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Research Station**

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New Mexico's Forest Resources

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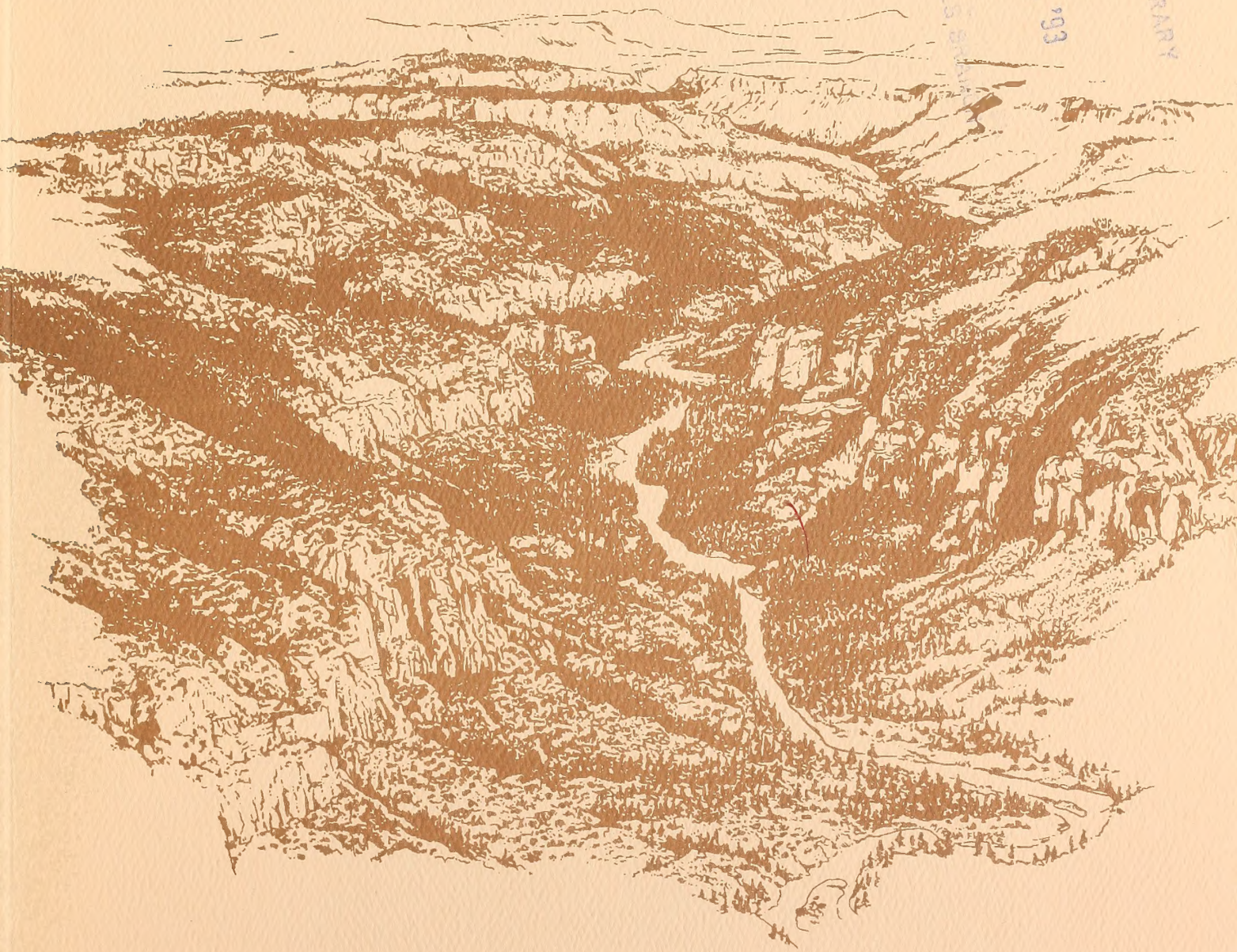

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RESEARCH SUMMARY

The forest land base in New Mexico totals more than 15 million acres, of which 1.5 million acres are in a reserved status that precludes certain activities, such as wood cutting. Of the more than 13 million nonreserved acres, more than 56 percent are administered by public agencies. Stands of timber species are found on 6.1 million acres. The woodland resource, typified by stands of pinyon-juniper, accounts for more than 9.0 million acres. These areas contain wood volumes of 6.0 billion cubic feet and 5.8 billion cubic feet, respectively. This report presents additional information on the land base, timberland and woodland area, and associated inventory volume, growth, mortality, and removals.

PREFACE

The primary objective of Forest Survey—a continuing, nationwide undertaking of the Forest Service, U.S. Department of Agriculture—is to assess the renewable resources on the Nation's forest lands. Periodic State-by-State resource inventories are key to accomplishing the objective. Forest Survey was initially authorized by the McSweeney-McNary Act of 1928. Its current mandate is 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, Utah, and Wyoming. These inventories provide information on the extent and condition of the forests—their wood volume and wood growth removals, and mortality for State, privately owned, and most other forest lands outside the National Forest System. These data, when combined with similar information on National Forest lands, provide a basis for forest policies and programs for the orderly development and use of renewable resources.

ACKNOWLEDGMENTS

The Intermountain Research Station gratefully acknowledges the cooperation of the State Office of the Bureau of Land Management and of the Bureau of Indian Affairs, both in the U.S. Department of the Interior. We extend a special note of gratitude to Bill Chapel and James Norwick, former New Mexico State Foresters; to Ray Gallegos, New Mexico State Forester and his staff; and to the private land owners who provided information and access to field sample locations.

The cover illustration was drawn by Myrna Finke, visual information specialist in the Bureau of Land Management's Albuquerque District Office.

HIGHLIGHTS

Area

- Total land area in New Mexico is 77.7 million acres.
- Forests cover about 15.2 million acres; 6.2 million are timberland, and 9 million are woodland.
- Sixty percent of the forest is in the public domain, with most in the National Forest System.
- Some 23 percent of the timberland area is reserved from timber harvesting, but 4.8 million acres are not.
- About 81 percent of the nonreserved timberland is in sawtimber-size stands.
- Ponderosa pine is the dominant forest cover type, occupying nearly 3 million acres, or roughly 60 percent of the timberland.
- Of the 8.9 million acres of nonreserved woodland forest, 4.8 million are in the public domain.
- Over 85 percent of the woodland forests are pinyon-juniper.

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Volume

- Net volume of growing stock on nonreserved timberland is 6 billion cubic feet; two-thirds is on the National Forests.
- Sawtimber volume is about 19 billion board feet (Scribner).
- The ponderosa pine type contains 43 percent of the volume; most of the remainder is in the Douglas-fir type.
- Most of the volume—87 percent—is in sawtimber stands.
- Seventy percent of the cubic-foot volume is in trees less than 17.0 inches d.b.h.
- Net volume of woodland species on woodland is 5.3 billion cubic feet, with pinyon representing more than half the volume.
- Nearly half of the woodland volume is in the 8.0- to 14.0-inch d.r.c. classes.

Growth

- Net annual growth of growing-stock is about 150 million cubic feet, or 3 percent of the volume; 136 million of the annual growth is in softwoods.
- Nearly half of the growth is accounted for by ponderosa pine; most of the remainder is in Douglas-fir, white fir, and Engelmann spruce.
- Woodland growth equals 61 million cubic feet. More than half is accounted for by pinyon.

Mortality

- Growing stock trees containing 14 million cubic feet of volume died in 1986.
- Douglas-fir and ponderosa pine sustained the heaviest losses.
- Small sawtimber trees accounted for 45 percent of softwood mortality, with poletimber-size trees accounting for roughly 25 percent.
- Insects, disease, and weather were the major known causes of morality.
- Practically all of the 2.7 million cubic feet of woodland mortality was in pinyon.

Removals

- Thirty-one million cubic feet of timber were removed from New Mexico's forests in 1986.
- Ponderosa pine accounted for more than two-thirds of the removals.
- Nearly all of the removals were in the form of sawlogs.
- More than four-fifths of the total removals came off National Forest System lands.

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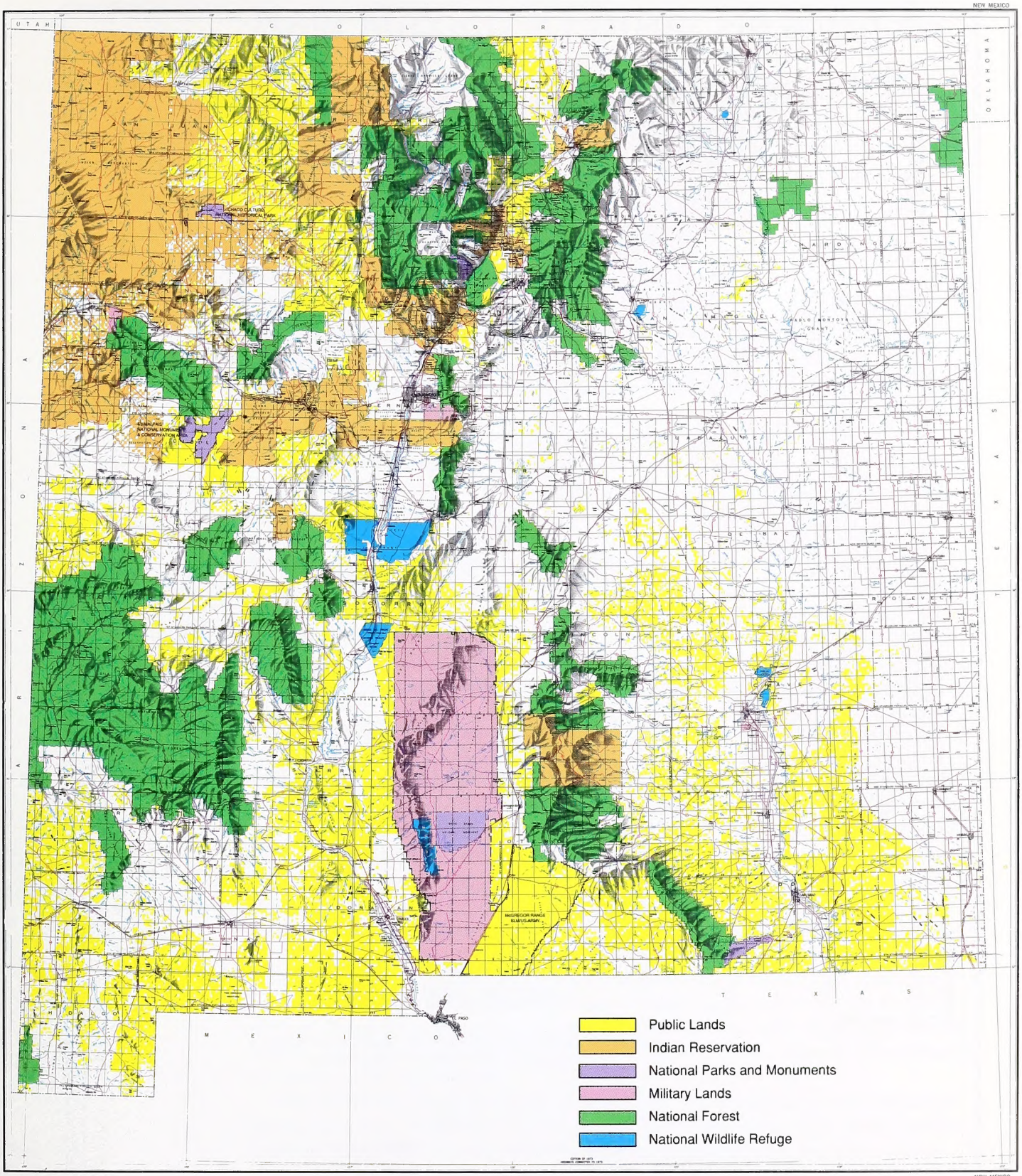

Figure 1—Distribution of land by ownership class, New Mexico, 1991 (U.S. Department of the Interior, Bureau of Land Management).

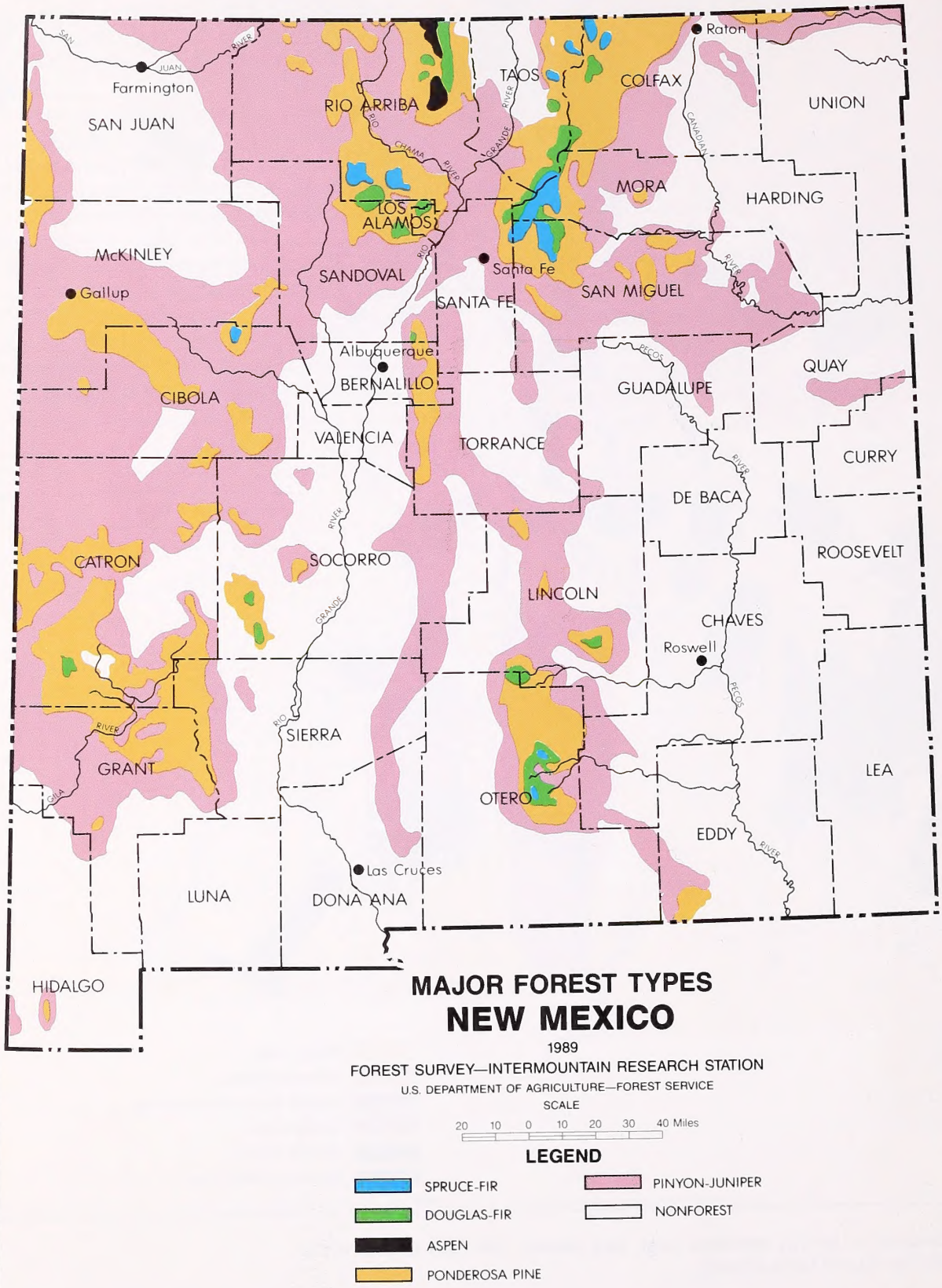

Figure 2—Distribution of major forest types, New Mexico, 1987.

