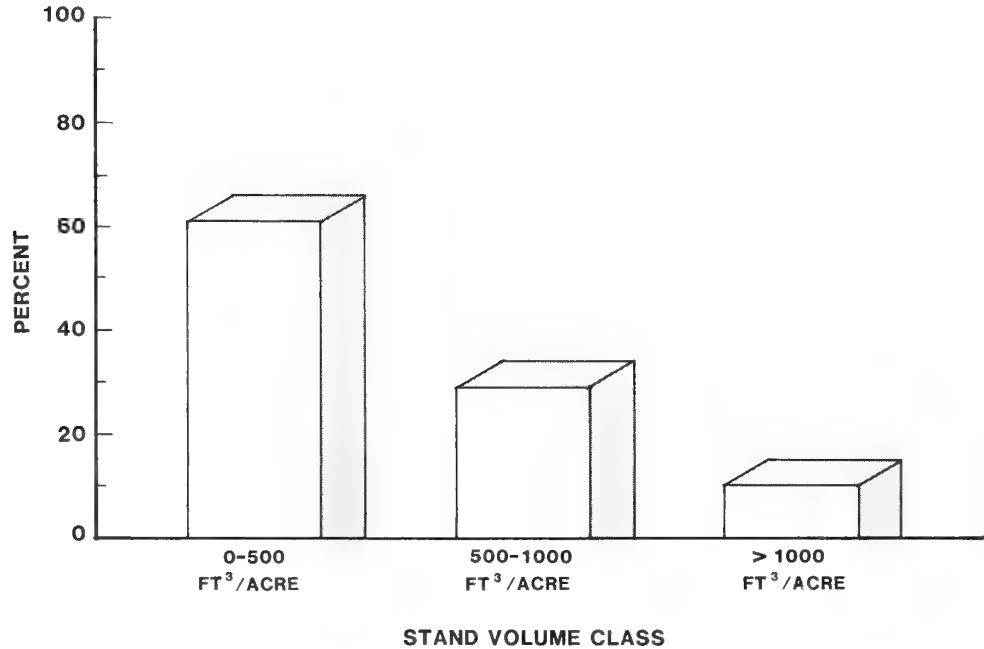
Distribution of woodland outside National Forests by productivity class.

Nearly half of the 703 million trees tallied on woodland were pinyon (*Pinus edulis*) and almost 30 percent were sapling size, that is, less than 3 inches diameter at root collar (d.r.c.).



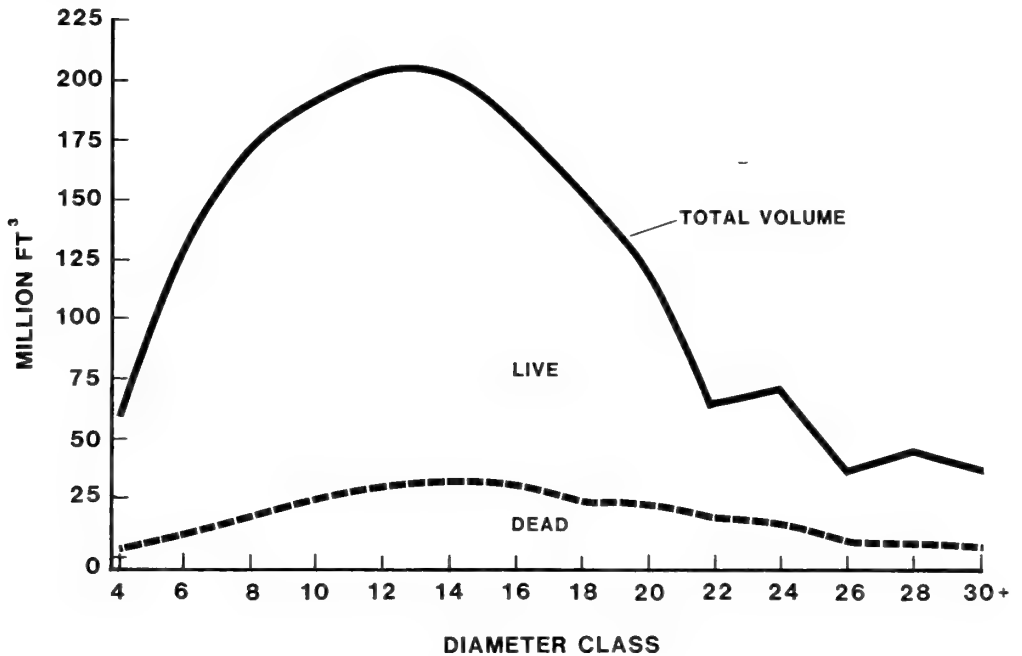
Distribution of trees on woodland outside National Forests by diameter root collar (d.r.c.) class.

Volume—Three-fifths of the woodland acres contain less than 500 cubic feet per acre, and just over 10 percent support 1,000 cubic feet or more. The average volume per acre is just over 450 cubic feet.



Distribution of woodland outside National Forests by stand volume class.

Volume on woodland acres amounted to 1.4 billion cubic feet, most of which is in P-J or oak (*Quercus gambelii*). A small amount, some 3 percent, is in the timber species of Douglas-fir, ponderosa pine, white fir, and cottonwood (*Populus fremontii*).



Distribution of cubic foot volume on woodland outside National Forests by d.r.c. class.

Because merchantability standards are nonexistent for woodland species, all of this material is potentially usable for fiber products such as fuelwood and fenceposts. An additional 254 million cubic feet of dead material was also tallied, most of which is contained in live trees.

Slightly more than 10 percent of all the pinyon tallied qualified as potential Christmas trees. Of these, some 2.9 million or 7 percent are classed as premium grade, 33 percent are standard, and the rest are utility grade. The bulk of these trees are in the 6- to 10-foot class, which is the most desirable for household use.

Of the juniper and oak trees tallied, 18 percent met minimum criteria for fenceposts. Slightly more than two-thirds of the qualifying segments were classed as line posts with the remainder meeting the criteria for the more valuable corner post. More than three-quarters of the fenceposts were juniper.

Components of Change—The woodland inventory is increasing at an annual rate of 1.5 percent. In total, 21 million cubic feet of wood was added to the standing volume in 1986. Consumption of products from woodlands will reduce this increment somewhat.

Overall, net annual growth per acre for woodland amounts to about 7 cubic feet. By type, the most productive is the oak averaging just over 20 cubic feet per acre in annual increment.

HOW THE INVENTORY WAS CONDUCTED

The inventory was designed to provide reliable statistics primarily at the State and sample area levels.

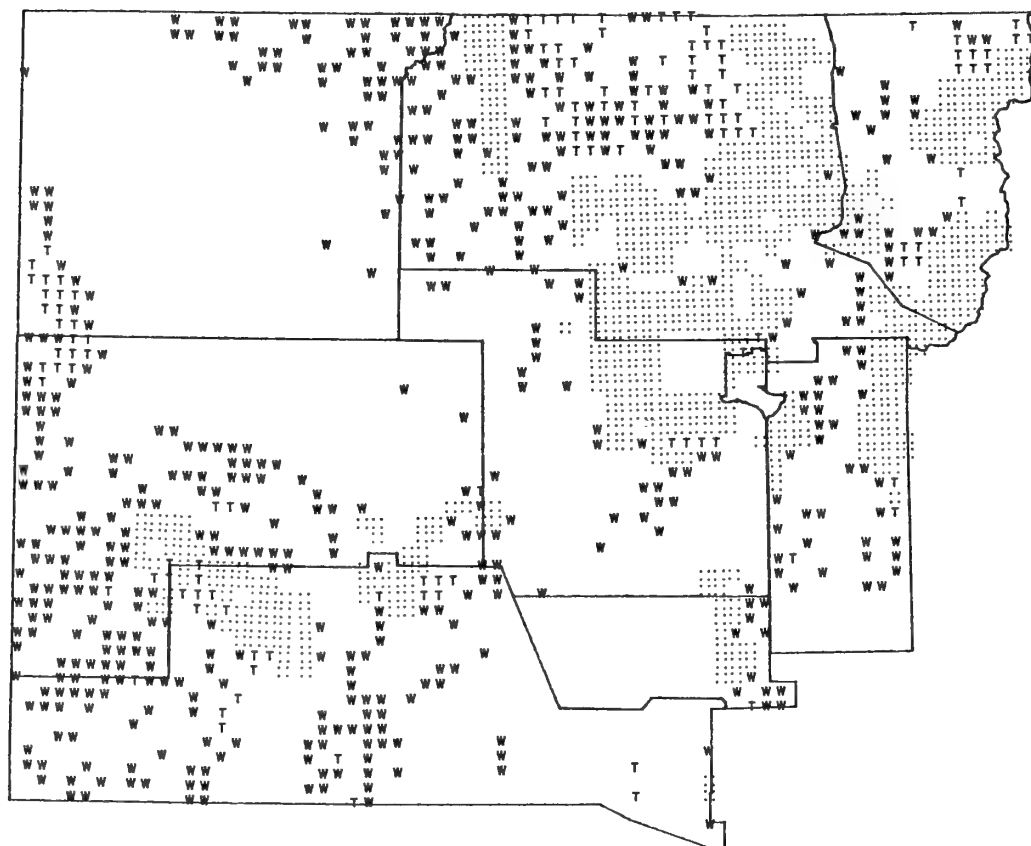
Prefield

Initial area estimates were based on the classification of 69,032 sample points systematically placed on the latest aerial photographs available. The sample points were summarized and grouped into strata for subsequent field sampling. The photo points, adjusted to meet known land areas, were used to compute area expansion factors for the sampling strata means.

Field

Land classification and estimates for timberland and woodland characteristics and volume were based on observations and measurements recorded at 2,657 field sample locations, of which 632 were forested.

1986 FOREST SURVEY OF NORTHWESTERN NEW MEXICO



T = TIMBERLAND W = WOODLAND :: = NATIONAL FOREST

Distribution of timberland and woodland field locations outside National Forests in northwestern New Mexico.

Sample trees for timberland were selected using a 5-point cluster. Trees less than 5 inches d.b.h. were measured on a 1/300-acre fixed radius plot. Trees 5 inches d.b.h. or larger were selected using a variable radius plot. A 20 basal area factor was used for ponderosa pine locations. Other timberland locations were measured using a 40 basal area factor. Sample trees for woodland were selected using a 1/10-acre or a 1/5-acre fixed radius plot for trees 3 inches d.r.c. and larger. Trees less than 3 inches d.r.c. were tallied on 1/300-acre subplots.

Compilation

All photo and field data were loaded onto tape and stored for computer editing, computation, and tabulation. Final estimates from these data were based on statistical summaries, a portion of which is included in this bulletin. Volume and defect were computed using equations developed by Edminster and others (1980, 1981), Kemp (1958), Chojnacky (1985), Meyers (1964), and Meyers and others (1972).

DATA RELIABILITY

Individual cells within tables should be used with caution. Some are based on very small sample sizes, which may result in high sampling errors. The standard error percentages shown in tables 2 and 3 were calculated at the 67 percent confidence level.

TERMINOLOGY

- Acceptable tree*—Growing-stock tree meeting specified standards of size and quality, but not qualifying as a desirable tree.
- Area condition class*—A classification of timberland reflecting the degree to which the site is being utilized by growing-stock trees and other conditions affecting current and prospective timber growth (see Stocking):
- Class 10—Areas fully stocked with desirable trees and not overstocked.
 - Class 20—Areas fully stocked with desirable trees, but overstocked with all live trees.
 - Class 30—Areas medium to fully stocked with desirable trees and with less than 30 percent of the area controlled by other trees and/or inhibiting vegetation or surface conditions that will prevent occupancy by desirable trees.
 - Class 40—Areas medium to fully stocked with desirable trees and with 30 percent or more of the area controlled by other trees, or conditions that ordinarily prevent occupancy by desirable trees, or both.
 - Class 50—Areas poorly stocked with desirable trees, but fully stocked with growing-stock trees.
 - Class 60—Areas poorly stocked with desirable trees, but with medium to full stocking of growing-stock trees.
 - Class 70—Areas nonstocked or poorly stocked with desirable trees, and poorly stocked with growing-stock trees.
 - Class 80—Low-risk old-growth stands.
 - Class 90—High-risk old-growth stands.
 - Nonstocked—Areas less than 10 percent stocked with growing-stock trees.
- Basal area*—The cross-sectional area of a tree expressed in square feet. For timber species the calculation is based on diameter at breast height (d.b.h.); for woodland species it is based on diameter at root collar (d.r.c.).
- Christmas tree grade*—Pinyon species are classified as Christmas trees using the following guidelines:
- Premium—Excellent conical form with no gaps in branches and a straight bole.
 - Standard—Good conical form with small gaps in branches and bole slightly malformed.
 - Utility—Conical in form with branches missing and bole bent or malformed.
 - Cull—Not meeting one of the above classifications.
- Cord*—A pile of stacked wood equivalent to 128 cubic feet of wood and air space having standard dimensions of 4 by 4 by 8 feet.
- Cull tree*—Live tree that is unmerchantable now or prospectively (see Rough tree and Rotten tree).
- Cull volume*—Portions of a tree's volume that are not usable for wood products because of rot, form, missing material, or other cubic-foot defect. Form and sound defects include severe sweep and crook, forks, extreme form reduction, large deformities, and dead material.
- Deferred forest land*—Forest lands within the National Forest System that are under study for possible inclusion in the Wilderness System.
- Desirable tree*—Growing-stock tree (1) having no serious defect in quality to limit present or prospective use for timber products, (2) of relatively high vigor, and (3) containing no pathogens that may result in death or serious deterioration within the next decade.
- Diameter at breast height (d.b.h.)*—Diameter of the stem measured at 4.5 feet above the ground.
- Diameter at root collar (d.r.c.)*—Diameter equivalent at the point nearest the ground line that represents the basal area of the tree stem or stems.
- Diameter classes*—Tree diameters, either d.b.h. or d.r.c., grouped into 2-inch classes labeled by the midpoint of the class.
- Farmer/rancher-owned land*—Land owned by a person who operates a farm or a ranch and who either does the work or directly supervises the work.
- Forest industry land*—Land owned by companies or individuals operating a primary wood-processing plant.

Forest land—Land at least 10 percent stocked by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width at least 120 feet wide to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 120 feet wide.

Forest tree—Woody plant having a well-developed stem or stems, usually more than 12 feet in height at maturity, with a generally well-defined crown.

Forest type—A classification of forest land based upon and named for the tree species presently forming a plurality of live-tree stocking.

Gross annual growth—The average annual increase in the net volume of trees during a specified period.

Growing-stock tree—Live sawtimber tree, poletimber tree, sapling, or seedlings of timber species meeting specified standards of quality and vigor; excludes cull trees.

Growing-stock volume—Net cubic-foot volume in live poletimber-size and sawtimber-size growing-stock trees from a 1-foot stump to a minimum 4-inch top (of central stem) outside bark or to the point where the central stem breaks into limbs.

Growth—See definition for Net annual growth.

Hardwood tree—Dicotyledonous tree, usually broad-leaved and deciduous.

High-risk old-growth stand—Timber stand over 100 years old in which the majority of the trees are not expected to survive more than 10 years.

Indian land—Indian land held in trust by the Federal Government.

Industrial wood—All commercial roundwood products except fuelwood.

Land area—The area of dry land and land temporarily or partially covered by water such as marshes, swamps, and river flood plains, streams, sloughs, estuaries, and canals less than 120 feet wide; and lakes, reservoirs, and ponds less than 1 acre in size.

Logging residue—The unused portion of growing-stock trees cut or killed by logging.

Low-risk old-growth stand—Timber stand over 100 years old in which the majority of the trees are expected to survive more than 10 years.

Miscellaneous Federal land—Land administered by Federal agencies other than the U.S. Department of Agriculture, Forest Service or U.S. Department of the Interior, Bureau of Land Management.

Mortality—The net volume of growing-stock trees that have died from natural causes during a specified period.

National Forest land—Public land administered by the U.S. Department of Agriculture, Forest Service.

National Resource land—Public land administered by the U.S. Department of the Interior, Bureau of Land Management.

Net annual growth—Gross annual growth minus average annual mortality.

Net dead volume—Total net volume of dead trees plus the net volume of dead material in live trees.

Net volume in board feet—The gross board-foot volume in the sawlog portion of growing-stock trees, less deductions for cull volume.

Net volume in cubic feet—Gross cubic-foot volume in the merchantable portion of trees less deductions for cull volume. For timber species, volume is computed for the merchantable stem from a 1-foot stump to a minimum 4-inch top diameter outside bark (d.o.b.), or to the point where the central stem breaks into limbs. For woodland species, volume is computed outside bark (o.b.) for all woody material above d.r.c. that is larger than 1.5 inches d.o.b.

Nonforest land—Land that does not currently qualify as forest land.

Nonindustrial private—All private ownerships except forest industry.

Nonstocked area—Forest land less than 10 percent stocked with live trees.

Old-growth stand—Stand of timber species over 100 years old.

Other private land—Privately owned land other than forest industry or farmer-owned.

Other public land—Public land administered by agencies other than the U.S. Department of Agriculture, Forest Service.

Other removal—The net volume of growing-stock trees removed from the inventory by cultural operations such as timber-stand improvement, by land clearing, and by changes in land use, such as a shift to wilderness.

Poletimber stand—Stand at least 10 percent stocked with growing-stock trees, in which half or more of the stocking is sawtimber or poletimber trees or both, with poletimber stocking exceeding that of sawtimber (see definition for Stocking).

Poletimber tree—Live tree of timber species at least 5 inches d.b.h. but smaller than sawtimber size.

Post—Juniper and oak species are evaluated for post potential using the following criteria:
 Line post—A 7-foot minimum length with 5 to 7 inches diameter at the butt, 2.5-inch minimum small end diameter, and reasonably straight and solid.
 Corner post—An 8-foot minimum length with 7 to 9 inches diameter at the butt, 2.5-inch minimum small end diameter, and reasonably straight and solid.

Potential growth—The average net annual cubic-foot growth per acre at culmination of mean annual growth attainable in fully stocked natural stands.

Primary wood-processing plant—Plant using roundwood products such as sawlogs, pulpwood bolts, veneer logs, and so forth.

Productivity class—A classification of forest land that reflects biological potential. For timberland the potential net annual growth at culmination of mean annual increment in fully stocked natural stands is the index used. For woodland, characteristics that affect the land's ability to produce wood, such as soil depth and aspect, are used. Furthermore, woodland is classified as high site where sustained wood production is likely, or low site where the continuous production of wood is unlikely.

Removal—The net volume of growing-stock trees removed from the inventory by harvesting, cultural operations, land clearings, or changes in land use.

Reserved forest land—Forest land withdrawn from tree utilization through statute or administrative designation.

Residue:
 Coarse residue—Plant residue suitable for chipping, such as slabs, edgings, and ends.
 Fine residue—Plant residue not suitable for chipping, such as sawdust, shavings, and veneer clippings.
 Plant residue—Wood material from primary manufacturing plants that is not used for any product.

Rotten tree—A live poletimber or sawtimber tree with more than 67 percent of its total volume cull (cubic-foot), and with more than half of the cull volume attributable to rotten or missing material.

Rough tree—A live poletimber or sawtimber tree with more than 67 percent of its total volume cull (cubic-foot), and with less than half of the cull volume attributable to rotten or missing material.

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

Salvable dead tree—Standing or down dead tree that is currently merchantable by regional standards.

Sapling—Live tree of timber species 1 to 4.9 inches d.b.h., or woodland species 1 to 2.9 inches d.r.c.

Sapling and seedling stand—Timberland stand at least 10 percent stocked on which more than half of the stocking is saplings or seedlings or both.

Sawlog portion—That part of the bole of sawtimber trees between a 1-foot stump and the sawlog top.

Sawlog top—The point on the bole of sawtimber trees above which a sawlog cannot be produced. The minimum sawlog top is 7 inches d.o.b. for softwoods and 9 inches d.o.b. for hardwoods.

Sawtimber stand—Stand at least 10 percent stocked with growing-stock trees, with half or more of total stocking in sawtimber or poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

- Sawtimber tree*—Live tree of timber species meeting regional size and defect specifications. Softwood trees must be at least 9 inches d.b.h. and hardwood trees 11 inches d.b.h.
- Sawtimber volume*—Net volume in board feet of the sawlog portion of live sawtimber trees.
- Seedling*—Established live tree of timber species less than 1 inch d.b.h. or woodland species less than 1 inch d.r.c.
- Softwood tree*—Monocotyledonous tree, usually evergreen, having needle or scalelike leaves.
- Standard error*—An expression of the degree of confidence that can be placed on an estimated total or average obtained by statistical sampling methods. Standard errors do not include technique errors that could occur in photo classification of areas, field measurements, or compilation of data.
- Stand-size class*—A classification of forest land based on the predominant size of trees present (see Sawtimber stand, Poletimber stand, and Sapling and seedling stand).
- State, county, and municipal land*—Land administered by States, counties, or local public agencies, or lands leased by these governmental units for more than 50 years.
- Stocking*—An expression of the extent to which growing space is effectively utilized by present or potential growing-stock trees of timber species.
- Timberland*—Forest land where timber species make up at least 10 percent stocking.
- Timber species*—Tree species traditionally used for industrial wood products. In the Rocky Mountain States, these include aspen and cottonwood hardwood species and all softwood species except pinyon and juniper.
- Timber stand improvement*—Treatments such as thinning, pruning, release cutting, girdling, weeding, or poisoning of unwanted trees aimed at improving growing conditions for the remaining trees.
- Upper-stem portion*—That part of the main stem or fork of sawtimber trees above the sawlog top to a minimum top diameter of 4 inches outside bark or to the point where the main stem or fork breaks into limbs.
- Water*—Streams, sloughs, estuaries, and canals more than 120 feet wide, and lakes, reservoirs, and ponds more than 1 acre in size at mean high water level.
- Wilderness*—An area of undeveloped land currently included in the Wilderness System, managed so as to preserve its natural conditions and retain its primeval character and influence.
- Woodland*—Forest land where timber species make up less than 10 percent stocking.
- Woodland species*—Tree species not usually converted into industrial wood products. Common uses are fuelwood, fenceposts, and Christmas trees.