New Mexico's Forest Resources

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INTRODUCTION

This resource bulletin presents the major findings of the latest Forest Survey of New Mexico. It combines data collected by the Intermountain Research Station and its cooperators during 1986 and 1987 with information for the National Forests provided by the Forest Service, Southwestern Region.

The data in this report reflect changes from previous reports (Choate 1966). These changes have three basic sources: changes in sampling design and intensity, changes in land classification and use, and biological and physical changes in the forest. The changes in definitions and survey standards make detailed comparisons with previous inventory results unwise. Relative trends in growth, mortality, and harvest levels can be identified. Both the biological and physical changes, as well as land use, are important for the future of the State's forest resources. Figures are in the text near where they are first referenced. Tables are in a separate section. A glossary explains the meaning of specialized terms used in the text, such as poletimber, sawtimber, sawlog portion of sawtimber trees, and rough trees.

A HISTORICAL BACKDROP

The history of the development of New Mexico's forests follows the general pattern of the Nation. Nomadic tribes of hunter-gatherers known to have inhabited the Southwest as long as 15,000 years ago first used the forests. Over the centuries, the hunting culture gave way to a more communal culture, with settlements sustained by farming. During this period, the great pueblos developed arts, crafts, and religion. Early tribes had hunted and gathered herbs, seeds, and nuts, and some firewood. The later farming cultures continued those uses. Since they did not have strong cutting tools, they fashioned dwellings and other structures from stone and adobe bricks, using small poles for structural support in ceilings and elsewhere. In addition, the forested mountains became sacred grounds for the tribes. The ruins of cities, canals, and other structures remain as evidence of these native Americans.

Next came the Spanish conquistadors and missionaries. Coronado and his legions were looking for gold and exploring the new land; missionaries, such as Father Escalante, were venturing into land now known as New Mexico. They used the forests to provide shelter and food. The Spanish occupation resulted in only modest increases in the use of wood. Architecture and construction showed Spanish influence, but was similar to that of the Indians. Pinyon and juniper were the main species used for firewood and for fenceposts in ranching operations. The forces of nature remained the major physical influence on the forests.

The full economic potential of the Southwest's resources could be captured only after vast improvements in transportation and technology, such as the railroad. The Federal Government gave railroads vast land grants as incentives to offset high risks associated with such ventures. Construction of railroads and towns and development of mines required large quantities of timber. The existence of distant as well as local markets spurred solutions to the problems of accessing timber. Lumbering became an economic enterprise in its own right.

By the end of the 19th Century, unacceptable environmental and social consequences were becoming apparent throughout the West from the essentially free use and grants of public forest land in the name of local economic development. In 1892 the first forest reserve in New Mexico was set aside under provisions of the General Land Law Revisions Act of 1891 in what is now the Santa Fe National Forest. This Act, the legislation granting New Mexico statehood, and other acts that followed created the ownership distribution that exists in New Mexico (fig. 1).

Today, the forests are expected to provide a variety of goods and services. Timber production is a primary use, but so are watershed protection, wildlife habitat, grazing, developed recreation, and wilderness.

NEW MEXICO'S FOREST LAND

The forests in New Mexico, like those in other Rocky Mountain States, occur in or near mountain ranges (fig. 2). Forests are found in the Sangre de Cristo and San Pedro Mountains in northern New Mexico; in the Zuni, Tularosa, and San Mateo Mountains in western New Mexico; and in the Jicarilla, Capitan, Sacramento, and Guadalupe Mountains in south-central New Mexico. Southwestern New Mexico has a small concentration of forest land at the southern tip of the Peloncillo Mountains. The cottonwood type is one exception to the forest/mountain correlation. Here, the correlation is nearly reversed with cottonwood occurring principally on wet sites in or along major waterways. The Rio Grande River bottom is a good example of prime cottonwood sites.

Generally, the forest land is concentrated in north-central and west-central New Mexico. If a line were extended from Clayton to Silver City, nearly 90 percent of the State's forest land would be north and west of the line.

New Mexico's varied topography provides landscapes ranging from desert to alpine tundra. The key factors in the forests' location and species composition are climatic available moisture and temperature. Both are strongly influenced by elevation and topography, varying greatly throughout the State. Elevations range from less than 3,000 feet along the Pecos River in the southeast to 13,161 feet atop Wheeler Peak north of Taos.

As in most mountainous areas, species occur in altitudinal zones. At lower elevations, more trees are found on cool, moist north and east slopes, than on south and west slopes that tend to be drier and hotter.

Precipitation in New Mexico is poorly distributed for tree growth. Summer rains usually come during short, high intensity storms. Much of the moisture is lost as surface runoff. Because the humidity is very low, the evaporation rate is high. In addition, the growing season often includes long periods of drought. The air is usually cool at higher elevations, but the sun heats the soil surface, damaging young trees. The mountains experience severe winters with heavy snowfalls and cold temperatures. The

wide variation in moisture and temperature account for the relatively small number of timber species found in the State.

More than 15 million acres of land meet the criteria for forest; that is, at least 10 percent of the area is stocked with forest trees. Forest represents nearly 20 percent of the State's total land area (table 1).

Forest areas are classified into three categories—two determined vegetatively, one determined politically (fig. 3). The political category is "reserved," indicating that an administrative action or statute precludes harvesting. An example would be the Gila Wilderness in west-central New Mexico. Some 1.5 million acres—10 percent of New Mexico's forest area—are reserved.

The two vegetatively determined classifications are based on the composition of the forest area. If the area is at least 10 percent stocked with tree species traditionally used in manufacturing forest products, the area is classified as timberland. Otherwise, the classification is woodland. Timber species are aspen (*Populus tremuloides*) and cottonwood (*Populus* spp.) and all conifers except the pinyons and junipers. Woodland species include the pinyons, junipers, and all other tree species not classified as timber species.

TIMBERLAND

New Mexico has 6.2 million acres of timberland, with 4.8 million potentially available for multiple use (table 1).

Ownership

Nearly three-fifths of the timberland is administered by public agencies (fig. 4). The National Forest System, which controls nearly 2.7 million acres, represents the largest single "ownership" in the State. The Bureau of Land Management (BLM), New Mexico State Department of Natural Resources, and various county and municipal governments administer just over 135,000 acres of timberland (table 1).

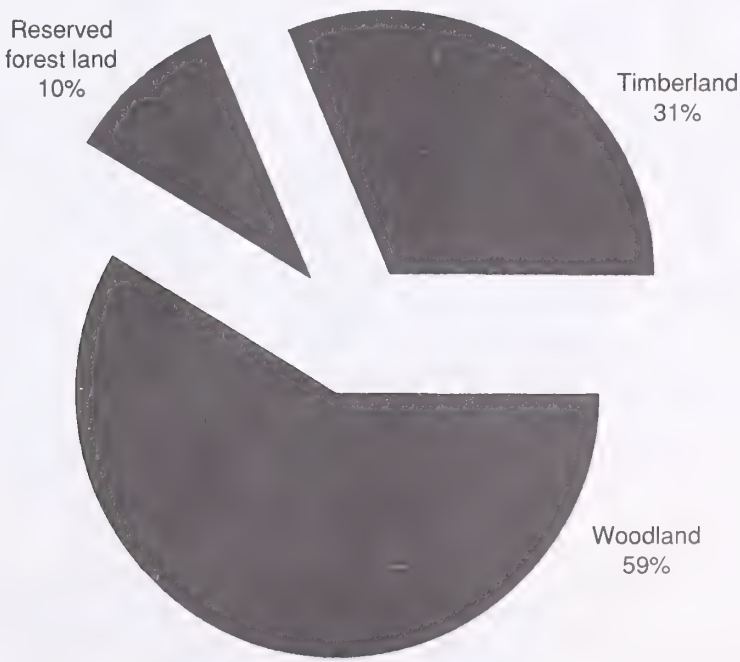


Figure 3—Distribution of forest land area by land class, New Mexico, 1987.

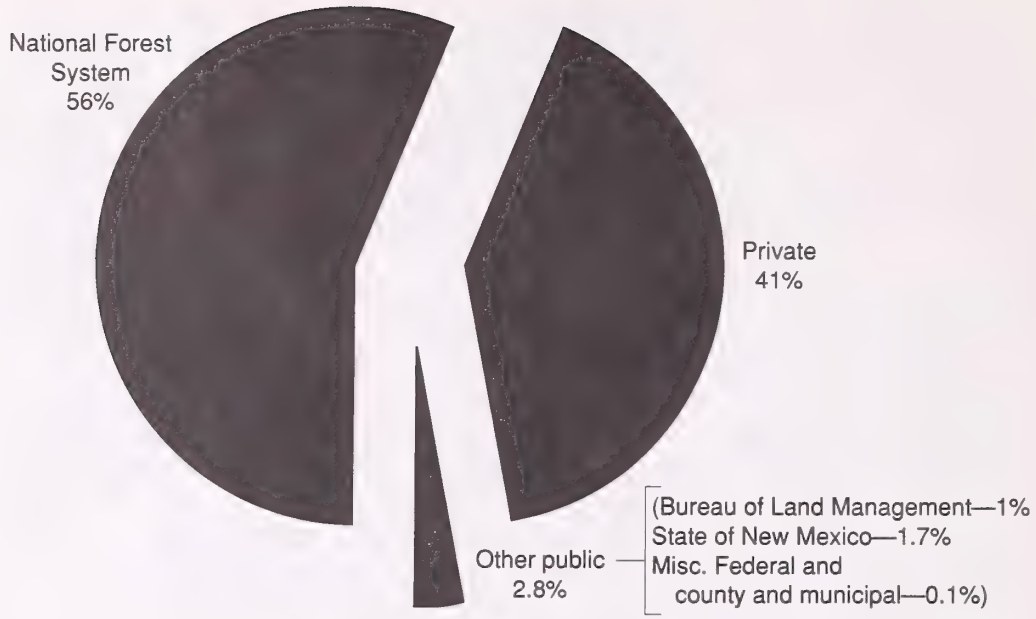


Figure 4—Distribution of timberland area by owner group, New Mexico, 1987.

Timberland areas in private ownership equal nearly 2.0 million acres. Owners vary from individuals to large corporations, including Indian tribes, farmers, and ranchers.

Private landowners are allowed to do more or less what they wish to their lands. Public agencies, on the other hand, are governed by specific rules, regulations, and processes. The National Forest Management Act, the National Forest Land Policy and Management Act, and the National Environmental Policy Act direct how management plans are to be developed and what they are to contain. Whereas private owners decide how to manage their lands, the entire populace of the United States has a say in how public lands are managed.

Forest Types

One of the most fundamental classifications of timberland is forest type, based on the tree species that represents the dominant component of the stand. Forest type is an indicator of current condition. It usually represents a seral stage, rather than the climax potential of the forest. It is an indicator of the types of consumptive and nonconsumptive products a forest area might produce, providing managers some understanding of management options. In few instances is a stand composed of a single species. Usually, the type indicator will be the species that accounts for the most stocking in the stand, while other associated species are less abundant.

PONDEROSA PINE

The ponderosa pine type is New Mexico's most extensive timberland type, accounting for about 2.9 million acres, or 60 percent of the State's timberland (table 5; fig. 5). It usually grows between 6,000 and 8,500 feet in elevation. This type is characterized by ponderosa pine (*Pinus ponderosa*) growing in pure stands (fig. 6), or in association with Douglas-fir (*Pseudotsuga menziesii*) in the mountains, or Gambel oak (*Quercus gambelii*) and pinyon (*Pinus edulis*) in the foothills.

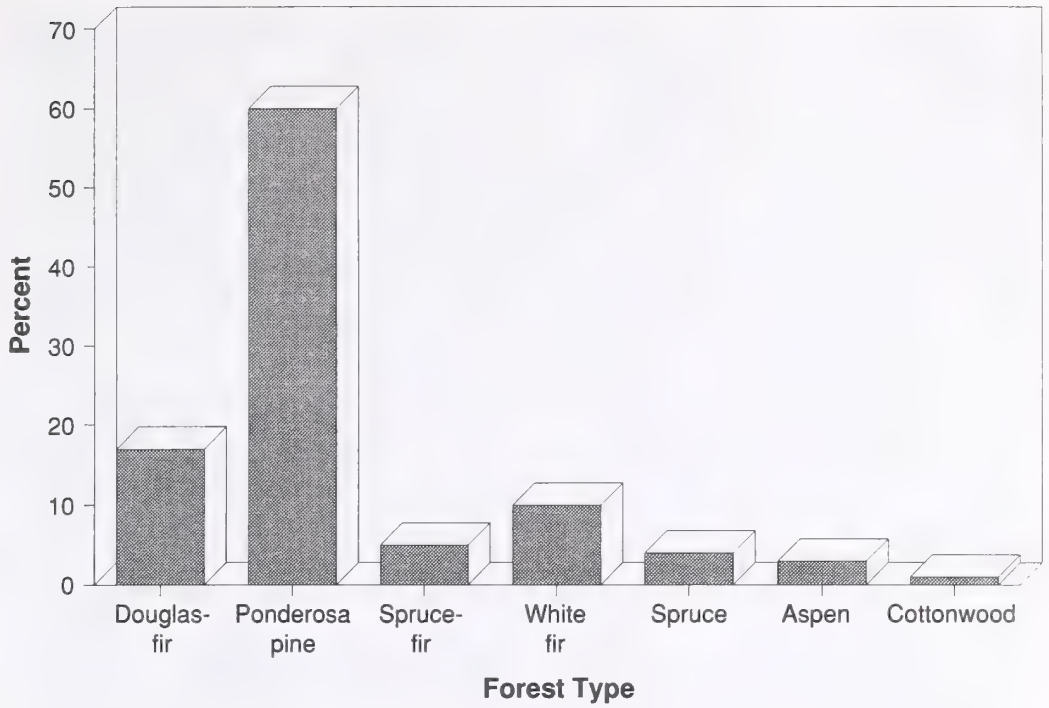


Figure 5—Distribution of timberland area by forest type, New Mexico, 1987.

Figure 6—Ponderosa pine stand in the Gila Wilderness, NM.

Ponderosa pine has always been the mainstay of the timber industry in New Mexico. Large-scale use began after construction of the first railroads. Ponderosa pine forests near Las Vegas, Pecos, and Santa Fe were heavily exploited for ties and construction materials between 1878 and 1881. Later, the wood's versatility brought demand for many other uses, such as poles, posts, mine timbers, and—most of all—lumber. About 73 percent of the lumber cut by New Mexico sawmills has been ponderosa pine. Although other species have gradually become more important, in 1986 ponderosa pine still accounted for 69 percent of the State's total timber products.