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FOREST SURVEY TABLES

Table 1--Total land and water area by ownership class in northwestern New Mexico, 1987

Ownership class	Area
	- - Acres - -
Land:	
Public:	
National Forest	3,199,399
Other public:	
Bureau of Land Management	2,914,086
National Parks ¹	57,052
Miscellaneous Federal	82,966
State	1,093,281
County and municipal	<u>5,671</u>
Total other public	<u>4,153,056</u>
Total public	<u><u>7,352,455</u></u>
Private:	
Indian	7,381,580
Other private	<u>5,463,727</u>
Total private	<u>12,845,307</u>
Total land area	<u><u>20,197,762</u></u>
Census water	<u>30,153</u>
Total land and water ²	<u><u>20,227,915</u></u>

¹Not included with miscellaneous Federal, a component of other public, for purpose of clarity. These lands are reserved and are not included in the remainder of this report.

²U.S. Bureau of the Census, land and water area of the United States, 1980.

Table 2--Area of forest land outside National Forests with percent standard error in northwestern New Mexico, 1987

Item	Softwoods		Hardwoods		All types	
	Acres	Percent standard error	Acres	Percent standard error	Acres	Percent standard error
Timberland	846,159	±6.2	71,638	±33.9	917,797	±5.4
Woodland	3,036,490	±3.0	116,207	±24.0	3,152,697	±3.0
Reserved forest land: ¹						
Timberland	119,969		5,904		125,873	
Woodland	56,204		499		56,703	
Total forest land ²	4,058,822		194,248		4,253,070	

¹Reserved lands areas are estimated from aerial photos without field verification; therefore, standard errors are not calculated.

²On this and all following tables, totals may vary due to rounding.

Table 3--Net volume, net annual growth, and annual mortality of growing stock and sawtimber on timberland outside National Forests with percent standard error in northwestern New Mexico

Item	Softwoods		Hardwoods		All species	
	Volume	Percent standard error	Volume	Percent standard error	Volume	Percent standard error
Net volume, 1987:						
Growing stock (M cubic feet)	827,498	±10.8	108,696	±24.7	936,194	±10.3
Sawtimber ¹ (M board feet)	3,390,286	±10.9	254,043	±48.1	3,644,329	±10.0
Sawtimber ² (M board feet)	2,834,586	±10.8	208,319	±48.3	3,042,905	±10.9
Net annual growth, 1986:						
Growing stock (M cubic feet)	19,208	±11.5	4,279	±33.4	23,487	±11.4
Sawtimber ¹ (M board feet)	97,143	±14.9	3,896	±42.2	101,039	±14.4
Sawtimber ² (M board feet)	81,046	±14.7	3,428	±42.2	84,474	±14.2
Annual mortality, 1986:						
Growing stock (M cubic feet)	1,277	±42.5	--	--	1,277	±42.5
Sawtimber ¹ (M board feet)	4,367	±54.3	--	--	4,367	±54.3
Sawtimber ² (M board feet)	3,505	±54.9	--	--	3,505	±54.9

¹International ¼-inch rule.

²Scribner rule.

Table 4--Total land area outside National Forests by major land class and ownership class in northwestern New Mexico, 1987

Land class	Ownership class		
	Other public	Private	Total
	- - - - - Acres - - - - -		
Timberland:			
Reserved	52,651	73,222	125,873
Nonreserved	44,664	873,133	917,797
Total	97,315	946,355	1,043,670
Woodland:			
Reserved	52,574	4,129	56,703
Nonreserved	1,000,488	2,152,209	3,152,697
Total	1,053,062	2,156,338	3,209,400
Total forest land:			
Reserved	105,225	77,351	182,576
Nonreserved	1,045,152	3,025,342	4,070,494
Total	1,150,377	3,102,693	4,253,070
Nonforest land	3,002,679	9,742,614	12,745,293
Total land area	4,153,056	12,845,307	16,998,363

Timberland Tables

Table 5--Area of timberland outside National Forests by forest type, stand-size class, and productivity class in northwestern New Mexico, 1987

Forest type and stand-size class	Productivity class				Total acres
	85-119	50-84	20-49	0-19	
----- Acres -----					
Douglas-fir:					
Sawtimber	--	32,797	52,271	--	85,068
Poletimber	--	19,191	--	--	19,191
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	5,262	--	5,262
Total	--	51,988	57,533	--	109,521
Ponderosa pine:					
Sawtimber	--	39,779	422,586	--	462,365
Poletimber	--	--	51,383	--	51,383
Sapling and seedling	--	--	12,359	--	12,359
Nonstocked	--	--	11,252	--	11,252
Total	--	39,779	497,580	--	537,359
Spruce-subalpine fir:					
Sawtimber	--	34,765	28,787	--	63,552
Poletimber	--	19,191	21,552	--	40,743
Sapling and seedling	--	--	--	--	--
Nonstocked	--	9,596	--	--	9,596
Total	--	63,552	50,339	--	113,891
White fir:					
Sawtimber	--	41,398	14,857	--	56,255
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	5,755	--	--	5,755
Total	--	47,153	14,857	--	62,010
Spruce:					
Sawtimber	--	9,595	--	--	9,595
Poletimber	9,596	4,186	--	--	13,782
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	9,596	13,781	--	--	23,377

(con.)

Table 5. (con.)

Forest type and stand-size class	Productivity class				Total acres
	85-119	50-84	20-49	0-19	
----- Acres -----					
Aspen:					
Sawtimber	9,596	9,595	--	--	19,191
Poletimber	--	14,066	19,191	--	33,257
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	9,596	23,661	19,191	--	52,448
Cottonwood:					
Sawtimber	--	9,595	--	--	9,595
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	9,596	--	--	9,596
Total	--	19,191	--	--	19,191
All types:					
Sawtimber	9,596	177,524	518,501	--	705,621
Poletimber	9,596	56,634	92,126	--	158,356
Sapling and seedling	--	--	12,359	--	12,359
Nonstocked	--	24,947	16,514	--	41,461
Total	19,192	259,105	639,500	--	917,797

Table 6--Area of other publicly owned timberland by forest type, stand-size class, and productivity class in northwestern New Mexico, 1987

Forest type and stand-size class	Productivity class				Total acres
	85-119	50-84	20-49	0-19	
- - - - - Acres - - - - -					
Douglas-fir:					
Sawtimber	--	5,602	--	--	5,602
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	5,602	--	--	5,602
Ponderosa pine:					
Sawtimber	--	--	26,505	--	26,505
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	--	26,505	--	26,505
Spruce-subalpine fir:					
Sawtimber	--	--	--	--	--
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	--	--	--	--
White fir:					
Sawtimber	--	8,371	--	--	8,371
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	8,371	--	--	8,371
Spruce:					
Sawtimber	--	--	--	--	--
Poletimber	--	4,186	--	--	4,186
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	4,186	--	--	4,186

(con.)

Table 6. (con.)

Forest type and stand-size class	Productivity class				Total acres
	85-119	50-84	20-49	0-19	
----- Acres -----					
Aspen:					
Sawtimber	--	--	--	--	--
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	--	--	--	--
Cottonwood:					
Sawtimber	--	--	--	--	--
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	--	--	--	--
All types:					
Sawtimber	--	13,973	26,505	--	40,478
Poletimber	--	4,186	--	--	4,186
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	18,159	26,505	--	44,664

Table 7--Area of privately owned timberland by forest type, stand-size class, and productivity class in northwestern New Mexico, 1987

Forest type and stand-size class	Productivity class				Total acres
	85-119	50-84	20-49	0-19	
----- Acres -----					
Douglas-fir:					
Sawtimber	--	27,195	52,271	--	79,466
Poletimber	--	19,191	--	--	19,191
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	5,262	--	5,262
Total	--	46,386	57,533	--	103,919
Ponderosa pine:					
Sawtimber	--	39,779	396,081	--	435,860
Poletimber	--	--	51,383	--	51,383
Sapling and seedling	--	--	12,359	--	12,359
Nonstocked	--	--	11,252	--	11,252
Total	--	39,779	471,075	--	510,854
Spruce-subalpine fir:					
Sawtimber	--	34,765	28,787	--	63,552
Poletimber	--	19,191	21,552	--	40,743
Sapling and seedling	--	--	--	--	--
Nonstocked	--	9,596	--	--	9,596
Total	--	63,552	50,339	--	113,891
White fir:					
Sawtimber	--	33,027	14,857	--	47,884
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	5,755	--	--	5,755
Total	--	38,782	14,857	--	53,639
Spruce:					
Sawtimber	--	9,595	--	--	9,595
Poletimber	9,596	--	--	--	9,596
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	9,596	9,595	--	--	19,191

(con.)

Table 7. (con.)

Forest type and stand-size class	Productivity class				Total acres
	85-119	50-84	20-49	0-19	
- - - - - Acres - - - - -					
Aspen:					
Sawtimber	9,596	9,595	--	--	19,191
Poletimber	--	14,066	19,191	--	33,257
Sapling and seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	9,596	23,661	19,191	--	52,448
Cottonwood:					
Sawtimber	--	9,595	--	--	9,595
Poletimber	--	--	--	--	--
Sapling and seedling	--	--	--	--	--
Nonstocked	--	9,596	--	--	9,596
Total	--	19,191	--	--	19,191
All types:					
Sawtimber	9,596	163,551	491,996	--	665,143
Poletimber	9,596	52,448	92,126	--	154,170
Sapling and seedling	--	--	12,359	--	12,359
Nonstocked	--	24,947	16,514	--	41,461
Total	19,192	240,946	612,995	--	873,133

Table 8--Area of timberland outside National Forests by stand volume and ownership class in northwestern New Mexico, 1987

Stand volume per acre ¹	Ownership class			Total
	Other public	Private	Acres	
Less than 1,500 board feet	15,391	235,992		251,383
1,500 to 4,999 board feet	15,299	396,609		411,908
5,000 to 9,999 board feet	13,974	157,882		171,856
10,000 board feet or more	--	82,650		82,650
All classes	44,664	873,133		917,797

¹International 4-inch rule.