DOUGLAS-FIR

In New Mexico, Douglas-fir grows as a timber type on 842,000 acres, or 18 percent of the timberland area, second only to ponderosa pine. Douglas-fir seldom grows in pure stands. Within the species' 8,000- to 9,500-foot elevational range, it mixes with ponderosa pine at lower elevations and with true firs (*Abies* spp.) and spruce (*Picea* spp.) at higher elevations. White fir (*Abies concolor*) and aspen are common associates throughout the Douglas-fir type. Eighty-one percent of the area of Douglas-fir type is classed as sawtimber (table 5; fig. 7).

Figure 7—Douglas-fir stand in Jemez Canyon, NM.

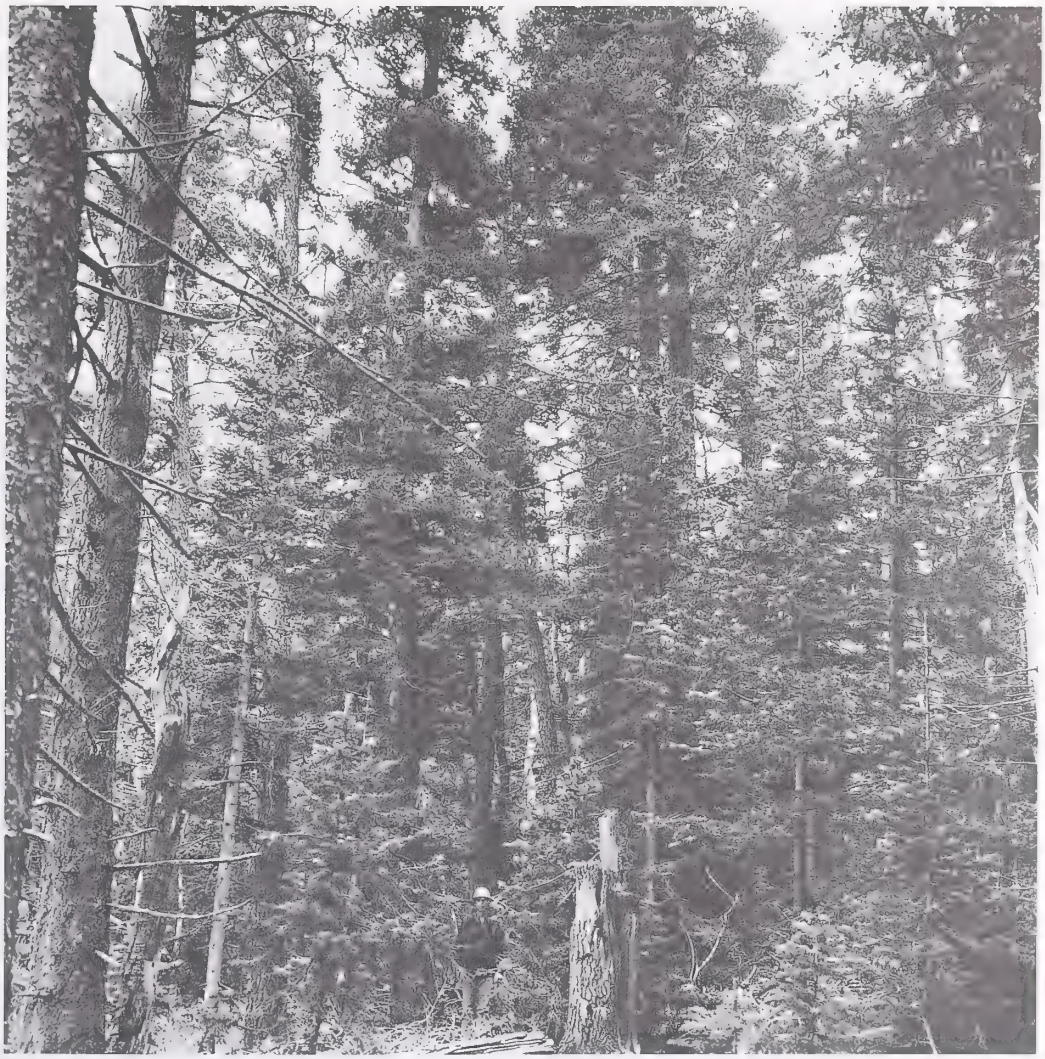


Figure 8—Spruce-fir stand on the Cibola National Forest, NM.

The area of the Douglas-fir type is decreasing, but not as rapidly as other types, especially ponderosa pine. Many existing aspen and ponderosa pine stands have an understory of Douglas-fir and white fir that will eventually replace the overstory unless management practices or fire change the successional trend.

Douglas-fir is suitable for many uses. Timber has been sawed into boards, dimension stock, sheathing, flooring, and railroad ties for many years. Before 1962, Douglas-fir was almost always second to ponderosa pine in volume sawed for lumber. In 1962, however, the 47-million-board-foot cut of Douglas-fir fell behind ponderosa pine and Engelmann spruce. By 1986, it had again become the second most harvested species.

SPRUCE-FIR

Spruce-fir stands, mostly found just below timberline, have a mixture of species. Engelmann spruce (*Picea engelmannii*) is the most important commercial tree, although subalpine fir (*Abies lasiocarpa*) is generally as numerous in the stand (fig. 8). Other species that occur less frequently include corkbark fir (*Abies lasiocarpa* var. *arizonica*), white fir, and Douglas-fir, as well as limber (*Pinus flexilis*) and bristlecone (*Pinus aristata*) pines.

About 70 percent of the 228,000 acres of spruce-fir type is in sawtimber stands (table 5). Although the area of the spruce-fir type is relatively small, it is important for water yield. Since these lands receive more precipitation per acre than any other class of forest, water runoff is high. Recreation values are also significant, particularly for wilderness travel.

WHITE FIR

The white fir forest type covers about 464,000 acres, or 10 percent of New Mexico's timberland. Occurring above 8,000 feet in the south to above 11,000 feet in the north, this type consists of white fir trees growing in association with Douglas-fir, ponderosa pine, and aspen (table 5). In young stands the trees tend to form full crowns and are often harvested for Christmas trees. Mature stands will contain trees in excess of 25 inches diameter at breast height (d.b.h.) and over 100 feet tall (fig. 9).

White fir generally produces poor-quality wood. The trees are highly susceptible to heart rot and windshake. They also tend to shatter easily when felled. The type provides good wildlife habitat, especially seeds for food. Red squirrels cache and eat the seeds. The type is also valuable for watershed protection and esthetics (Healy 1991).

Figure 9—White fir stand at about 9,000 feet elevation, New Mexico.

Figure 10—Mature aspen stand, with ponderosa pine understory, near Los Alamos, NM.

ASPEN

Aspen is the predominant species on 140,000 acres of timberland in the State. Aspen grows almost entirely in single-aged stands, many of which originated after fires within the last 100 years. An understory of mixed conifers is common (fig. 10).

Although little aspen is being harvested now, it is well suited for pulpwood, excelsior, core stock, and lumber for certain uses. Demand could develop in New Mexico as it has elsewhere.

Aspen stands are also important for other resource values. Aspen root sprouts, and forbs and understory vegetation are excellent forage for big game and livestock. On well-managed lands, aspen is considered as satisfactory as conifers for watershed protection. However, it is a better soil builder. Aspen's brilliant autumn foliage is one of the forest's main scenic attractions.

Stand Size

Timberland in New Mexico is dominated by stands of sawtimber-size trees. In all, some 3.9 million acres are in this category (fig. 11; table 5).

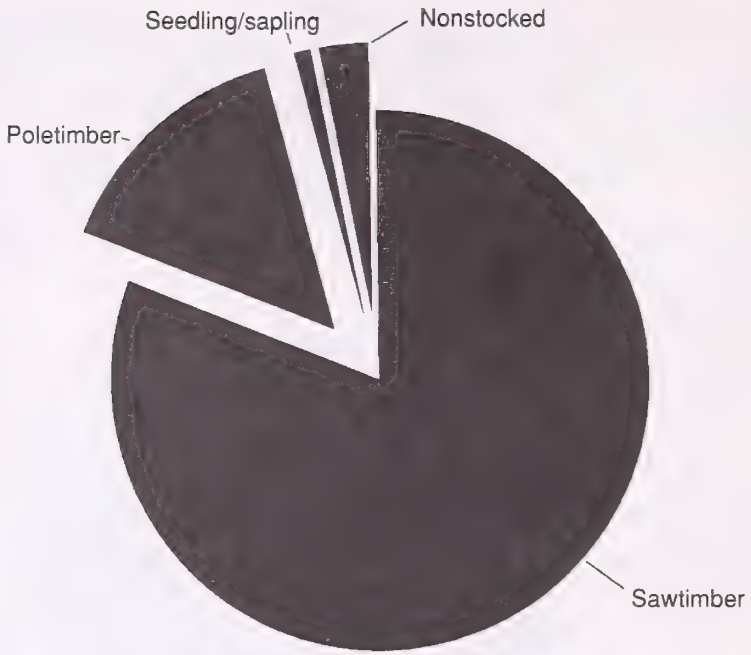


Figure 11—Distribution of timberland area by stand-size class, New Mexico, 1987.

Poletimber-size trees comprise the dominant component on nearly 700,000 acres, with slightly less than 1 percent of the area in seedling/sapling stands. An additional 159,000 acres are considered timberland, but because of recent harvesting are less than 10 percent stocked. The relative distribution of stand-size classes within each ownership closely follows the distribution for all ownerships. Sawtimber stands dominate, followed by poletimber, and so forth.

Productivity Class

New Mexico's timberland is not among the most productive in the West, but certain individual forest types demonstrate relatively high growth potential. About a third of the area has the ability to produce more than 50 cubic feet per acre per year, including 237,000 acres that could produce more than 85 cubic feet per acre per year in stands that totally occupy the available growing space. The majority of the area is much less productive, capable of growing no more than 50 cubic feet per acre per year (table 5).

The ponderosa pine type usually occurs just above the pinyon-juniper type on drier sites that receive limited moisture. This type accounts for more than 60 percent of the timberland in the State, but only 11 percent has an annual productivity potential of 50 cubic feet or more per acre. The more productive types such as spruce, white fir, and aspen, occur on cooler, more moist sites. They account for just 16 percent of the area, but at least two-thirds of these types have a wood-growing potential exceeding 50 cubic feet per acre per year. Some lands have the potential to produce 120 cubic feet per acre per year or more (table 5).

Major forest type	Potential for growing 50+ cubic feet/acre/year
	Percent of type
Douglas-fir	60
Ponderosa pine	11
Spruce-fir	64
White fir	77
Spruce	79
Aspen	65

Stand Volume Per Acre

Since a large proportion of the timbered acres support stands of sawtimber-size trees, fairly high board-foot volumes per acre would be expected (fig. 12). On average, New Mexico's timberland contains 4,835 board feet per acre. The 1,500- to 5,000-board-foot class accounts for nearly half of the timberland area. Sixteen percent of the area contains less than 1,500 board feet per acre, while 10 percent supports stands containing more than 10,000 board feet per acre (table 9).

Within each owner group, the 1,500- to 5,000-board foot per acre category is the dominant classification, but the relative position of the other categories differs for different ownerships (fig. 12). On the National Forests, more area is in the higher volume classes. For example, 43 percent of the timberland on National Forests contains more than 5,000 board feet per acre, and 75 percent of the 10,000+-board-foot-per-acre category is on the National Forests. Nearly 80 percent of the private timberlands supports stands containing less than 5,000 board feet per acre, with only 7 percent having stands containing more than 10,000 board feet per acre (table 9).

Stand Composition

New Mexico's timberlands contain an estimated 1.7 billion trees, nearly all meeting the minimum merchantability standards for growing stock. Altogether, some 1.6 billion—96 percent—are in this classification (table 11). Of those trees not classified as growing stock, one-half are salvable dead. The remainder consists of cull trees. Of those, nearly three-fourths are considered rotten culls (table 12).

Most growing-stock trees are conifers, while just 12 percent are hardwoods, cottonwood and aspen. The dominant conifer is ponderosa pine, accounting for 47 percent of the softwood stand table (fig. 13). The next most abundant conifer is Douglas-fir with 292 million stems or 21 percent of the stand table. White fir accounts for 13 percent of the standing inventory,

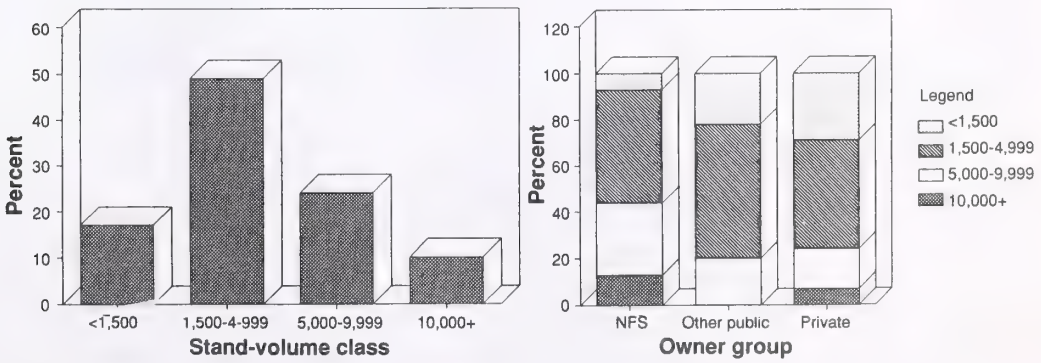


Figure 12—Distribution of timberland area by stand-volume class, and by stand-volume class and owner group, New Mexico, 1987.

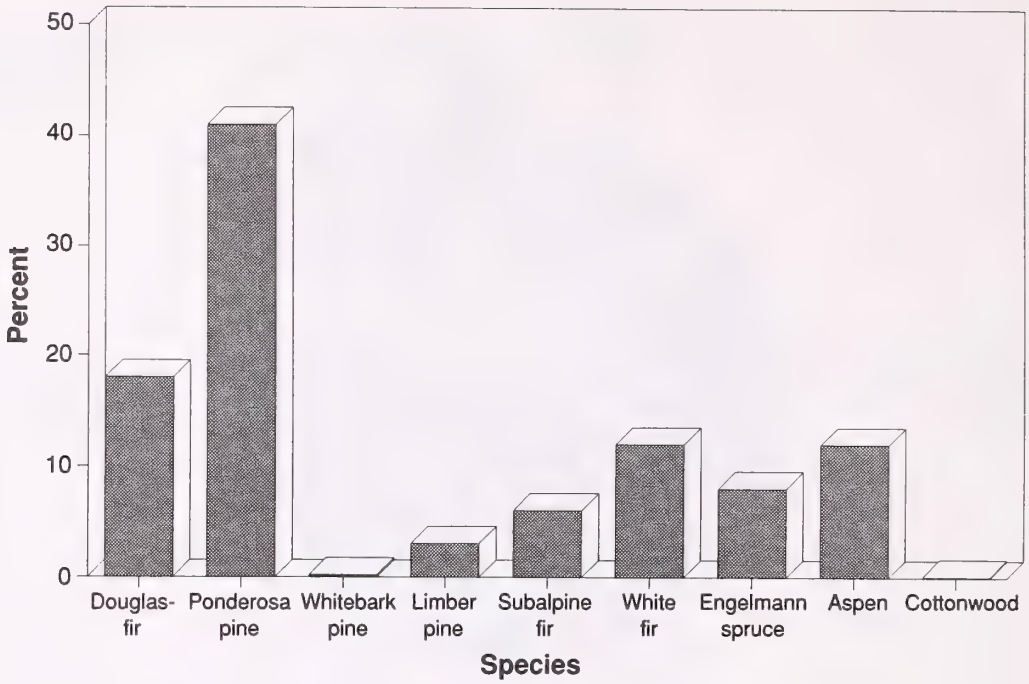


Figure 13—Distribution of growing-stock trees on timberland by species, New Mexico, 1987.

with Engelmann spruce accounting for 9 percent. The remaining 10 percent of the forest is composed of subalpine fir, limber pine, and bristlecone pine (table 11).