Table 9--Area of timberland outside National Forests by forest type and area condition class in northwestern New Mexico, 1987

Forest type	Area condition class										
	10	20	30	40	50	60	70	80	90	Nonstocked	All classes
Douglas-fir	--	--	--	--	15,198	34,765	33,211	5,755	15,331	5,262	109,522
Ponderosa pine	--	--	--	--	118,418	142,592	106,175	--	158,922	11,252	537,359
Spruce-subalpine fir	--	5,976	--	9,596	21,553	19,191	--	--	47,978	9,596	113,890
White fir	--	--	--	8,081	4,186	9,940	14,858	--	19,191	5,755	62,011
Aspen	--	--	--	13,781	--	--	9,595	--	--	--	23,376
Cottonwood	--	--	--	--	4,470	38,382	--	--	9,596	--	52,448
All types	--	5,976	--	31,458	163,825	244,870	173,435	5,755	251,018	41,460	917,797

Table 10--Number of growing-stock trees on timberland outside National Forests by species and diameter class in northwestern New Mexico, 1987

Species	Diameter class (inches at breast height)																	All classes
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	10.9-12.9	11.0-12.9	13.0-14.9	14.9-16.9	15.0-16.9	17.0-18.9	18.9-20.9	20.9-22.9	21.0-22.9	23.0-24.9	24.9-26.9	25.0-26.9	
Douglas-fir	8,755	6,052	6,114	3,852	2,507	1,551	1,077	692	326	271	108	54	113	--	--	4	31,476	
Ponderosa pine	20,614	22,965	11,044	7,276	4,734	2,730	2,237	1,706	1,163	992	584	366	240	130	113	76,894		
Whitebark pine	--	--	--	--	--	--	67	--	--	35	58	--	--	--	--	160		
Limber pine	--	--	--	--	--	64	--	--	--	--	--	--	--	--	--	64		
Subalpine fir	22,838	11,213	3,275	4,185	877	1,535	270	167	--	107	30	--	--	--	--	44,497		
White fir	8,373	5,380	2,854	1,926	2,116	1,136	698	229	413	138	44	10	--	44	23	23,384		
Engelmann spruce	16,351	9,637	4,506	3,548	1,905	1,871	1,033	173	346	37	94	49	--	18	21	39,589		
Total softwoods	76,931	55,247	27,793	20,787	12,139	8,887	5,382	2,967	2,248	1,580	918	479	353	192	161	216,064		
Aspen	25,098	16,633	11,877	3,191	1,674	136	657	314	179	101	--	--	--	--	--	59,860		
Cottonwood	--	--	--	--	--	--	--	--	--	75	--	--	--	17	--	92		
Total hardwoods	25,098	16,633	11,877	3,191	1,674	136	657	314	179	176	--	--	--	17	--	59,952		
All species	102,029	71,880	39,670	23,978	13,813	9,023	6,039	3,281	2,427	1,756	918	479	353	209	161	276,016		

Table 11--Number of cull and salvable dead trees on timberland outside National Forests by ownership class, and softwoods and hardwoods in northwestern New Mexico, 1987

Ownership class and species group	Cull trees			Salvable dead trees	Total
	Rough	Rotten	Total		
----- Thousand trees -----					
Other public:					
Softwoods	--	26	26	371	397
Hardwoods	--	--	--	644	644
Total	--	26	26	1,015	1,041
Private:					
Softwoods	706	122	828	6,435	7,263
Hardwoods	355	1,831	2,186	5,163	7,349
Total	1,061	1,953	3,014	11,598	14,612
Total:					
Softwoods	706	148	854	6,806	7,660
Hardwoods	355	1,831	2,186	5,807	7,993
Total	1,061	1,979	3,040	12,613	15,653

Table 12--Net volume of growing stock on timberland outside National Forests by ownership class, forest type, and stand-size class in northwestern New Mexico, 1987

Ownership class	Forest type	Stand-size class				All classes
		Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	
----- Thousand cubic feet -----						
Other public:	Douglas-fir	11,362	--	--	--	11,362
	Ponderosa pine	8,916	--	--	--	8,916
	Spruce-subalpine fir	--	--	--	--	--
	White fir	16,884	--	--	--	16,884
	Spruce	--	11,290	--	--	11,290
	Aspen	--	--	--	--	--
	Cottonwood	--	--	--	--	--
	All types	37,162	11,290	--	--	48,452
Private:	Douglas-fir	90,334	21,357	--	757	112,448
	Ponderosa pine	337,527	16,995	251	1,558	356,331
	Spruce-subalpine fir	107,555	96,928	--	2,021	206,504
	White fir	112,806	--	--	1,345	114,151
	Spruce	24,828	7,248	--	--	32,076
	Aspen	41,541	20,375	--	--	61,916
	Cottonwood	4,316	--	--	--	4,316
	All types	718,907	162,903	251	5,681	887,742
Total:	Douglas-fir	101,696	21,357	--	757	123,810
	Ponderosa pine	346,443	16,995	251	1,558	365,247
	Spruce-subalpine fir	107,555	96,928	--	2,021	206,504
	White fir	129,690	--	--	1,345	131,035
	Spruce	24,828	18,538	--	--	43,366
	Aspen	41,541	20,375	--	--	61,916
	Cottonwood	4,316	--	--	--	4,316
	All types	756,069	174,193	251	5,681	936,194

Table 13--Net volume of sawtimber (International ¼-inch rule) on timberland outside National Forests by ownership class, forest type, and stand-size class in northwestern New Mexico, 1987

Ownership class	Forest type	Stand-size class				All classes
		Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	
- - - - - Thousand board feet, International ¼-inch rule - - - - -						
Other public:	Douglas-fir	36,675	--	--	--	36,675
	Ponderosa pine	36,248	--	--	--	36,248
	Spruce-subalpine fir	--	--	--	--	--
	White fir	52,963	--	--	--	52,963
	Spruce	--	27,139	--	--	27,139
	Aspen	--	--	--	--	--
	Cottonwood	--	--	--	--	--
	All types	125,886	27,139	--	--	153,025
Private:	Douglas-fir	334,434	22,146	--	3,657	360,237
	Ponderosa pine	1,579,814	38,567	977	8,793	1,628,151
	Spruce-subalpine fir	421,840	230,100	--	5,620	657,560
	White fir	480,125	--	--	6,161	486,286
	Spruce	114,305	21,973	--	--	136,278
	Aspen	177,567	24,937	--	--	202,504
	Cottonwood	20,288	--	--	--	20,288
	All types	3,128,373	337,723	977	24,231	3,491,304
Total:	Douglas-fir	371,109	22,146	--	3,657	396,912
	Ponderosa pine	1,616,062	38,567	977	8,793	1,664,399
	Spruce-subalpine fir	421,840	230,100	--	5,620	657,560
	White fir	533,088	--	--	6,161	539,249
	Spruce	114,305	49,112	--	--	163,417
	Aspen	177,567	24,937	--	--	202,504
	Cottonwood	20,288	--	--	--	20,288
	All types	3,254,259	364,862	977	24,231	3,644,329

Table 14--Net volume of sawtimber (Scribner rule) on timberland outside National Forests by ownership class, forest type, and stand-size class in northwestern New Mexico, 1987

Ownership class	Forest type	Stand-size class				All classes
		Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	
- - - - - Thousand board feet, Scribner rule - - - - -						
Other public:	Douglas-fir	28,013	--	--	--	28,013
	Ponderosa pine	31,218	--	--	--	31,218
	Spruce-subalpine fir	--	--	--	--	--
	White fir	43,978	--	--	--	43,978
	Spruce	--	21,741	--	--	21,741
	Aspen	--	--	--	--	--
	Cottonwood	--	--	--	--	--
	All types	103,209	21,741	--	--	124,950
Private:	Douglas-fir	263,753	17,381	--	2,813	283,947
	Ponderosa pine	1,366,754	33,155	765	7,742	1,408,416
	Spruce-subalpine fir	335,239	181,867	--	4,220	521,326
	White fir	399,847	--	--	5,240	405,087
	Spruce	94,583	18,629	--	--	113,212
	Aspen	147,464	20,446	--	--	167,910
	Cottonwood	18,057	--	--	--	18,057
	All types	2,625,697	271,478	765	20,015	2,917,955
Total:	Douglas-fir	291,766	17,381	--	2,813	311,960
	Ponderosa pine	1,397,972	33,155	765	7,742	1,439,634
	Spruce-subalpine fir	335,239	181,867	--	4,220	521,326
	White fir	443,825	--	--	5,240	449,065
	Spruce	94,583	40,370	--	--	134,953
	Aspen	147,464	20,446	--	--	167,910
	Cottonwood	18,057	--	--	--	18,057
	All types	2,728,906	293,219	765	20,015	3,042,905

Table 15--Net volume of growing stock on timberland outside National Forests by species and ownership class in northwestern New Mexico, 1987

Species	Ownership class		
	Other public	Private	Total
- - - - - Thousand cubic feet - - - - -			
Douglas-fir	15,685	130,512	146,197
Ponderosa pine	9,004	351,996	361,000
Whitebark pine	--	4,845	4,845
Limber pine	--	820	820
Subalpine fir	--	80,380	80,380
White fir	12,044	84,473	96,517
Engelmann spruce	7,009	130,731	137,740
Total softwoods	43,742	783,757	827,499
Aspen	4,710	99,669	104,379
Cottonwood	--	4,316	4,316
Total hardwoods	4,710	103,985	108,695
All species	48,452	887,742	936,194

Table 16--Net volume of sawtimber (International 4-inch rule) on timberland outside National Forests by species and ownership class in northwestern New Mexico, 1987

Species	Ownership class		
	Other public	Private	Total
- Thousand board feet, International 4-inch rule -			
Douglas-fir	51,704	534,611	586,315
Ponderosa pine	35,630	1,628,670	1,664,300
Whitebark pine	--	25,101	25,101
Limber pine	--	3,322	3,322
Subalpine fir	--	236,966	236,966
White fir	46,412	299,570	345,982
Engelmann spruce	19,279	509,021	528,300
Total softwoods	153,025	3,237,261	3,390,286
Aspen	--	233,755	233,755
Cottonwood	--	20,288	20,288
Total hardwoods	--	254,043	254,043
All species	153,025	3,491,304	3,644,329

Table 17--Net volume of sawtimber (Scribner rule) on timberland outside National Forests by species and ownership class in northwestern New Mexico, 1987

Species	Ownership class		
	Other public	Private	Total
- - - Thousand board feet, Scribner rule - - -			
Douglas-fir	39,804	417,504	457,308
Ponderosa pine	30,788	1,417,075	1,447,863
Whitebark pine	--	22,055	22,055
Limber pine	--	2,653	2,653
Subalpine fir	--	186,394	186,394
White fir	39,159	256,012	295,171
Engelmann spruce	15,199	407,943	423,142
Total softwoods	124,950	2,709,636	2,834,586
Aspen	--	190,262	190,262
Cottonwood	--	18,057	18,057
Total hardwoods	--	208,319	208,319
All species	124,950	2,917,955	3,042,905

Table 18--Net volume of growing stock on timberland outside National Forests by species and diameter class in northwestern New Mexico, 1987

Species	Diameter class (inches at breast height)												27.0- 28.9	29.0+ classes	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- 22.9	23.0- 24.9	25.0- 26.9	27.0- 28.9			
	Thousand cubic feet														
Douglas-fir	8,379	15,829	19,968	18,161	19,667	20,598	11,685	12,228	6,618	3,167	9,528	--	--	369	146,197
Ponderosa pine	15,537	26,274	30,476	29,226	36,592	39,896	35,619	41,966	31,398	24,775	20,246	13,183	15,812	15,812	361,000
Whitebark pine	--	--	--	--	1,154	--	--	1,009	2,682	--	--	--	--	--	4,845
Limber pine	--	--	--	820	--	--	--	--	--	--	--	--	--	--	820
Subalpine pine	7,544	23,353	8,483	23,189	5,690	6,040	4,925	1,156	--	--	--	--	--	--	80,380
White fir	4,837	8,057	14,978	16,440	13,449	5,426	15,639	6,499	2,214	862	--	3,860	4,256	4,256	96,517
Engelmann spruce	9,521	19,883	18,245	27,494	24,794	5,844	14,888	1,803	5,619	4,325	--	2,001	3,322	3,322	137,739
Total softwoods	45,818	93,396	92,150	115,330	101,346	77,804	77,831	68,430	49,687	33,129	29,774	19,044	23,759	23,759	827,498
Aspen	24,517	20,140	17,554	2,748	15,250	11,286	7,256	5,628	--	--	--	--	--	--	104,379
Cottonwood	--	--	--	--	--	--	--	2,919	--	--	--	--	1,398	--	4,317
Total hardwoods	24,517	20,140	17,554	2,748	15,250	11,286	7,256	8,547	--	--	--	--	1,398	--	108,696
All species	70,335	113,536	109,704	118,078	116,596	89,090	85,087	76,977	49,687	33,129	29,774	20,442	23,759	23,759	936,194

Table 19--Net volume of sawtimber (International 1/4-inch rule) on timberland outside National Forests by species and diameter class in northwestern New Mexico, 1987

Species	Diameter class (inches at breast height)												27.0- 28.9	29.0+ classes	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- 22.9	23.0- 24.9	25.0- 26.9	27.0- 28.9	29.0- 28.9				
	Thousand board feet, International 1/4-inch rule														
Douglas-fir	66,142	75,484	93,934	106,778	63,220	67,859	37,488	18,139	55,121	--	2,151	586,316			
Ponderosa pine	99,503	127,033	179,968	209,831	196,263	237,160	180,399	143,726	118,392	77,594	94,431	1,664,300			
Whitebark pine	--	--	5,552	--	--	5,225	14,324	--	--	--	--	25,101			
Limber pine	--	3,322	--	--	--	--	--	--	--	--	--	3,322			
Subalpine pine	32,354	113,190	29,057	31,133	--	25,272	5,960	--	--	--	--	236,966			
White fir	46,261	72,919	61,519	24,735	68,552	27,386	9,036	3,394	--	15,139	17,041	345,982			
Engelmann spruce	69,862	134,169	127,629	30,343	77,084	9,312	29,020	22,503	--	10,600	17,777	528,299			
Total softwoods	314,122	526,117	497,659	402,820	405,119	372,214	276,227	187,762	173,513	103,333	131,400	3,390,286			
Aspen	XXXXX	14,901	84,733	63,391	40,340	30,390	--	--	--	--	--	233,755			
Cottonwood	XXXXX	--	--	--	--	13,890	--	--	--	6,398	--	20,288			
Total hardwoods	XXXXX	14,901	84,733	63,391	40,340	44,280	--	--	6,398	--	--	254,043			
All species	314,122	541,018	582,392	466,211	445,459	416,494	276,227	187,762	173,513	109,731	131,400	3,644,329			

Table 20--Net volume of sawtimber (Scribner rule) on timberland outside National Forests by species and diameter class in northwestern New Mexico, 1987

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	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+		
	----- Thousand board feet, Scribner rule -----												
Douglas-fir	44,454	54,942	71,968	84,685	51,165	55,627	31,075	15,141	46,419	--	1,832	457,308	
Ponderosa pine	77,346	103,099	152,513	182,687	174,203	211,073	160,555	127,916	105,369	69,058	84,044	1,447,863	
Whitebark pine	--	--	4,672	--	--	4,634	12,749	--	--	--	--	22,055	
Limber pine	--	2,653	--	--	--	--	--	--	--	--	--	2,653	
Subalpine fir	25,126	86,590	23,061	25,412	--	21,172	5,033	--	--	--	--	186,394	
White fir	38,830	58,599	51,639	21,287	60,739	24,373	8,042	3,021	--	13,474	15,167	295,171	
Engelmann spruce	54,804	102,346	101,631	24,661	63,860	7,785	24,462	19,136	--	9,097	15,361	423,143	
Total softwoods	240,560	408,229	405,484	338,732	349,967	324,664	241,916	165,214	151,788	91,629	116,404	2,834,587	
Aspen	XXXX	11,571	67,252	52,131	33,580	25,728	--	--	--	--	--	190,262	
Cottonwood	XXXX	--	--	--	--	12,362	--	--	--	5,694	--	18,056	
Total hardwoods	XXXX	11,571	67,252	52,131	33,580	38,090	--	--	--	5,694	--	208,318	
All species	240,560	419,800	472,736	390,863	383,547	362,754	241,916	165,214	151,788	97,323	116,404	3,042,905	

Table 21--Net volume of timber on timberland outside National Forests by class of timber, and softwoods and hardwoods in northwestern New Mexico, 1987

Class of timber	Softwoods	Hardwoods	All classes
	-- -- -- -- Thousand cubic feet -- -- -- --		
Sawtimber trees:			
Sawlog portion	656,350	44,387	700,737
Upper-stem portion	31,935	2,098	34,033
Total	688,285	46,485	734,770
Poletimber trees	139,214	62,210	201,424
All growing-stock trees	827,499	108,695	936,194
Sound cull trees	3,810	845	4,655
Rotten cull trees	3,997	5,662	9,659
Salvable dead trees	49,616	19,309	68,925
All timber	884,922	134,511	1,019,433

Table 22--Net volume of growing stock on timberland outside National Forests by forest type and species in northwestern New Mexico, 1987

Forest type	Species											
	Douglas- fir	Ponderosa pine	Whitebark pine	Limber pine	Subalpine fir	White fir	Engelmann spruce	Total softwoods	Aspen	Cotton- wood	Total hardwoods	All species
	----- Thousand cubic feet -----											
Douglas-fir	76,818	18,448	--	820	1,602	6,809	5,738	110,235	13,575	--	13,575	123,810
Ponderosa pine	18,065	332,673	--	--	--	171	--	350,909	14,338	--	14,338	365,247
Spruce-subalpine fir	7,194	--	4,845	--	70,295	--	95,958	178,292	28,212	--	28,212	206,504
White fir	39,720	9,879	--	--	--	70,698	3,166	123,463	7,571	--	7,571	131,034
Spruce	2,266	--	--	--	1,057	2,047	32,878	38,248	5,118	--	5,118	43,366
Aspen	2,133	--	--	--	7,426	16,791	1	26,351	35,565	--	35,565	61,916
Cottonwood	--	--	--	--	--	--	--	--	4,317	--	4,317	4,317
All types	146,196	361,000	4,845	820	80,380	96,516	137,741	827,498	104,379	4,317	108,696	936,194

Table 23--Net volume of sawtimber (International 4-inch rule) on timberland outside National Forests by forest type and species in northwestern New Mexico, 1987

Forest type	Species											
	Douglas- fir	Ponderosa pine	Whitebark pine	Limber pine	Subalpine fir	White fir	Engelmann spruce	Total softwoods	Aspen	Cotton- wood	Total hardwoods	All species
	----- Thousand board feet, International 4-inch rule -----											
Douglas-fir	279,068	62,686	--	3,322	4,076	27,009	20,751	396,912	--	--	--	396,912
Ponderosa pine	63,607	1,553,413	--	--	--	507	--	1,617,527	46,871	--	46,871	1,664,398
Spruce-subalpine fir	26,975	--	25,101	--	195,023	--	346,804	593,903	63,656	--	63,656	657,559
White fir	194,177	48,201	--	--	--	270,583	16,380	529,341	9,910	--	9,910	539,251
Spruce	10,790	--	--	--	--	8,263	144,364	163,417	--	--	--	163,417
Aspen	11,699	--	--	--	37,867	39,620	--	89,186	113,318	--	113,318	202,504
Cottonwood	--	--	--	--	--	--	--	--	20,288	--	20,288	20,288
All types	586,316	1,664,300	25,101	3,322	236,966	345,982	528,299	3,390,286	233,755	20,288	254,043	3,644,329

Table 24--Net volume of sawtimber (Scribner rule) on timberland outside National Forests by forest type and species in northwestern New Mexico, 1987

Forest type	Species											All species
	Douglas-fir	Ponderosa pine	Whitebark pine	Limber pine	Subalpine fir	White fir	Engelmann spruce	Total softwoods	Aspen	Cottonwood	Total hardwoods	
	----- Thousand board feet, Scribner rule -----											
Douglas-fir	212,307	54,556	--	2,653	3,011	23,128	16,305	311,960	--	--	--	311,960
Ponderosa pine	50,257	1,351,237	--	--	--	423	--	1,401,917	37,717	--	37,717	1,439,634
Spruce-subalpine fir	20,562	--	22,055	--	152,536	--	274,826	469,979	51,347	--	51,347	521,326
White fir	155,823	42,070	--	--	--	230,149	13,233	441,275	7,790	--	7,790	449,065
Spruce	8,820	--	--	--	--	7,354	118,779	134,953	--	--	--	134,953
Aspen	9,539	--	--	--	30,847	34,116	--	74,502	93,408	--	93,408	167,910
Cottonwood	--	--	--	--	--	--	--	--	--	18,057	18,057	18,057
All types	457,308	1,447,863	22,055	2,653	186,394	295,170	423,143	2,834,586	190,262	18,057	208,319	3,042,905

Table 25--Net annual growth of growing stock on timberland outside National Forests by species and ownership class in northwestern New Mexico, 1987

Species	Ownership class		Total
	Other public	Private	
- - - - - Thousand cubic feet - - - - -			
Douglas-fir	748	3,125	3,873
Ponderosa pine	180	8,089	8,269
Whitebark pine	--	52	52
Limber pine	--	9	9
Subalpine fir	--	1,330	1,330
White fir	168	2,321	2,489
Engelmann spruce	170	3,015	3,185
Total softwoods	1,266	17,941	19,207
Aspen	90	4,037	4,127
Cottonwood	--	153	153
Total hardwoods	90	4,190	4,280
All species	1,356	22,131	23,487

Table 26--Net annual growth of sawtimber (International 4-inch rule) on timberland outside National Forests by species and ownership class in northwestern New Mexico, 1987

Species	Ownership class		Total
	Other public	Private	
- Thousand board feet, International 4-inch rule -			
Douglas-fir	1,079	10,935	12,014
Ponderosa pine	1,266	40,609	41,875
Whitebark pine	--	304	304
Limber pine	--	54	54
Subalpine fir	--	3,651	3,651
White fir	2,221	25,920	28,141
Engelmann spruce	507	10,597	11,104
Total softwoods	5,073	92,070	97,143
Aspen	--	3,231	3,231
Cottonwood	--	665	665
Total hardwoods	--	3,896	3,896
All species	5,073	95,966	101,039

Table 27--Net annual growth of sawtimber (Scribner rule) on timberland outside National Forests by species and ownership class in northwestern New Mexico, 1987

Species	Ownership class			Total
	Other public	Private		
	- - - Thousand board feet, Scribner rule - -			
Douglas-fir	924	8,484		9,408
Ponderosa pine	955	33,846		34,801
Whitebark pine	--	273		273
Limber pine	--	46		46
Subalpine fir	--	3,238		3,238
White fir	1,863	21,909		23,772
Engelmann spruce	422	9,087		9,509
Total softwoods	4,164	76,883		81,047
Aspen	--	2,832		2,832
Cottonwood	--	595		595
Total hardwoods	--	3,427		3,427
All species	4,164	80,310		84,474

Table 28--Net annual growth of growing stock on timberland outside National Forests by species and diameter class in northwestern New Mexico, 1987

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	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+		
	----- Thousand cubic feet -----														
Douglas-fir	1,460	640	599	474	349	360	-89 ⁽¹⁾	177	91	48	-237	--	1	3,873	
Ponderosa pine	2,054	1,002	1,008	732	685	637	613	526	351	296	171	101	93	8,269	
Whitebark pine	--	--	--	--	18	--	--	9	25	--	--	--	--	52	
Lumber pine	--	--	--	9	--	--	--	--	--	--	--	--	--	9	
Subalpine fir	269	409	148	223	135	64	--	77	5	--	--	--	--	1,330	
White fir	425	257	387	427	424	98	304	72	11	4	--	36	44	2,489	
Engelmann spruce	529	586	318	832	441	62	242	34	74	36	--	13	19	3,186	
Total softwoods	4,737	2,894	2,460	2,697	2,052	1,221	1,070	895	557	384	-66	150	157	19,208	
Aspen	2,613	571	374	29	260	134	105	40	--	--	--	--	--	4,126	
Cottonwood	--	--	--	--	--	--	--	119	--	--	--	34	--	153	
Total hardwoods	2,613	571	374	29	260	134	105	159	--	--	--	34	--	4,279	
All species	7,350	3,465	2,834	2,726	2,312	1,355	1,175	1,054	557	384	-66	184	157	23,487	

¹Net annual growth will be negative when annual mortality exceeds gross annual growth.