Most of New Mexico's timberlands contain significant numbers of sapling-size trees (fig. 14). Fully 55 percent of the softwood inventory and 65 percent of the hardwood stands are in this size class. The proportion of poletimber-size trees is about equal for softwoods and hardwoods, 28 and 31 percent, respectively. Sawtimber-size trees are 17 percent of the softwood stands, while just over 4 percent of the hardwoods are in this size class (table 11).

Generally speaking, stands exhibiting the size class distribution in figure 14 are considered to have a reasonably balanced structure for future development. If this distribution is representative of stands throughout the State, then forest cover will certainly be maintained, if not increased.

Volume

The volume of wood found in trees may be measured in cubic feet, the total volume of wood that could potentially be used, or in board feet, the volume that could potentially be used by a sawmill.

CUBIC VOLUME

New Mexico's timberlands contain 6.2 billion cubic feet of wood volume, with 96 percent in trees meeting growing-stock merchantability standards. Softwood species represent 92 percent, or 5.5 billion cubic feet in trees meeting the merchantability standards. Within the softwood inventory, more than three-fourths of the growing-stock volume is contained within the sawlog portion of sawtimber-size trees. These trees also contain an additional 250 million cubic feet in their upper stem portion. Poletimber-size conifers contain an additional 982 million cubic feet, or 18 percent of the softwood growing-stock inventory (table 22; fig. 15).

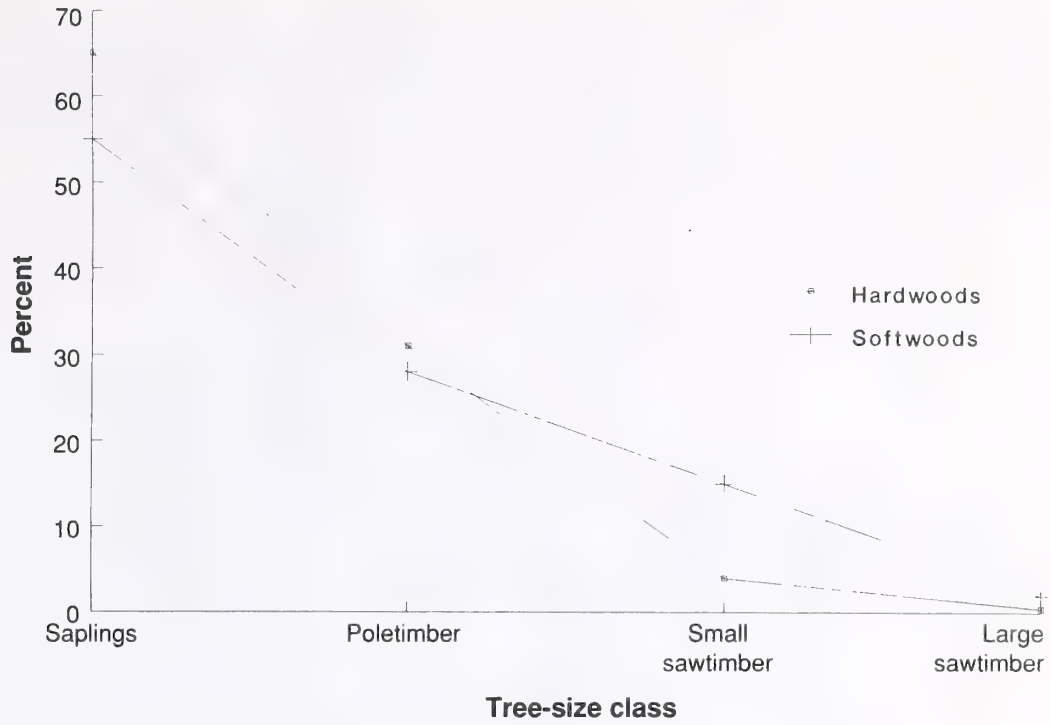


Figure 14—Distribution of growing-stock trees on timberland by tree-size class, New Mexico, 1987.

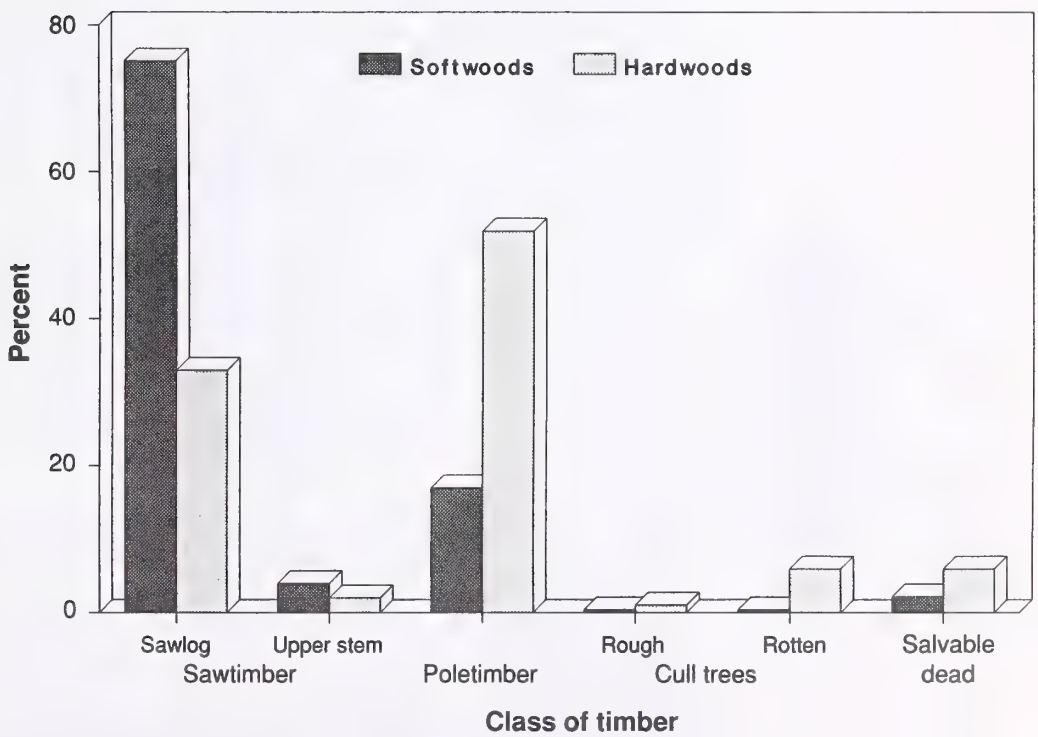


Figure 15—Distribution of cubic-foot volume on timberland by class of timber for softwood and hardwood, New Mexico, 1987.

Of the 172 million cubic feet of softwood volume classified as other than growing stock, nearly three-fourths is salvable dead trees. While the trees have limited utility for the forest products industry, they are preferred by many fuelwood cutters and are valuable for cavity-nesting birds. These trees also are critical for ecosystem functions.

The remaining softwood volume is cull trees, about evenly distributed between rough and rotten trees (table 22). Since cull trees have more than two-thirds of their volume in defective or missing wood, the usable volume represents only one-third of the volume in cull trees. The net volume of 172 million cubic feet of "usable" wood in cull trees could represent a total of nearly a half billion cubic feet. This represents a significant carbon sink. Since increasing levels of atmospheric carbon dioxide could lead to global warming, carbon sinks are gaining attention.

Hardwood species contain 8 percent of the total volume in growing-stock inventory. The majority of the hardwood volume is in poletimber-size trees (fig. 15). Some 280 million cubic feet is contained in this size class. Sawtimber-size trees contain 191 million cubic feet of growing stock, with 94 percent of the volume in the sawlog portion of the bole. Another dissimilarity between the softwood and hardwood inventories is the non-growing-stock component. Thirteen percent of the standing hardwood inventory is non-growing stock, compared to 3 percent for softwood. The distribution of this material differs, with hardwoods having slightly less than half in the salvable dead component and less than 10 percent in rough cull trees (table 22).

The dominant species in terms of volume is ponderosa pine. It accounts for nearly 2.5 billion cubic feet of growing stock, equal to 42 percent of the standing inventory (fig. 16). To put this volume in perspective, it's 10 cubic feet for each man, woman, and child in the United States. Douglas-fir is the next most plentiful species with 1.3 billion cubic feet of volume, or 22 percent of the inventory. Two species—white fir and Engelmann spruce—together account for 22 percent of the inventory. Aspen, the dominant hardwood, accounts for 448 million cubic feet, or 7 percent of the growing-stock volume (table 16).

The distribution of volume by owner group differs somewhat from the distribution of area by owner group (fig. 17). For example, the National Forest System contains 65 percent of the growing-stock volume, but only 56 percent of the timberland area. An inverse relationship exists on private land, which has just 32 percent of the growing-stock volume but accounts for 41 percent of the timbered area. The volume share contained on other public land, 2 percent, is about equal to its area, 3 percent (tables 9 and 16).

The distribution of volume by tree-size class differs considerably between softwoods and hardwoods. Poletimber-size conifers contain 18 percent of the softwood volume, while similar size hardwoods contain 59 percent of the total hardwood growing stock (table 19). Part of this difference can be attributed to the d.b.h. thresholds between poletimber and sawtimber for the species groups. For softwoods, the sawtimber threshold is 9.0 inches; for hardwoods, 11.0 inches. The hardwood poletimber volume summaries include trees from 9.0 to 10.9 inches d.b.h., while the softwood summaries include such trees in sawtimber. This difference only reduces the hardwood poletimber volume by some 20 percent and would result in the hardwood poletimber volume still being 37 percent of the total.

Over half of the softwood growing stock is in small sawtimber, with 30 percent classified as large sawtimber; that is, trees greater than

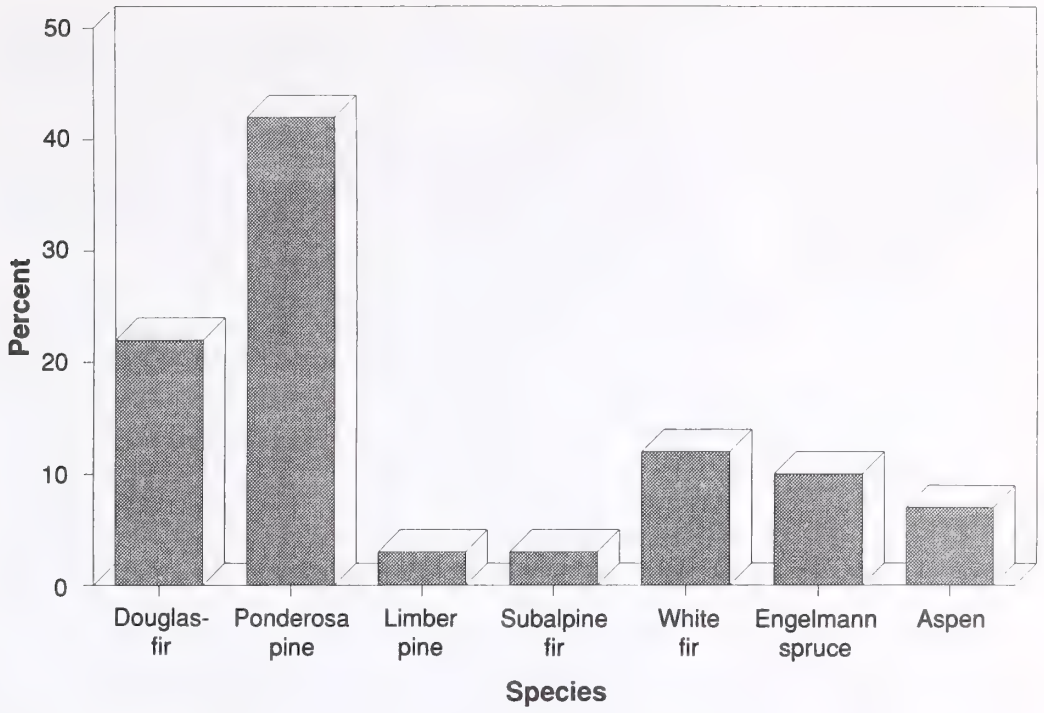


Figure 16—Distribution of growing-stock volume on timberland by species, New Mexico, 1987.

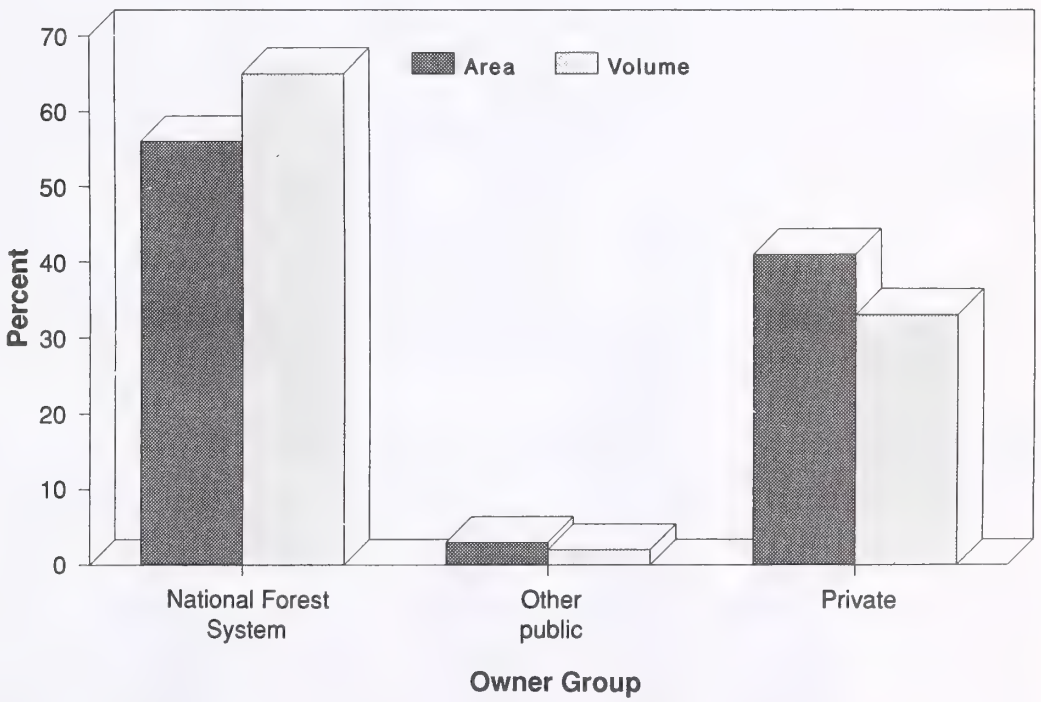


Figure 17—Distribution of timberland area and growing-stock volume on timberland by owner group, New Mexico, 1987.