Table 29--Net annual growth of sawtimber (International 4-inch rule) on timberland outside National Forests by species and diameter class in northwestern New Mexico, 1987

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	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+				
	----- Thousand board feet, International 4-inch rule -----														
Douglas-fir	4,883	2,754	2,080	2,160	-411 ⁽¹⁾	1,070	549	291	-1,366	--	5	12,015			
Ponderosa pine	16,244	4,374	4,191	3,931	3,775	3,224	2,122	1,786	1,036	618	573	41,874			
Whitebark pine	--	--	104	--	--	50	149	--	--	--	--	303			
Limber pine	--	54	--	--	--	--	--	--	--	--	--	54			
Subalpine fir	614	1,551	732	331	--	396	27	--	--	--	--	3,651			
White fir	21,794	2,147	1,995	423	1,151	254	38	16	--	144	179	28,141			
Engelmann spruce	1,437	4,791	2,388	322	1,234	174	386	195	--	73	105	11,105			
Total softwoods	44,972	15,671	11,490	7,167	5,749	5,168	3,271	2,288	-330	835	862	97,143			
Aspen	XXXXX	186	1,590	728	534	193	--	--	--	--	--	3,231			
Cottonwood	XXXXX	--	--	--	--	506	--	--	--	159	--	665			
Total hardwoods	XXXXX	186	1,590	728	534	699	--	--	--	159	--	3,896			
All species	44,972	15,857	13,080	7,895	6,283	5,867	3,271	2,288	-330	994	862	101,039			

¹Net annual growth will be negative when annual mortality exceeds gross annual growth.

Table 30--Net annual growth of sawtimber (Scribner rule) on timberland outside National Forests by species and diameter class in northwestern New Mexico, 1987

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	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+		
	----- Thousand board feet, Scribner rule -----												
Douglas-fir	3,482	2,196	1,718	1,818	1,818	915	471	250	-1,143	--	4	9,407	
Ponderosa pine	11,664	3,875	3,826	3,646	3,460	2,869	1,889	1,590	922	550	510	34,801	
Whitebark pine	--	--	93	--	--	47	133	--	--	--	--	273	
Limber pine	--	46	--	--	--	--	--	--	--	--	--	46	
Subalpine fir	572	1,391	622	287	--	344	23	--	--	--	--	3,239	
White fir	18,001	1,903	1,823	396	1,087	226	34	15	--	128	159	23,772	
Engelmann spruce	1,344	3,973	2,034	278	1,068	151	336	169	--	64	91	9,508	
Total softwoods	35,063	13,384	10,116	6,425	5,311	4,552	2,886	2,024	-221	742	764	81,046	
Aspen	XXXXX	160	1,381	645	475	171	--	--	--	--	--	2,832	
Cottonwood	XXXXX	--	--	--	--	454	--	--	--	142	--	596	
Total hardwoods	XXXXX	160	1,381	645	475	625	--	--	--	142	--	3,428	
All species	35,063	13,544	11,497	7,070	5,786	5,177	2,886	2,024	-221	884	764	84,474	

¹Net annual growth will be negative when annual mortality exceeds gross annual growth.

Table 31--Annual mortality of growing stock on timberland outside National Forests by species and ownership class in northwestern New Mexico, 1987

Species	Ownership class		Total
	Other public	Private	
- - - - - Thousand cubic feet - - - - -			
Douglas-fir	--	513	513
Ponderosa pine	--	70	70
Whitebark pine	--	--	--
Limber pine	--	--	--
Subalpine fir	--	694	694
White fir	--	--	--
Engelmann spruce	--	--	--
Total softwoods	--	1,277	1,277
Aspen	--	--	--
Cottonwood	--	--	--
Total hardwoods	--	--	--
All species	--	1,277	1,277

Table 32--Annual mortality of sawtimber (International 1/4-inch rule) on timberland outside National Forests by species and ownership class in northwestern New Mexico, 1986

Species	Ownership class		Total
	Other public	Private	
- Thousand board feet, International 1/4-inch rule -			
Douglas-fir	--	2,895	2,895
Ponderosa pine	--	269	269
Whitebark pine	--	--	--
Limber pine	--	--	--
Subalpine fir	--	1,203	1,203
White fir	--	--	--
Engelman spruce	--	--	--
Total softwoods	--	4,367	4,367
Aspen	--	--	--
Cottonwood	--	--	--
Total hardwoods	--	--	--
All species	--	4,367	4,367

Table 33--Annual mortality of sawtimber (Scribner rule) on timberland outside National Forests by species and ownership class in northwestern New Mexico, 1986

Species	Ownership class		
	Other public	Private	Total
- - - - Thousand board feet, Scribner rule - - - -			
Douglas-fir	--	2,403	2,403
Ponderosa pine	--	204	204
Whitebark pine	--	--	--
Limber pine	--	--	--
Subalpine fir	--	898	898
White fir	--	--	--
Engelman spruce	--	--	--
Total softwoods	--	3,505	3,505
Aspen	--	--	--
Cottonwood	--	--	--
Total hardwoods	--	--	--
All species	--	3,505	3,505

Table 34--Annual mortality of growing stock on timberland outside National Forests by species and diameter class in northwestern New Mexico, 1986

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	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9		29.0+
	--- Thousand cubic feet ---													
Douglas-fir	--	--	--	--	--	--	220	--	--	--	293	--	--	513
Ponderosa pine	--	--	70	--	--	--	--	--	--	--	--	--	--	70
Whitebark pine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Limber pine	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Subalpine fir	--	437	--	257	--	--	--	--	--	--	--	--	--	694
White fir	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Engelmann spruce	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	--	437	70	257	--	--	220	--	--	--	293	--	--	1,277
Aspen	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Total hardwoods	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All species	--	437	70	257	--	--	220	--	--	--	293	--	--	1,277

Table 35--Annual mortality of sawtimber (International 1/4-inch rule) on timberland outside National Forests by species and diameter class in northwestern New Mexico, 1986

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	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	----- Thousand board feet, International 1/4-inch rule -----											
Douglas-fir	--	--	--	--	1,201	--	--	--	1,694	--	--	2,895
Ponderosa pine	269	--	--	--	--	--	--	--	--	--	--	269
Whitebark pine	--	--	--	--	--	--	--	--	--	--	--	--
Limber pine	--	--	--	--	--	--	--	--	--	--	--	--
Subalpine fir	--	1,203	--	--	--	--	--	--	--	--	--	1,203
White fir	--	--	--	--	--	--	--	--	--	--	--	--
Engelmann spruce	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	269	1,203	--	--	1,201	--	--	--	1,694	--	--	4,367
Aspen	XXXX	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	XXXX	--	--	--	--	--	--	--	--	--	--	--
Total hardwoods	XXXX	--	--	--	--	--	--	--	--	--	--	--
All species	269	1,203	--	--	1,201	--	--	--	1,694	--	--	4,367

Table 36--Annual mortality of sawtimber (Scribner rule) on timberland outside National Forests by species and diameter class in northwestern New Mexico, 1986

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	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+		
	----- Thousand board feet, Scribner rule -----												
Douglas-fir	--	--	--	--	977	--	--	--	1,426	--	--	--	2,403
Ponderosa pine	204	--	--	--	--	--	--	--	--	--	--	--	204
Whitebark pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Limber pine	--	--	--	--	--	--	--	--	--	--	--	--	--
Subalpine fir	--	898	--	--	--	--	--	--	--	--	--	--	898
White fir	--	--	--	--	--	--	--	--	--	--	--	--	--
Engelmann spruce	--	--	--	--	--	--	--	--	--	--	--	--	--
Total softwoods	204	898	--	--	977	--	--	--	1,426	--	--	--	3,505
Aspen	XXXX	--	--	--	--	--	--	--	--	--	--	--	--
Cottonwood	XXXX	--	--	--	--	--	--	--	--	--	--	--	--
Total hardwoods	XXXX	--	--	--	--	--	--	--	--	--	--	--	--
All species	204	898	--	--	977	--	--	--	1,426	--	--	--	3,505

Table 37--Annual mortality of growing stock on timberland outside National Forests by species and cause of death in northwestern New Mexico, 1986

Species	Cause of death								Total	
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown ¹		
					Thousand cubic feet					
Douglas-fir	--	--	--	--	--	--	--	513	513	513
Ponderosa pine	--	--	--	--	--	--	--	70	70	70
Whitebark pine	--	--	--	--	--	--	--	--	--	--
Limber pine	--	--	--	--	--	--	--	--	--	--
Subalpine fir	--	308	--	--	--	--	--	386	386	694
White fir	--	--	--	--	--	--	--	--	--	--
Engelmann spruce	--	--	--	--	--	--	--	--	--	--
Total softwoods	--	308	--	--	--	--	--	969	969	1,277
Aspen	--	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--	--
Total hardwoods	--	--	--	--	--	--	--	--	--	--
All species	--	308	--	--	--	--	--	969	969	1,277

¹Because many destructive agents often attack trees in concert or in succession, it is often difficult to identify the actual causal agent. When the primary cause of death cannot be precisely determined, it is listed as unknown.

Table 38--Annual mortality of sawtimber (International ¼-inch rule) on timberland outside National Forests by species and cause of death in northwestern New Mexico, 1986

Species	Cause of death								Total
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	
----- Thousand board feet, International ¼-inch rule -----									
Douglas-fir	--	--	--	--	--	--	--	2,895	2,895
Ponderosa pine	--	--	--	--	--	--	--	269	269
Whitebark pine	--	--	--	--	--	--	--	--	--
Limber pine	--	--	--	--	--	--	--	--	--
Subalpine fir	--	--	--	--	--	--	--	1,203	1,203
White fir	--	--	--	--	--	--	--	--	--
Engelmann spruce	--	--	--	--	--	--	--	--	--
Total softwoods	--	--	--	--	--	--	--	4,367	4,367
Aspen	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--
Total hardwoods	--	--	--	--	--	--	--	--	--
All species	--	--	--	--	--	--	--	4,367	4,367

Table 39--Annual mortality of sawtimber (Scribner rule) on timberland outside National Forests by species and cause of death in northwestern New Mexico, 1986

Species	Cause of death								Total
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	
----- Thousand board feet, Scribner rule -----									
Douglas-fir	--	--	--	--	--	--	--	2,403	2,403
Ponderosa pine	--	--	--	--	--	--	--	204	204
Whitebark pine	--	--	--	--	--	--	--	--	--
Limber pine	--	--	--	--	--	--	--	--	--
Subalpine fir	--	--	--	--	--	--	--	898	898
White fir	--	--	--	--	--	--	--	--	--
Engelmann spruce	--	--	--	--	--	--	--	--	--
Total softwoods	--	--	--	--	--	--	--	3,505	3,505
Aspen	--	--	--	--	--	--	--	--	--
Cottonwood	--	--	--	--	--	--	--	--	--
Total hardwoods	--	--	--	--	--	--	--	--	--
All species	--	--	--	--	--	--	--	3,505	3,505

Woodland Tables

Table 40--Area of woodland outside National Forests by forest type and ownership class in northwestern New Mexico, 1987

Forest type	Ownership class		
	Other public	Private	Total
	----- Acres -----		
Pinyon-juniper	912,168	1,899,778	2,811,946
Juniper	77,363	147,180	224,543
Total woodland softwoods	989,531	2,046,958	3,036,489
Oak	10,957	105,251	116,208
Total woodland hardwoods	10,957	105,251	116,208
All types	1,000,488	2,152,209	3,152,697

Table 41--Area of woodland outside National Forests by ownership class, forest type, and productivity class in northwestern New Mexico, 1987

Ownership class	Forest type	Productivity class		
		High	Low	All classes
		----- Acres -----		
Other public:	Pinyon-juniper	641,448	270,720	912,168
	Juniper	70,592	6,771	77,363
	Oak	10,957	--	10,957
	Total	722,997	277,491	1,000,488
Private:	Pinyon-juniper	1,494,602	405,176	1,899,778
	Juniper	87,111	60,070	147,181
	Oak	105,250	--	105,250
	Total	1,686,963	465,246	2,152,209
Total:	Pinyon-juniper	2,136,050	675,896	2,811,946
	Juniper	157,703	66,841	224,544
	Oak	116,207	--	116,207
	Total	2,409,960	742,737	3,152,697

Table 42--Area of woodland outside National Forests by ownership class, forest type, and volume class in northwestern New Mexico, 1987

Ownership class	Forest type	Volume class				Acres	All classes
		0 - 500 cu ft/acre	500-1,000 cu ft/acre	1,000+ cu ft/acre			

Other public:	Pinyon-juniper	610,469	235,157	66,543	912,169		
	Juniper	50,280	20,312	6,771	77,363		
	Oak	10,956	--	--	10,956		
	Total	671,705	255,469	73,314	1,000,488		

Private:	Pinyon-juniper	1,073,532	610,021	216,226	1,899,779		
	Juniper	135,097	12,083	--	147,180		
	Oak	47,851	27,932	29,467	105,250		
	Total	1,256,480	650,036	245,693	2,152,209		

Total:	Pinyon-juniper	1,684,001	845,178	282,769	2,811,948		
	Juniper	185,377	32,395	6,771	224,543		
	Oak	58,807	27,932	29,467	116,206		
	Total	1,928,185	905,505	319,007	3,152,697		

Table 43--Number of trees on woodland outside National Forests by ownership class, species, and diameter class in northwestern New Mexico, 1987

Ownership class and species	Two-inch diameter at root collar class																	All classes
	Thousand trees																	
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+			
Other public:																		
Pinyon	33,100	22,947	16,785	11,128	6,165	3,036	1,591	882	264	221	--	68	--	32	--	96,219		
Juniper	11,199	7,600	10,124	8,649	8,036	8,565	7,232	6,070	3,836	3,388	1,617	1,224	544	229	154	78,467		
Oak	822	8,545	675	203	100	33	--	--	--	--	--	--	--	--	--	10,378		
Total	45,121	39,092	27,584	19,980	14,301	11,634	8,823	6,952	4,100	3,609	1,617	1,292	544	261	154	185,064		
Private:																		
Pinyon	78,692	55,924	48,195	31,025	17,406	10,755	5,389	3,155	1,906	896	121	58	--	112	--	253,634		
Juniper	32,706	16,012	18,741	16,488	15,652	12,126	11,671	9,397	6,683	4,125	2,824	2,538	1,253	1,053	988	152,257		
Oak	50,735	43,092	14,729	2,962	354	--	30	--	--	--	--	--	--	--	--	111,902		
Total	162,133	115,028	81,665	50,475	33,412	22,881	17,060	12,582	8,589	5,021	2,945	2,596	1,253	1,165	988	517,793		
Total:																		
Pinyon	111,792	78,871	64,980	42,153	23,571	13,791	6,980	4,037	2,170	1,117	121	126	--	144	--	349,853		
Juniper	43,905	23,612	28,865	25,137	23,688	20,691	18,903	15,467	10,519	7,513	4,441	3,762	1,797	1,282	1,142	230,724		
Oak	51,557	51,637	15,404	3,165	454	33	--	30	--	--	--	--	--	--	--	122,280		
Total	207,254	154,120	109,249	70,455	47,713	34,515	25,883	19,534	12,689	8,630	4,562	3,888	1,797	1,426	1,142	702,857		

Table 44--Net volume on woodland outside National Forests by species and ownership class in northwestern New Mexico, 1987

Species	Ownership class			Total
	Other public	Private		
	- - - - - Thousand cubic feet - - - - -			
Douglas-fir	--	2,764		2,764
Ponderosa pine	6,530	35,243		41,773
White fir	--	449		449
Cottonwood	--	1,357		1,357
Pinyon/juniper	406,126	962,841		1,368,967
Woodland hardwoods	3,004	53,425		56,429
All species	415,660	1,056,079		1,471,739

Table 45--Net volume of woodland species on woodland outside National Forests by ownership class, species, and diameter class in northwestern New Mexico, 1987

Ownership class and species	Two-inch diameter at root collar class																All Classes
	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+			
----- Thousand cubic feet -----																	
Other public:																	
Pinyon	9,381	19,165	28,667	28,450	21,588	17,685	14,436	6,862	4,699	--	2,808	--	1,302	--	155,043		
Juniper	1,347	7,186	12,519	18,868	31,281	32,875	37,024	29,295	30,244	16,029	15,909	9,471	5,416	3,619	251,083		
Oak	1,550	637	331	369	117	--	--	--	--	--	--	--	--	--	3,004		
Total	12,278	26,988	41,517	47,687	52,986	50,560	51,460	36,157	34,943	16,029	18,717	9,471	6,718	3,619	409,130		
Private:																	
Pinyon	22,811	58,442	79,930	79,275	81,457	65,976	50,231	41,166	28,023	3,372	1,611	--	7,930	--	520,224		
Juniper	3,328	12,697	23,011	37,563	41,051	53,839	50,948	48,472	36,417	28,262	35,275	20,368	24,087	27,298	442,616		
Oak	19,387	23,350	8,986	1,523	--	--	179	--	--	--	--	--	--	--	53,425		
Total	45,526	94,489	111,927	118,361	122,508	119,815	101,358	89,638	64,440	31,634	36,886	20,368	32,017	27,298	1,016,265		
Total:																	
Pinyon	32,192	77,607	108,597	107,725	103,045	83,661	64,667	48,028	32,722	3,372	4,419	--	9,232	--	675,267		
Juniper	4,675	19,883	35,530	56,431	72,332	86,714	87,972	77,767	66,661	44,291	51,184	29,839	29,503	30,917	693,699		
Oak	20,937	23,987	9,317	1,892	117	--	179	--	--	--	--	--	--	--	56,429		
Total	57,804	121,477	153,444	166,048	175,494	170,375	152,818	125,795	99,383	47,663	55,603	29,839	38,735	30,917	1,425,395		

Table 46--Net volume of woodland species on woodland outside National Forests by ownership class, forest type, and productivity class in northwestern New Mexico, 1987

Ownership class	Forest type	Productivity class		
		High	Low	All classes
- - - - Thousand cubic feet - - - -				
Other public:	Pinyon-juniper	288,333	90,681	379,014
	Juniper	26,939	1,709	28,648
	Oak	1,468	--	1,468
	Total	316,740	92,390	409,130
Private:	Pinyon-juniper	761,665	160,288	921,953
	Juniper	14,019	17,398	31,417
	Oak	62,895	--	62,895
	Total	838,579	177,686	1,016,265
Total:	Pinyon-juniper	1,049,998	250,969	1,300,967
	Juniper	40,958	19,107	60,065
	Oak	64,363	--	64,363
	Total	1,155,319	270,076	1,425,395

Table 47--Net volume of woodland species on woodland outside National Forests by ownership class, forest type, and volume class in northwestern New Mexico, 1987

Ownership class	Forest type	Volume class			
		0 - 500 cu ft/acre	500-1,000 cu ft/acre	1,000+ cu ft/acre	All classes
- - - - - Thousand cubic feet - - - - -					
Other public:	Pinyon-juniper	153,957	150,966	74,091	379,014
	Juniper	9,459	11,289	7,900	28,648
	Oak	1,468	--	--	1,468
	Total	164,884	162,255	81,991	409,130
Private:	Pinyon-juniper	277,855	384,152	259,946	921,953
	Juniper	24,087	7,330	--	31,417
	Oak	9,570	12,644	40,681	62,895
	Total	311,512	404,126	300,627	1,016,265
Total:	Pinyon-juniper	431,812	535,118	334,037	1,300,967
	Juniper	33,546	18,619	7,900	60,065
	Oak	11,038	12,644	40,681	64,363
	Total	476,396	566,381	382,618	1,425,395

Table 48--Net dead volume of woodland species on woodland outside National Forests by ownership class, species, and diameter class in northwestern New Mexico, 1987

Ownership class and species	Two-inch diameter at root collar class																All classes
	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+			
----- Thousand cubic feet -----																	
Other public:																	
Pinyon	379	1,979	4,529	5,019	4,768	3,317	3,319	290	1,110	3,188	562	--	130	--			28,590
Juniper	48	246	1,619	2,860	6,620	7,682	8,415	6,166	6,216	4,165	2,394	1,839	1,924	661			50,855
Oak	172	308	26	102	98	--	--	--	--	--	--	--	144	--			850
Total	599	2,533	6,174	7,981	11,486	10,999	11,734	6,456	7,326	7,353	2,956	1,839	2,198	661			80,295
Private:																	
Pinyon	913	5,210	10,226	12,832	11,818	8,500	7,719	6,512	4,955	1,460	2,493	--	219	--			72,857
Juniper	99	803	2,144	5,554	7,673	13,476	12,997	11,190	11,946	7,708	9,418	5,095	4,089	5,842			98,034
Oak	1,472	1,061	477	--	--	--	9	--	--	--	--	--	--	--			3,019
Total	2,484	7,074	12,847	18,386	19,491	21,976	20,725	17,702	16,901	9,168	11,911	5,095	4,308	5,842			173,910
Total:																	
Pinyon	1,292	7,189	14,755	17,851	16,586	11,817	11,038	6,802	6,065	4,648	3,055	--	349	--			101,447
Juniper	147	1,049	3,763	8,414	14,293	21,158	21,412	17,356	18,162	11,873	11,812	6,934	6,013	6,503			148,889
Oak	1,644	1,369	503	102	98	--	9	--	--	--	--	--	144	--			3,869
Total	3,083	9,607	19,021	26,367	30,977	32,975	32,459	24,158	24,227	16,521	14,867	6,934	6,506	6,503			254,205