17.0 inches d.b.h. For hardwoods, 32 percent of the growing-stock volume is in small sawtimber-size trees, with less than 10 percent in large sawtimber-size trees (table 19).

The volume of growing stock within each individual species is similar to that for each species group, except for subalpine fir, which has 31 percent of the volume in poletimber-size trees, 56 percent in small sawtimber-size trees, and only 13 percent in large sawtimber-size trees (table 19).

SAWTIMBER VOLUME

The growing stock on New Mexico's timberland includes some 23 billion board feet (International ¼-inch rule) of sawtimber (table 20). The distribution of this material by species follows that for growing stock, with ponderosa pine being dominant. Douglas-fir, with 23 percent of the total sawtimber volume, is second; white fir and Engelmann spruce rank third and fourth with 11 and 10 percent, respectively. As with growing stock, aspen is the fifth most abundant species, contributing some 951 million board feet—4 percent—to the sawtimber inventory (table 20).

The distribution of sawtimber by ownership also follows that for growing stock. Lands administered by the National Forest System contain 15.2 billion board feet of sawtimber, representing about two-thirds of the standing volume. Other public ownerships account for 473 million board feet, or 2 percent of the inventory. Private owners have more than 7 billion board feet, or 32 percent of all sawtimber in New Mexico (table 17).

The distribution of softwood volume by tree-size class is split about 60:40 between small sawtimber and large sawtimber; for hardwood species the split is about 80:20. Subalpine fir is an exception for softwood, with 80 percent in small sawtimber trees and just 20 percent in trees over 17.0 inches d.b.h. (table 19).

A comparison of the board-foot and cubic-foot volumes in the sawlog portion of growing-stock trees indicates that the overall size of the population may be decreasing. The distribution of trees by size class is skewed to poletimber and small sawtimber-size trees. For example, the current board foot:cubic foot ratio is 5.2, compared to 5.4 in 1962 (Choate 1966)—a 5 percent reduction. A comparison of volume distribution reflects this trend. In 1962, the volume in trees 17.0+ inches d.b.h. approached 60 percent of the inventory, compared to 40 percent in 1987.

Components of Change

To assess forest dynamics, three factors must be examined: the rate at which the forest is growing, the rate at which it is dying, and the rate at which volume is being removed through harvesting.

GROWTH

New Mexico's forests are adding nearly 164 million cubic feet of growing stock annually to the standing inventory, including 702 million board feet of sawtimber. This represents an annual "rate of return" of nearly 3.0 percent in the absence of mortality. In 1986, 13.8 million cubic feet of growing stock was taken from the inventory after dying, leaving a net increase of 150 million cubic feet (tables 26 and 32). Of the sawtimber-size trees, just over 48 million board feet was taken from the inventory after dying, leaving a net gain of 654 million board feet (tables 27 and 33).

On average, this represents an increase of 31.3 cubic feet per acre per year, only two-thirds of the increase New Mexico's timberlands potentially

could produce (tables 5 and 26). This apparent deficit can be partially explained by current stocking levels and stand structure.

Stocking is an expression of the extent to which trees use the site. It is determined by comparing the actual number of trees or their basal area with a specified standard determined by the forest type. Stands are considered fully stocked when an increase in the number of trees per acre does not increase average growth. This condition usually occurs when per-acre stocking is 60 to 80 percent. As stocking increases above 80 percent, growth begins to decline due to overstocking in growing-stock trees, space preempted by cull trees, or conditions adversely affecting growth such as brush or rock outcroppings.

In New Mexico, only about one-fifth of the stands are fully stocked (fig. 18). A small proportion (some 4 percent) is considered overstocked with growing-stock trees. Stands with medium stocking occur on nearly one-third of the timber acres (table 10). Within these stands, a very small proportion contain inhibiting brush or other conditions precluding seedling establishment or exerting an undue competitive influence affecting growth of growing-stock.

The final stocking components, poorly stocked and nonstocked, occur on more than one-fourth of New Mexico's timbered acres (table 10). Poorly stocked stands are those in which growing-stock trees occupy less than 40 percent of the potential growing space, while nonstocked stands contain virtually no trees. These stands present the best opportunity for increasing net annual growth through intensified management.

Thus, based on stocking alone, full potential growth would be nearly impossible to attain. Producing two-thirds of the potential growth attainable when only 1 acre in 5 is fully stocked is relatively good performance.

Stand structure also affects current growth. Overall, 55 percent of the trees in New Mexico are less than 5.0 inches d.b.h. They do not contribute to growth, but do take space, competing with those trees that do contribute.

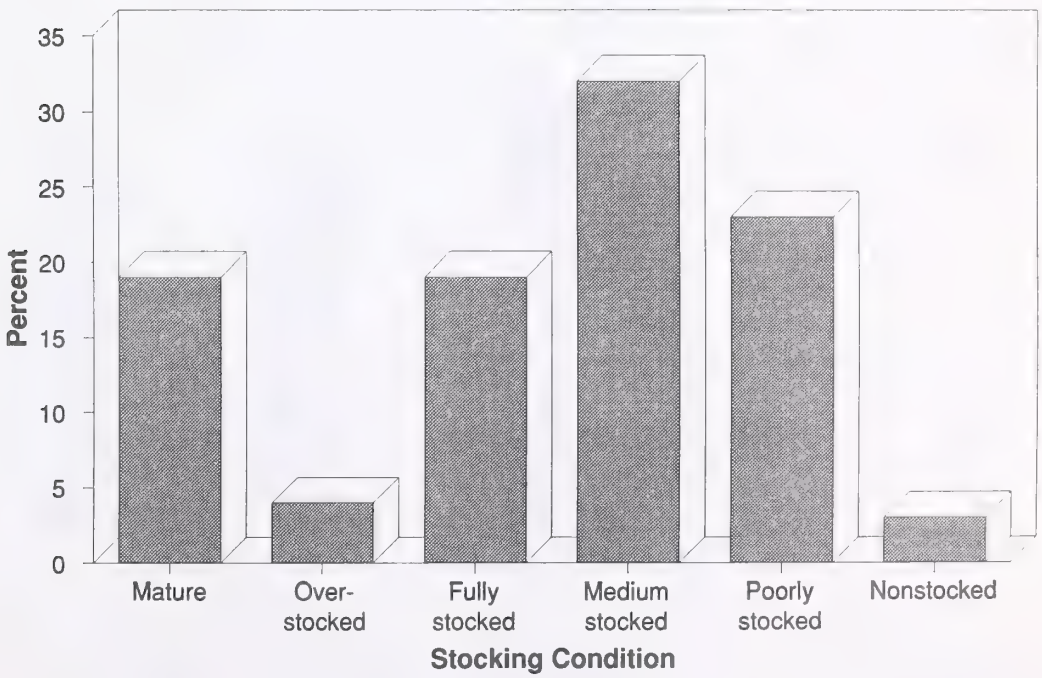


Figure 18—Distribution of timberland area by stocking condition, New Mexico, 1987.

An additional 2 percent of the stands are comprised of large sawtimber trees that are approaching biological maturity and not producing much annual increment. The remainder of the stands are comprised of diameter classes contributing to stand growth. Twenty-eight percent is in poletimber-size trees, and 15 percent is in small sawtimber-size trees (table 11). These trees that comprise less than half of the stand are achieving two-thirds of the growth potential of the timbered acres. One final comment relative to stand structure. Some 1.7 billion trees grow on New Mexico's timberlands with 1.6 billion or 96 percent classified as growing stock. Although, the cull and salvable dead trees occupy growing space and compete with growing stock for water and sunlight, they apparently are not as important in affecting growth as stocking.

National Forest System lands outperform those of the other owners (fig. 19). Seventy-one percent of the potential growth is achieved there, compared to 66 percent for all owners and 58 percent for the private sector (tables 6-8 and 26).

Cottonwood leads net annual growth by species with a rate of 4.0 percent. This is not unexpected, since cottonwood grows on moist sites such as those found along the Rio Grande River. Other good performers are aspen and white fir. Both grow at an annual rate of 2.9 percent. New Mexico's dominant species—ponderosa pine—grows at a respectable rate of 2.5 percent.

MORTALITY

As trees grow, some die. In 1986, trees that died contained 13.8 million cubic feet of growing stock, including 48.3 million board feet of sawtimber (tables 32 and 33). This represents 0.2 percent of the standing inventory and 8.4 percent of gross growth. Destructive agents come in many forms. Several may be active on a single tree. As a result, it is often difficult to determine the exact cause of death. In 1986, some 4.2 million cubic feet of

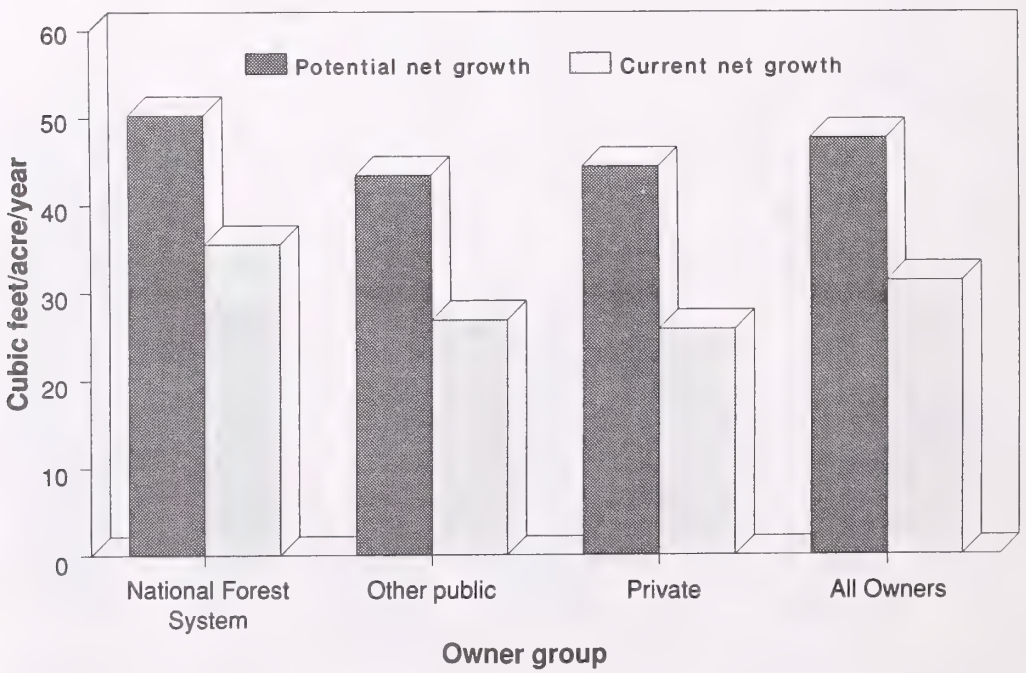


Figure 19—Potential vs. current net growth of growing stock on timberland by owner group, New Mexico, 1986.

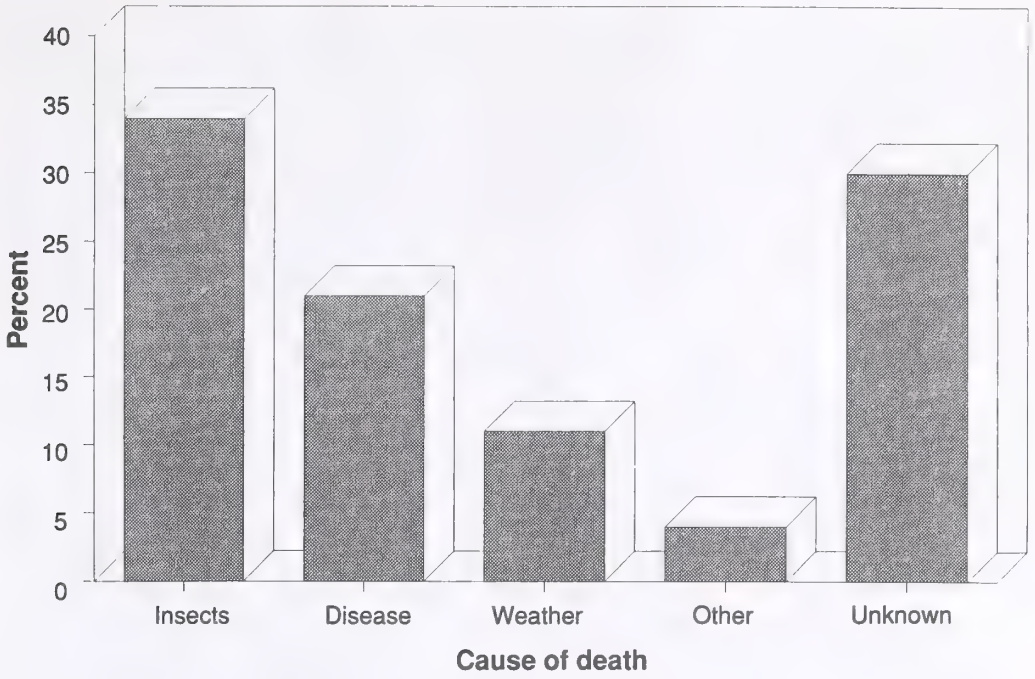


Figure 20—Distribution of growing stock mortality on timberland by cause of death, New Mexico, 1986.

growing stock—30 percent of total mortality—was taken from the inventory due to unknown causes (fig. 20; table 38).

The leading causes of death that could be determined were insects, disease, and weather. Insects alone killed trees containing 4.7 million cubic feet of growing stock; root rots and stem diseases took out an additional 2.8 million cubic feet. Weather, usually wind and lightning, killed trees with 1.5 million cubic feet of growing-stock volume (table 38).

One species—Douglas-fir—was hit particularly hard. Nearly 6.5 million cubic feet of growing stock was killed in 1986. This represents 0.5 percent of the standing inventory of the species and 47 percent of total mortality. Insects were the most significant cause, accounting for more than 60 percent of the mortality. Insect-killed Douglas-fir was the single largest component of mortality in 1986, nearly equaling the volume lost to unknown causes for all species, and exceeding the total volume lost to disease (table 38). Informed sources felt the mortality was due to an outbreak of Douglas-fir beetle (Rogers 1990).

Insects and disease do more than simply kill trees. Insects, such as shoot and tip moths, and diseases, such as dwarf mistletoe, stunt growth and kill young trees. Defoliating insects also reduce growth and kill susceptible trees. As a result it takes longer to produce trees of merchantable size and the stems may be lower quality, making them less useful and desirable forest products.

Some silvicultural techniques are designed to manipulate stands before insects and disease become established. Harvesting larger, older trees is one method to decrease susceptibility to bark beetle. Other techniques include thinnings, and planting resistant species. Chemical controls have been employed with relative success. Because of environmental concerns, chemical controls may well become a technique of the past.

Tree mortality may have positive effects. Foresters sometimes enhance wildlife habitat by producing snags for those birds that glean for their food and for birds that need old, dead trees for nesting cavities.

REMOVALS

The final component of change is removals. It is categorized as growing-stock volume removed as: (1) roundwood harvest for products such as sawlogs, pulpwood, posts, and poles; (2) logging residues; and (3) timber stand improvement and other silvicultural operations, diversion of forest land to nonforest, and land withdrawals for reserved areas such as parks and designated wilderness. Volume estimates for the third category are best generated from remeasurement surveys. This report's inventory data were developed from an initial visit; thus, removals related to diversion of forest land to nonforest or reserved uses will not be included.

Roundwood Harvest—In 1986, 30.1 million cubic feet of growing stock, including 166.2 million board feet of sawtimber, was harvested from New Mexico's timberlands (McLain 1989a). This represents 0.5 percent of the total inventory and 20 percent of net annual growth. Not unexpectedly, the majority of the harvest—92 percent—was in sawlogs (fig. 21). The remainder was made up of posts, poles (corral and utility), round pulpwood, house logs, and excelsior bolts.

Ponderosa pine accounted for more than two-thirds of the harvest volume. Douglas-fir followed with 16 percent of the harvest, with true firs accounting for 9 percent. Without exception, the harvest volume of each species represented less than 1 percent of its standing inventory. The range was 0.8 percent for ponderosa pine to 0.2 percent for Engelmann spruce.

The National Forests in New Mexico were the main supplier of roundwood, supplying more than four-fifths of the harvest volume. The BLM

Figure 21—Sawlogs being harvested from New Mexico forest.

Figure 22—Broken portion of merchantable stem to be bucked out and left in the woods.

contributed a little volume, with the remaining 16 percent (4.7 million cubic feet) coming from privately owned lands.

Nearly 90 percent of the harvest came from six counties, with the remainder coming from eight other counties (McLain 1989a). The production leader was Rio Arriba County with 42 percent of the harvest. Catron and Otero Counties contributed 18 percent and 10 percent of the harvest volume, respectively; Cibola, Sandoval, and San Juan Counties combined for another 18 percent.

Logging Residue—Not all material cut during a roundwood harvesting operation makes it out of the woods. Trees break during felling, with unusable sections cut out and left (fig. 22); some trees are cut with more than a 1-foot stump; and top sections left behind may have large end diameters greater than 4.0 inches diameter outside bark. Moreover, harvesting operations may damage nonproduct growing-stock trees. Even though this material does not make it to a primary wood-processing plant, it is part of the volume removed from the inventory. McLain (1989b) found that for every 1,000 cubic feet of growing stock delivered to the mill, 33 cubic feet were left in the woods as logging residue. In addition, 10 cubic feet of residue were created by damaging nonproduct trees. These volumes must be included in removals to accurately assesss the impact of harvesting on standing inventory. Some material was harvested from salvable dead trees and from nongrowing-stock portions of live trees. This must be "added" back to balance the removals. In 1986, 30.1 million cubic feet of product volume, including 548,000 cubic feet of salvable dead and nongrowing stock, was delivered to primary processing plants. An additional 1.3 million cubic

feet remained in the woods as logging residue. Thus, total removals from growing stock were 31.2 million cubic feet, including 184.6 million board feet (International ¼-inch rule) (tables 44 and 45).

One "product" accounted for, but usually insignificant in terms of total removals, is fuelwood. In 1986, McLain (1989c) found that just over 5,000 cords were harvested (fig. 23).

Taken together, the components of change indicate that New Mexico's timberlands are sustaining themselves (fig. 24). The 1987 standing inventory of 6 billion cubic feet of growing stock is the result of 164 million cubic feet of growth or 2.7 percent, offset by losses of 14 million cubic feet or 0.2 percent to mortality and 31.2 million cubic feet (0.5 percent) to removals. The growing-stock inventory's net annual gain is more than 150 million cubic feet or 2.3 percent.

Figure 23—Fuelwood stacked and ready to use.

WOODLAND

New Mexico has just over 9.0 million acres of woodlands. Only 1.5 percent are in reserved status (table 1).

Area

The other forest in New Mexico is the area dominated by pinyon-juniper (P-J), the oaks, and, to a limited degree, mesquite (*Prosopis* spp.). These types, collectively referred to as woodlands, occupy, more than 8.8 million acres. Nearly 89 percent of the woodlands is in P-J (fig. 25). Areas where junipers occur alone account for nearly 7 percent. Oak stands occupy just over 4 percent. Mesquite attained tree form on about 3,500 acres, primarily in southwestern New Mexico, all on National Forest lands (table 50).

The pinyon-juniper type consists of pinyon, the New Mexico State tree, and one or more of the following juniper species: alligator juniper (*Juniperus*

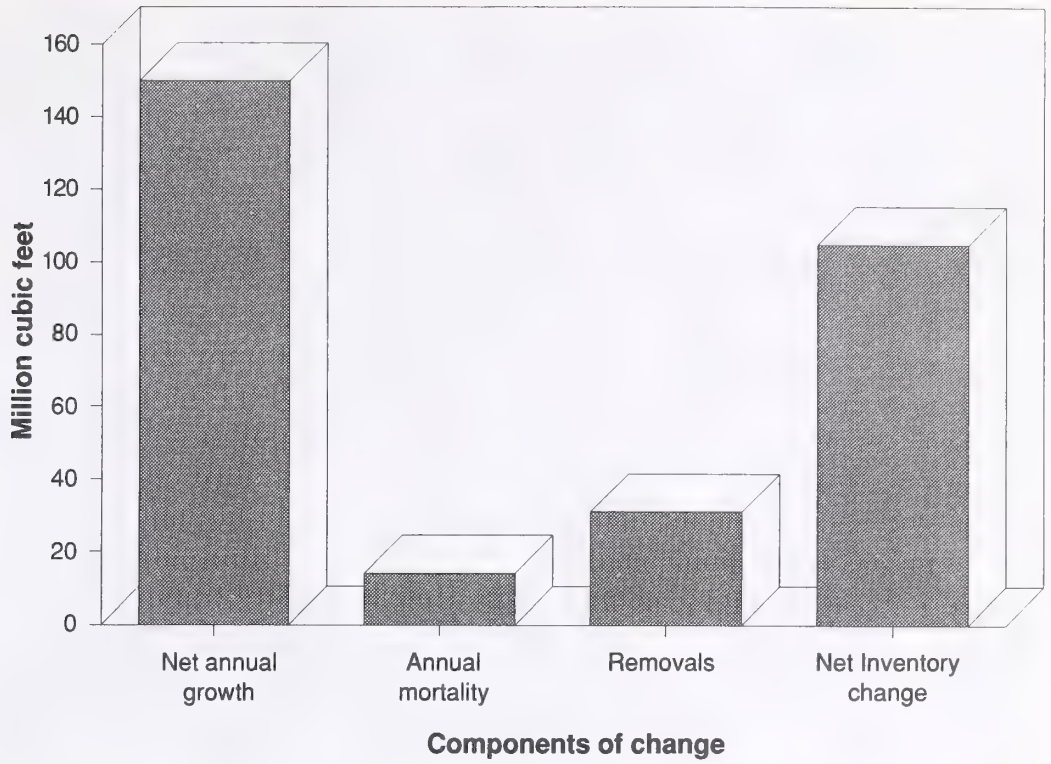


Figure 24—Comparison of components of change and net inventory gain of growing stock on timberland in New Mexico, 1986.

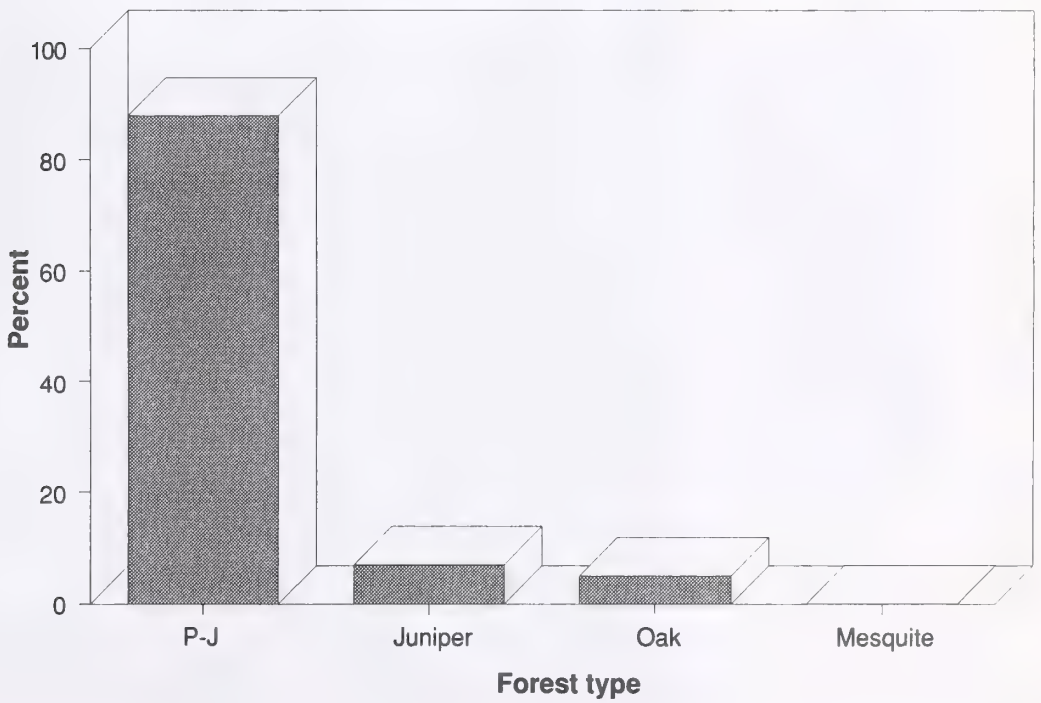


Figure 25—Distribution of woodland area by forest type, New Mexico, 1987.

deppeana), Rocky Mountain juniper (*J. scopulorum*), oneseed juniper (*J. monosperma*), or Utah juniper (*J. osteosperma*). Other tree species that may be found in this type are ponderosa pine, limber pine, and various oaks (*Quercus* spp.) (fig. 26). In the juniper type, one or more of the juniper species dominate the stand.

These types, occupying dry slopes between 4,500 and 8,000 feet, are bordered by and often mixed with ponderosa pine forests at the higher elevations and desert plant communities at the lower elevations. Pinyon-juniper and juniper forests, commonly growing in open conditions, are highly valued for resources such as pinyon nuts, firewood, posts, livestock forage, and seasonal or year-long wildlife habitat.

The oak type is dominated by Gambel oak. Occurring between 5,000 and 8,000 feet elevation, this hardwood community covers 402,000 acres (5 percent) of the State's forest land (table 50). Oak is commonly used for fenceposts and fuelwood (fig. 27).

The distribution of woodland area by owner is almost the reverse of that for timberland (fig. 28). The National Forest System administers 35 percent of woodland. Other public agencies, principally the State and BLM, administer 20 percent, and private owners control 45 percent (table 50).

Woodlands are classified for site productivity and stand volume. Productivity is a measure of how well woodland on the site is able to sustain itself. It is determined by attributes such as soil depth and texture, rockiness,

Figure 26—A typical stand of pinyon-juniper.

Figure 27—A typical Gambel oak stand.

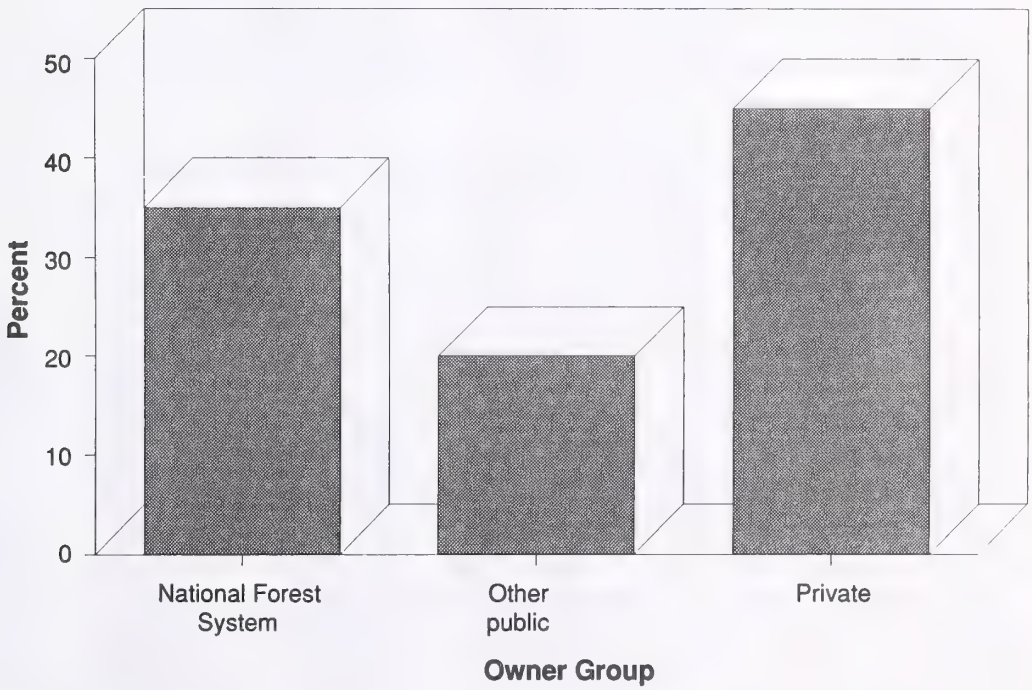


Figure 28—Distribution of woodland area by owner group, New Mexico, 1987.

steepness of slope, and the presence of regeneration. The volume classification could be considered a surrogate for stocking. Sites with low volume per acre could be considered low to nonstocked; those supporting substantial volume could be considered fully stocked.

Fully 86 percent of New Mexico's 8.9 million acres of woodland is in the high productivity class. Pinyon-juniper has 86 percent of its 7.9 million acres in the high productivity category. Four-fifths of the pure juniper type is in the high classification. Pure juniper occurs on the harsher sites, explaining why it is not as likely to be in the high category. Ninety-five percent of the oak and all the mesquite are in the high category (table 51; fig. 29). Oak, which regenerates by sprouting, tends to have adequate regeneration present. Tree-form, mesquite is usually found along draws and washes that have moisture available at least part of the growing season.

Volume

In terms of volume per acre, the State's woodlands and the acres in P-J tend to "gather" at the extremes. About one-third falls in the less than 400-cubic-feet-per-acre category, while an additional one-fourth of State and P-J woodland acres is in stands supporting 1,000 cubic feet or more (table 52). The juniper and mesquite types have most of their acres at the lower end of the volume scale. Juniper, for example, has two-thirds of its area in stands containing less than 400 cubic feet per acre. All of the mesquite stands are in this category. Oak has 28 percent of its area in stands containing less than 200 cubic feet per acre and nearly as much in stands supporting more than 1,000 cubic feet per acre. More than 60 percent of the high-volume stands are found in National Forests while over half of the low volume stands are privately owned.