Table 49--Net dead volume of woodland species on woodland outside National Forests by ownership class, forest type, and productivity class in northwestern New Mexico, 1987

Ownership class	Forest type	Productivity class		
		High	Low	All classes
- - - - Thousand cubic feet - - - -				
Other public:	Pinyon-juniper	56,411	18,509	74,920
	Juniper	4,941	399	5,340
	Oak	35	--	35
	Total	61,387	18,908	80,295
Private:	Pinyon-juniper	126,840	40,627	167,467
	Juniper	1,031	1,891	2,922
	Oak	3,521	--	3,521
	Total	131,392	42,518	173,910
Total:	Pinyon-juniper	183,251	59,136	242,387
	Juniper	5,972	2,290	8,262
	Oak	3,556	--	3,556
	Total	192,779	61,426	254,205

Table 50--Net dead volume of woodland species on woodland outside National Forests by ownership class, forest type, and volume class in northwestern New Mexico, 1987

Ownership class	Forest type	Volume class			All classes
		0 - 500 cu ft/acre	500-1,000 cu ft/acre	1,000+ cu ft/acre	
- - - - - Thousand cubic feet - - - - -					
Other public:	Pinyon-juniper	30,549	24,417	19,954	74,920
	Juniper	2,296	1,963	1,081	5,340
	Oak	35	--	--	35
	Total	32,880	26,380	21,035	80,295
Private:	Pinyon-juniper	48,818	72,494	46,154	167,466
	Juniper	1,291	1,632	--	2,923
	Oak	126	828	2,567	3,521
	Total	50,235	74,954	48,721	173,910
Total:	Pinyon-juniper	79,367	96,911	66,108	242,386
	Juniper	3,587	3,595	1,081	8,263
	Oak	161	828	2,567	3,556
	Total	83,115	101,334	69,756	254,205

Table 51--Net annual growth on woodland outside National Forests by species and ownership class in northwestern New Mexico, 1986

Species	Ownership class		
	Other public	Private	Total
- - - - Thousand cubic feet - - - -			
Douglas-fir	--	43	43
Ponderosa pine	181	508	689
White fir	--	56	56
Cottonwood	--	114	114
Pinyon/juniper	5,264	13,196	18,460
Woodland hardwoods	143	2,209	2,352
All species	5,588	16,126	21,714

Table 52--Net annual growth of woodland species on woodland outcrops by ownership class, species, and diameter class in northwestern New Mexico, 1987

Ownership class and species	Two-inch diameter class												All classes	
	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9		27.0-28.9
- - - - - Net - - - - -														
Other public:														
Pinyon	463	454	566	432	273	134	137	--	8	--	6	--	--	2,568
Juniper	107	274	278	296	405	325	373	143	120	70	32	12	--	2,696
Oak	98	18	17	9	1	--	--	--	--	--	--	--	--	143
Total	668	746	861	737	679	459	410	143	128	70	38	12	--	5,407
Total	2,892	2,723	2,283	1,792	1,606	1,260	948	194	223	125	155	110	--	15,405
Total:														
Pinyon	1,785	2,056	2,157	1,589	1,344	846	816	13	19	--	35	--	--	10,990
Juniper	371	731	769	896	940	873	742	324	332	195	158	122	--	7,470
Oak	1,404	682	218	44	1	--	--	--	--	--	--	--	--	2,352
Total	3,560	3,469	3,144	2,529	2,285	1,719	1,558	337	351	195	193	122	--	20,812

Table 53--Net annual growth of woodland species on woodland outside National Forests by ownership class, forest type, and productivity class in northwestern New Mexico, 1986

Ownership class	Forest type	Productivity class		
		High	Low	All classes
- - - - Thousand cubic feet - - - -				
Other public:	Pinyon-juniper	3,774	1,129	4,903
	Juniper	391	25	416
	Oak	88	--	88
	Total	4,253	1,154	5,407
Private:	Pinyon-juniper	11,171	1,652	12,823
	Juniper	146	178	324
	Oak	2,258	--	2,258
	Total	13,575	1,830	15,405
Total:	Pinyon-juniper	14,945	2,781	17,726
	Juniper	537	203	740
	Oak	2,346	--	2,346
	Total	17,828	2,984	20,812

Table 54--Net annual growth of woodland species on woodland outside National Forests by ownership class, forest type, and volume class in northwestern New Mexico, 1986

Ownership class	Forest type	Volume class			
		0 - 500 cu ft/acre	500-1,000 cu ft/acre	1,000+ cu ft/acre	All classes
- - - - - Thousand cubic feet - - - - -					
Other public:	Pinyon-juniper	2,013	1,915	974	4,902
	Juniper	103	224	89	416
	Oak	89	--	--	89
	Total	2,205	2,139	1,063	5,407
Private:	Pinyon-juniper	4,732	5,550	2,541	12,823
	Juniper	290	34	--	324
	Oak	751	440	1,067	2,258
	Total	5,773	6,024	3,608	15,405
Total:	Pinyon-juniper	6,745	7,465	3,515	17,725
	Juniper	393	258	89	740
	Oak	840	440	1,067	2,347
	Total	7,978	8,163	4,671	20,812

Table 55--Annual mortality on woodland outside National Forests by species and ownership class in northwestern New Mexico, 1986

Species	Ownership class		
	Other public	Private	Total
- - - - Thousand cubic feet - - - -			
Douglas-fir	--	--	--
Ponderosa pine	--	--	--
White fir	--	--	--
Cottonwood	--	--	--
Pinyon/juniper	201	83	284
Woodland hardwoods	7	--	7
All species	208	83	291

Table 56--Number of pinyon Christmas trees on woodland outside National Forests by ownership class, grade, and height class in northwestern New Mexico, 1987

Ownership class	Christmas-tree grade	Height class			All classes
		0' - 5'	6' - 10'	11' - 15'	
- - - - - Thousand trees - - - - -					
Other public:	Premium	30	362	64	456
	Standard	1,823	2,877	354	5,054
	Utility	1,461	4,324	393	6,178
	Total	3,314	7,563	811	11,688
Private:	Premium	952	1,452	26	2,430
	Standard	2,738	4,031	1,050	7,819
	Utility	4,869	8,957	2,543	16,369
	Total	8,559	14,440	3,619	26,618
Total:	Premium	982	1,814	90	2,886
	Standard	4,561	6,908	1,404	12,873
	Utility	6,330	13,281	2,936	22,547
	Total	11,873	22,003	4,430	38,306

Table 57--Number of fenceposts on woodland outside National Forests by ownership class, species, and type of post in northwestern New Mexico, 1987

Ownership class	Species	Type of post		
		Line	Corner	Total
- - - - Thousand fenceposts - - - -				
Other public:	Pinyon	--	--	--
	Juniper	10,707	6,274	16,981
	Oak	438	68	506
	Total	11,145	6,342	17,487
Private:	Pinyon	--	--	--
	Juniper	20,220	11,570	31,790
	Oak	10,311	2,460	12,771
	Total	30,531	14,030	44,561
Total:	Pinyon	--	--	--
	Juniper	30,927	17,844	48,771
	Oak	10,749	2,528	13,277
	Total	41,676	20,372	62,048

County Tables

Table 58--Area of timberland outside National Forests in northwestern New Mexico by county, 1987

County	Area
- - Acres - -	
Bernalillo	15,430
Cibola	98,250
Los Alamos	1,923
McKinley	103,367
Rio Arriba	310,534
Sandoval	96,557
San Juan	125,807
Santa Fe	36,024
Taos	118,563
Valencia	11,342
Total	917,797

Table 59--Net volume of growing stock and sawtimber on timberland outside National Forests in northwestern New Mexico by county, 1987

County	Growing stock		Sawtimber	
	Thousand cubic feet	Thousand board feet International 1/4-inch rule	Thousand board feet Scribner rule	
Bernalillo	19,005	67,468	55,726	
Cibola	89,290	331,855	275,040	
Los Alamos	2,993	9,331	7,648	
McKinley	64,343	278,311	238,172	
Rio Arriba	333,974	1,301,745	1,088,102	
Sandoval	116,166	415,721	344,878	
San Juan	122,911	570,956	489,916	
Santa Fe	30,476	110,144	89,206	
Taos	144,555	514,783	418,029	
Valencia	12,481	44,015	36,188	
Total	936,194	3,644,329	3,042,905	

Table 60--Net annual growth of growing stock and sawtimber on timberland outside National Forests in northwestern New Mexico by county, 1986

County	Growing stock		Sawtimber	
	Thousand cubic feet	Thousand board feet International 1/4-inch rule	Thousand board feet Scribner rule	
Bernalillo	480	2,238	1,870	
Cibola	2,403	10,308	8,602	
Los Alamos	75	368	303	
McKinley	1,533	5,159	4,452	
Rio Arriba	8,132	35,802	29,999	
Sandoval	2,895	15,059	12,483	
San Juan	2,727	11,862	10,061	
Santa Fe	813	3,896	3,157	
Taos	4,101	15,099	12,506	
Valencia	328	1,248	1,041	
Total	23,487	101,039	84,474	

Table 61--Annual mortality of growing stock and sawtimber on timberland outside National Forests in northwestern New Mexico by county, 1986

County	Growing stock		Sawtimber
	Thousand cubic feet	Thousand board feet International 1/4-inch rule	Thousand board feet Scribner rule
Bernalillo	25	86	69
Cibola	214	758	598
Los Alamos	3	9	8
McKinley	46	156	126
Rio Arriba	508	1,726	1,390
Sandoval	175	594	478
San Juan	10	35	28
Santa Fe	41	138	111
Taos	243	824	664
Valencia	12	41	33
Total	1,277	4,367	3,505

Table 62--Area, net volume, net annual growth, and net annual mortality of woodland species on woodland outside National Forests in northwestern New Mexico by county

County	Area (1987)	Net volume (1987)	Net annual growth (1986)	Annual mortality (1986)
	-- Acres --	----- Thousand cubic feet -----		
Bernalillo	79,619	35,110	771	(1)
Cibola	613,111	286,165	4,469	188
Los Alamos	1,811	832	15	(1)
McKinley	722,195	353,221	4,839	39
Rio Arriba	584,817	294,448	4,255	45
Sandoval	307,633	120,050	1,535	6
San Juan	476,283	208,911	2,813	1
Santa Fe	205,798	52,857	869	1
Taos	125,996	61,465	1,052	1
Valencia	35,434	12,336	194	10
Total	3,152,697	1,425,395	20,812	291

¹Less than .5 thousand cubic feet.

Van Hooser, Dwane D. 1987. Timberland and woodland resources outside National Forests in northwestern New Mexico, 1987. Resour. Bull. INT-46. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 62 p.

Presents land area, timberland and woodland area, associated volume, and components of change for the forest lands outside the National Forests in northwestern New Mexico.

KEYWORDS: forest survey, inventory volume, pinyon-juniper



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