New Mexico's woodland acres contain 2.6 billion trees. The majority (54 percent) are pinyon (table 53). One-third of the stems are juniper,

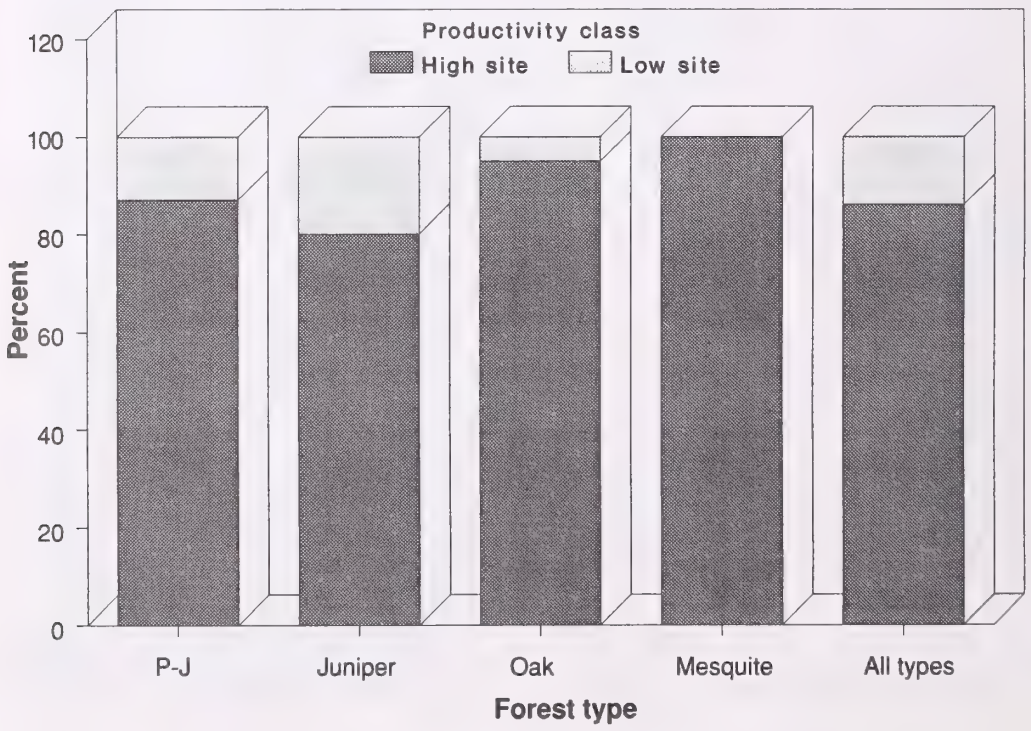


Figure 29—Distribution of woodland area by productivity class within forest type, New Mexico, 1987.

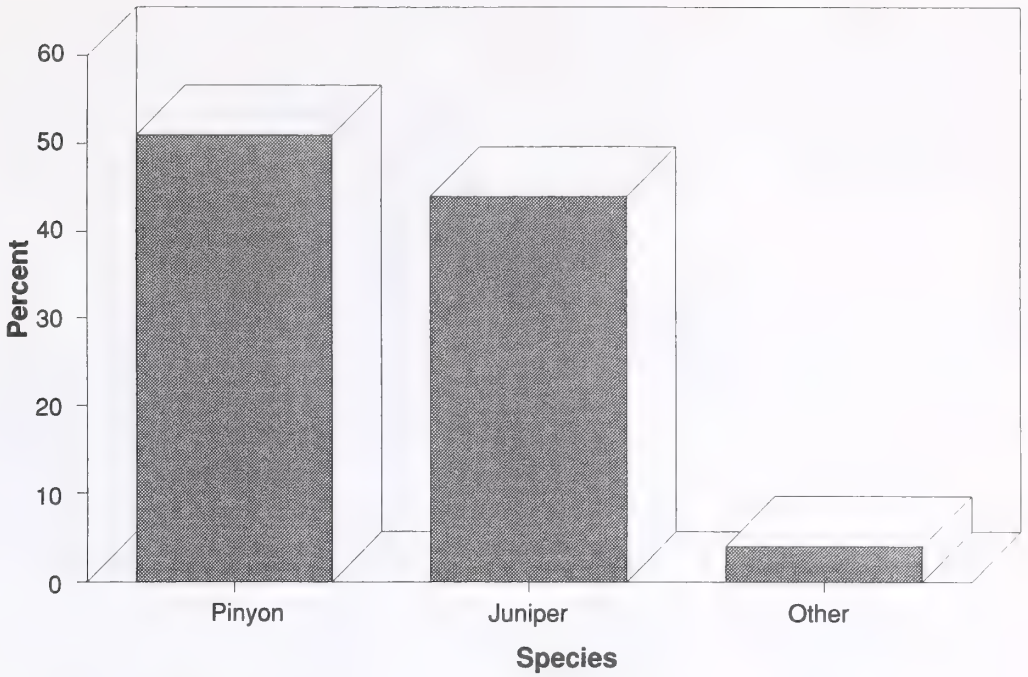


Figure 30—Distribution of cubic volume of woodland species on woodland, New Mexico, 1987.

primarily oneseed. Oaks account for 12 percent of the stems. Gambel oak is dominant, but the oaks include Emory (*Quercus emoryi*) and evergreen or live oak (*Q. turbinella*). Miscellaneous species such as mesquite, walnut (*Juglans major*), and locust (*Robinia neomexicana*) account for the remaining 1 percent.

Thirty percent of all trees on woodland are below 3.0 inches diameter at the root collar (d.r.c.), the threshold for "merchantable" woodland trees (table 53). Nearly 90 percent are less than 11.0 inches d.r.c. The size distribution for the major woodland species—pinyon, juniper, and oak—approximates that of the State as a whole, while most miscellaneous species are less than 3.0 inches d.r.c.

The 8.9 million acres of woodland contains 5.8 billion cubic feet of wood (table 54). Nearly all of the volume is in woodland species; however, in areas where woodland and timberland intermingle, timber species are found in limited numbers on woodland sites. Five timber species have 433 million cubic feet of wood, 7.5 percent of the total woodland volume. Ponderosa pine has 401 million cubic feet, followed by Douglas-fir with 22 million cubic feet. Limber pine, white fir, and cottonwood account for the rest.

The net volume of woodland species on woodland equals 5.3 billion cubic feet, more than half in pinyon (table 55). The junipers account for 2.4 billion cubic feet (44 percent) of the standing volume, with oaks contributing 239 million cubic feet (fig. 30).

Nearly half of the volume is contained in the 8.0- to 14.0-inch d.r.c. classes (fig. 31). Another 12 percent is in the 4.0-inch and 6.0-inch d.r.c. classes, with the remaining 40 percent in trees over 15.0 inches d.r.c. (table 55).

Another significant component of woodland volume is contained in dead trees or dead portions of live trees. Dead material adds 1.4 billion cubic feet to the volume contained on woodland (table 58). It equals 24 percent of the live volume. More than half of this volume is contained in juniper

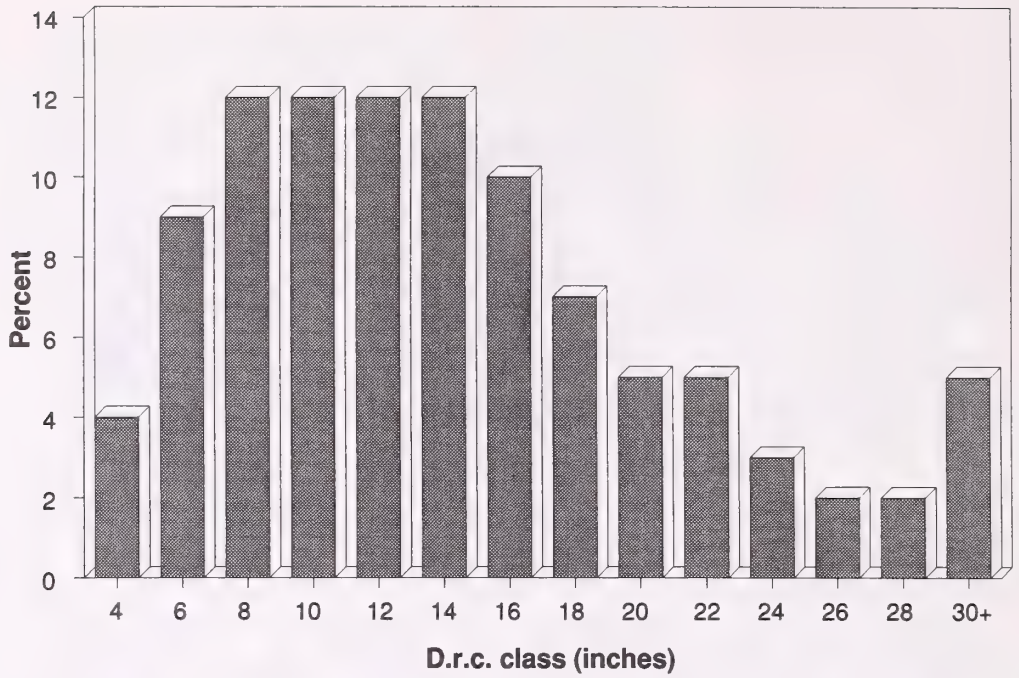


Figure 31—Distribution of cubic volume of woodland species on woodland by d.r.c. class, New Mexico, 1987.

trees, with more than 60 percent in high volume or fully stocked stands. In addition, more than half of the dead material is in stands of pinyon and juniper on the National Forests. The distribution of dead volume by tree-size class parallels that of the live volume component. Most of the dead material is on live trees.

Components of Change

Altogether, the woodland base of 5.3 billion cubic feet is accruing 50 million cubic feet yearly. This is less than 1 percent of the total inventory. It reflects the loss of 2.7 million cubic feet of mortality in the absence of harvest.

Product Potential

Merchantability standards for woodland species are essentially in the mind of the consumer. Thus, all 6.7 billion cubic feet of volume is potentially convertible into a "product" (tables 55 and 58). Woodland trees generally produce four marketable commodities—pinyon nuts, Christmas trees, fenceposts, and fuelwood. Pinyon nut production was beyond the scope of the inventory. Suffice it to say that most of New Mexico's pinyon nuts are consumed by humans, pinyon jays, and other wildlife.

CHRISTMAS TREES

Each pinyon tree tallied on lands outside National Forests was graded for use as a Christmas tree based on its height and form:

Christmas tree grade	Percent of inventory
Premium	0.5
Standard	2.9
Utility	8.8
Total	12.2

Assuming that the percentages apply to pinyon growing in National Forests, New Mexico has significant potential for Christmas tree harvest. Of the 720 million pinyon trees growing on National Forests, 88 million would meet minimum grade criteria, bringing the total potential Christmas trees to 171 million statewide. By grade, the breakdown would be: 7 million premium, 41 million standard, and 123 million utility.

FENCEPOSTS

Similar standards were developed to classify fencepost potential for juniper trees (fig. 32). Assuming fenceposts occur on National Forest lands as frequently as on other lands, the potential fencepost supply is 171 million pieces, with about 60 million pieces meeting minimum standards for the more valuable cornerposts.

FUELWOOD

Pinyon fuelwood is popular in New Mexico, as in other Western States. In 1986, some 33,000 cords were harvested for fuelwood (McLain 1989c). More than 26,000 cords were cut on private lands. Public lands provided 6,600 cords, most from National Forests. Pinyon was the most favored single species, accounting for nearly 17 percent of all fuelwood harvested.

Juniper species are also commonly used for fuelwood in New Mexico. In 1986, nearly 74,000 cords were harvested (McLain 1989c). The combined fuelwood harvest from junipers amounted to more than 37 percent of the total. Nearly three-fourths of the juniper fuelwood was removed from privately owned woodlands, National Forests produced just over one-fourth. A relatively small amount of juniper fuelwood was harvested from BLM lands.

Figure 32—Juniper fenceposts ready for market.

FOREST INDUSTRY

By 1883, northern New Mexico was on the main line of a transcontinental railroad. Numerous lines connected various parts of the State's interior. Construction of the railroads sparked a demand for timbers, ties, and other forest products. The railroads delivered logging and milling machinery to the State, later transporting logs to mills and lumber to local and Plains States markets.

Logging, timber treating, and sawmilling began to expand in about 1880 in the Zuni Mountains, extending to north-central New Mexico and to the mountains east of Alamogordo. The State's lumber industry grew at the end of World War I, declined during the brief depression of 1920-21, expanded in 1929, then went into a tailspin during the Great Depression. The industry found firm footing during World War II. Production decreased after the war, then increased sharply after 1949. Timber production peaked at 51 million cubic feet in 1966, declining until 1986 when production equaled 30 million cubic feet.

The timber products industry in New Mexico has always been modest when viewed on a national scale (Baker and others 1988). The same can be said for all the Rocky Mountain States. New Mexico's 1986 production of 30 million cubic feet is far less than 1986 roundwood harvests for six other States, based on the 1990 RPA data base:

State	Million cubic feet
Maine	440
North Carolina	722
Georgia	1,194
Alabama	943
Arkansas	579
Oregon	1,591

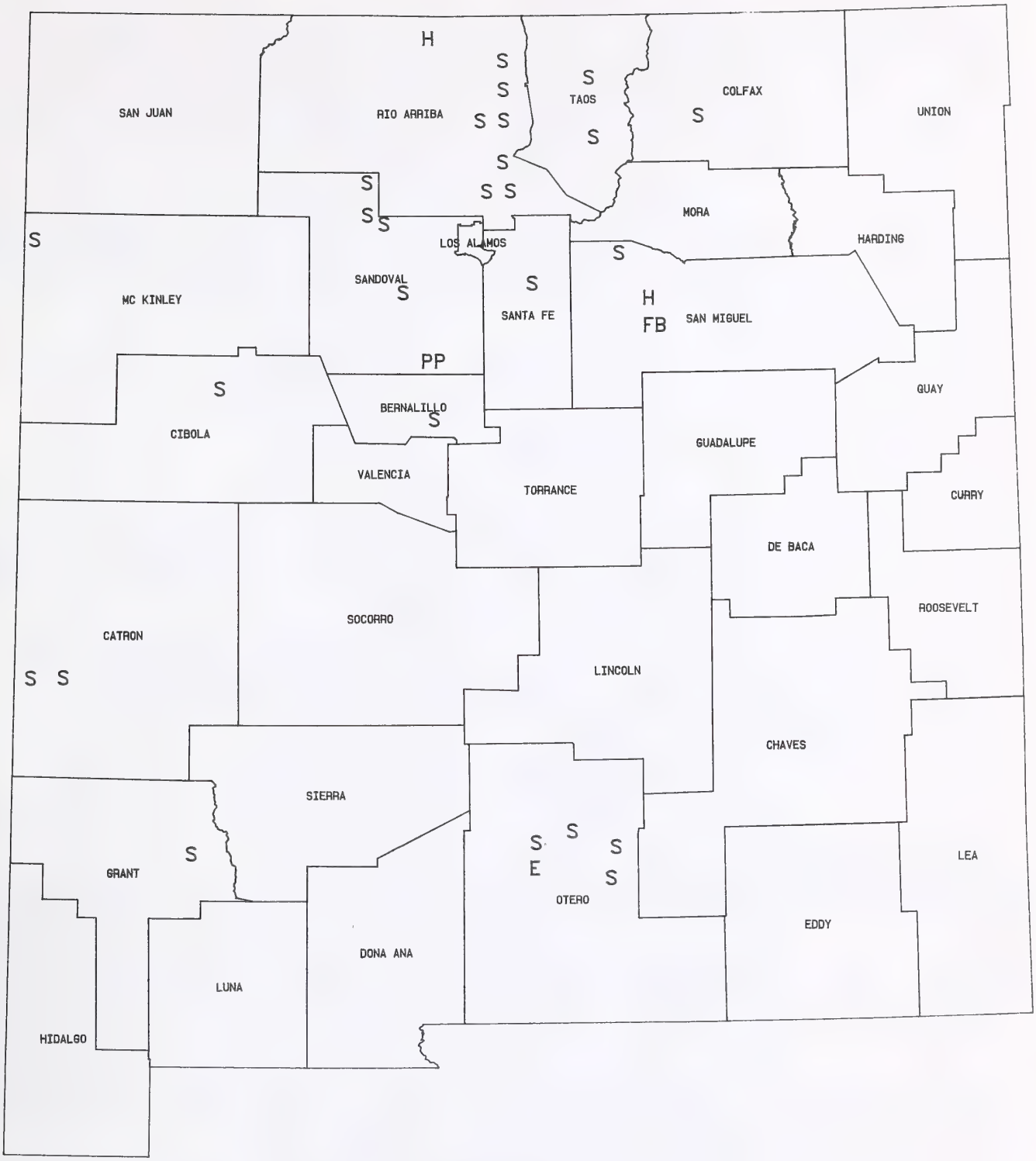
At the local level, lumbering is a substantial business in New Mexico. In 1963, 2,200 people, or one of every seven manufacturing workers, were logging, milling, or otherwise converting trees or logs into products (Choate 1966). The number of jobs in the lumber and wood products sector peaked between 1972 and 1977 at 3,200 per year, or roughly 10 percent of the manufacturing jobs. By 1989, the number had declined to 2,500, or 6 percent of the manufacturing workforce (University of New Mexico).

In 1986, New Mexico had 31 primary wood processing plants. They included 25 sawmills, two house log plants, and one each excelsior plant, fiberboard plant, pole and post treatment plant, and sawmill/post and pole yard. Nineteen of the plants are concentrated in north-central New Mexico (fig. 33).

All the timber harvested in 1986 was processed in the State. No out-of-State material was imported by New Mexico's mills.

UNDERSTORY VEGETATION CONDITIONS

Habitat types and understory vegetation conditions provide more detail on forest land diversity in New Mexico. The inventory included ocular cover estimates of understory plant species with crown canopy cover of at least 5 percent of the plot area on each field location. For each of four life forms—trees, shrubs, forbs, and grasses—cover and heights were assessed.



Legend :
S = Sawmills H = House Logs PP = Post and Poles E = Excelsior FB = Fiber Board

Source : McLain 1989a

Figure 33—Distribution of New Mexico's primary forest industry, 1987.

Much of New Mexico's forest land is, or has been, used for grazing. In fact, pinyon-juniper, oak, and mesquite woodlands are considered range types as well as forest types. The amount and types of understory vegetation on forest land sites can indicate general condition, as well as forage potential and availability. The understory observations were used to compile statistics of herbaceous and shrub cover by overstory canopy cover and owner group, for both timberland and woodland.

Understory vegetation data were sampled by Forest Survey crews on private and other public lands, and for the woodland inventory on the Lincoln National Forest. Although similar data are not available for other National Forest lands in New Mexico, average percent herbaceous cover by the major owner categories indicates a slight difference in condition:

Owner group	Average herbaceous cover	
	Timberland	Woodland
	Percent	
National Forest	—	23
Other public	22	17
Private	25	20

Percent tree cover, taken in classes, was cross-tabulated with average percent herbaceous cover. These data illustrate a pattern well documented in range literature: herbaceous understory cover decreases with increasing overstory cover:

Overstory cover class	Average herbaceous cover	
	Timberland	Woodland
	Percent	
1 (0-9%)	42	42
2 (10-24%)	24	23
3 (25-54%)	25	16
4 (55-84%)	21	17
5 (85-100%)	17	—

Important Species Occurrence

Some interesting statistics about the occurrence of desirable or undesirable plants were obtained from the data. Broom snakeweed (*Gutierrezia sarothrae*) is an undesirable plant, cyclic in nature, that has increased rapidly on southwestern ranges in the last decade (McDaniel and others 1984). This shrub is poisonous to livestock and competes with desirable forage plants on disturbed sites. Broom snakeweed had at least 5 percent crown cover on 13 percent of all woodland, 2 percent of the National Forest woodland plots, 13 percent of the other public woodland plots, and 14 percent of the private woodland plots. Just 2 percent of the timberland plots had at least 5 percent canopy cover of broom snakeweed.

The most common plant species was blue grama (*Bouteloua gracilis*). Blue grama is a good forage species, but when grazed may increase into continuous mats that are not as desirable as a mix of species. This species was well represented (had at least 5 percent crown canopy cover) on 29 percent of all inventory locations and 37 percent of all woodland, 34 percent of other public woodland locations, 40 percent of the private woodland, and 27 percent of the National Forest woodland. Just 5 percent of the timberland was well represented with blue grama.

Two other species are useful for evaluating browse and winter range for big game—especially deer. Mountain-mahogany (*Cercocarpus montanus*) and antelope bitterbrush (*Purshia tridentata*) are highly desirable browse species. Mountain-mahogany was well represented on 4 percent of the timberland plots and 6 percent of the woodland plots. Antelope bitterbrush, limited to the northwestern part of the State, was well represented on only 1 percent of the plots.

Habitat Typing

Forest habitat type classification has proven useful to land managers in areas where such classifications have been developed. In the Southwest, habitat classification for woodlands is in its infancy. Habitat typing provides an ecological basis for categorizing environmental variations and improves prediction accuracy for characteristics such as potential timber and forage production. Climax vegetation serves as a key to the integrated environment, including climate, soil, and landform conditions. Timberland plots were habitat typed according to classification schemes by Alexander and others (1984), DeVelice and others (1986), Alexander and others (1987), and Fitzhugh and others (1987). In presenting the inventory data by habitat types, a different picture of the forest resources in New Mexico can be drawn based on a potential climax community. These habitat types have many silvicultural and other management prescriptions that can be obtained from the sources mentioned above. Table 83 includes a breakdown of the timberland plots by habitat type.

The most common habitat type was *Pinus ponderosa / Quercus gambelii*, occurring on 29 percent of other public and 30 percent of private timberland. According to Larson and Moir (1987), the resource value rating for cattle in this habitat type is moderate in early seral stages, and low to none in late seral stages. This type provides good wildlife hiding cover in summer and can provide good browse production from shrubs other than oak. Oak is an important source of mast for turkeys.

The second most common habitat type was *Pseudotsuga menziesii / Quercus gambelii*, occurring on 13 percent of other public and 17 percent of private timberland. It has resource values similar to those for *Pinus ponderosa / Quercus gambelii*. Ponderosa pine plots are broken down by habitat type in figure 34.

The *Pinus ponderosa / Muhlenbergia montana* and *P. ponderosa / Festuca arizonica* habitat types are valuable for cattle grazing in early successional stages. These types occurred on 4 percent of other public and private land. Resource value ratings for additional habitat types can be obtained from the sources listed above.

Woodland plots were habitat typed by Forest Survey field crews only on the Lincoln National Forest, using the scheme of Larson and Moir (1986). Because these habitat types may be more descriptive of the present conditions than of a potential climax in woodlands, they will be referred to as community types for this report. The remainder of woodland plots were categorized into community types using the Forest Survey data base and guidelines established in the field guides by Larson and Moir (1986, 1987) and by Bassett and others (1987). Table 84 presents the number of Forest Survey woodland plots by community type.

One-third of the woodland plots were impossible to classify because of incomplete information. Of the plots classified, those with oak associations were the most common (36 percent). *Pinus / Quercus* or *Juniperus / Quercus*

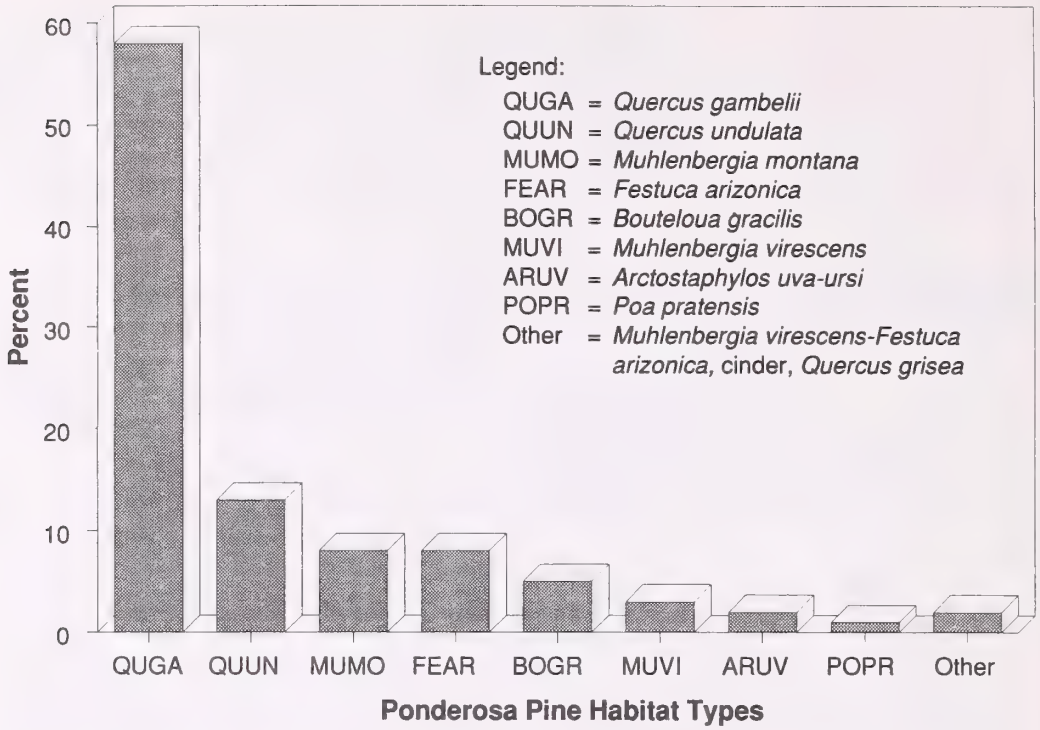


Figure 34—Distribution of ponderosa pine series by habitat type, New Mexico, 1987.

community types have the potential to form closed canopies if they are not harvested or burned. These late seral stages would have low resource value ratings for cattle and for wildlife browse. The *Pinus edulis / Cercocarpus montanus* community type (2 percent of plots) is excellent habitat for wildlife browse and winter range. The *Pinus edulis / Purshia tridentata* community type (1 percent of plots) is important deer and elk winter range. Periodic fire may be necessary to maintain *Purshia tridentata*. The sparse community types (18 percent of plots) are probably derived from woodlands with a history of livestock grazing, and soil erosion, that have not burned. Other resource values are outlined in the field guides mentioned above. Ongoing research will provide more information for classification and interpretation of the woodland resource.

SOIL SURFACE CONDITIONS

A certain amount of bare ground and associated erosion is an integral part of any arid ecosystem. Bare ground increases during drought. Past land-use history, including the removal of plants that hold the soil, has increased the problem of soil erosion. Observations of litter depth, percent bare ground, and degree of soil erosion were made at each field location to assess the general condition and stability of the State's forest soil resource.

About one-half of timberland plots and three-fourths of woodland plots show some evidence of soil erosion (fig. 35).

Degree of erosion	Percent of field locations	
	Timberland	Woodland
None	47	22
Light (very little sheet erosion evident)	48	52
Medium (both sheet and rill erosion evident)	4	20
Heavy (bad rill erosion—gullies evident)	1	6

Some evidence of erosion was found on 63 percent of other public timberland plots, 52 percent of private timberland plots, 76 percent of National Forest woodland plots, 80 percent of other public woodland plots, and 78 percent of private woodland plots.

Seventy-three percent of woodland plots and 36 percent of timberland plots had more than 10 percent bare ground, with an average of 9 percent bare ground on timberland and 22 percent on woodland. The amount of bare ground is consistent across all owners in timberland, but on woodland plots, the average bare ground is 13 percent on National Forests, 25 percent on other public, and 22 percent on private land. Litter—undecomposed leaves, needles, twigs, bark, etc.—was absent from over half of the woodland field locations, but from only 3 percent of timberland locations.

Considerable amounts of bare ground, coupled with the low amounts of protective litter and sparse understory vegetation, indicate potential erosion problems on the forested lands of New Mexico, especially in the woodland. All of these soil erosion indicators substantiate the observations that widespread erosion exists.

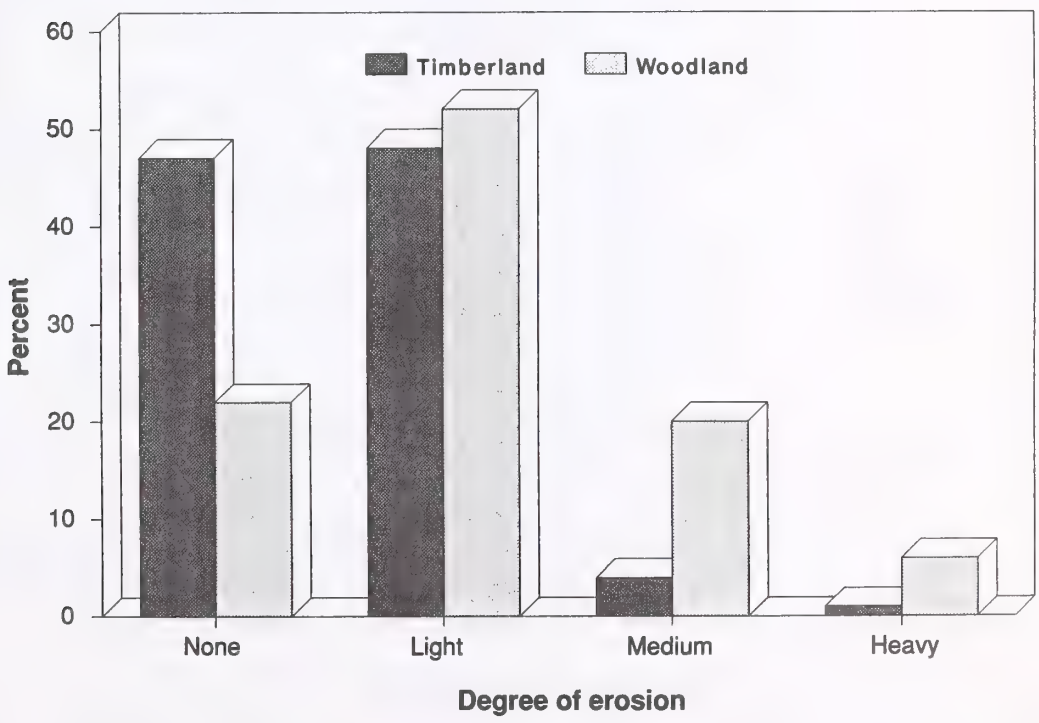


Figure 35—Distribution of erosion by degree and type of plot, New Mexico, 1987.

METHODS

On lands outside the National Forest System the Intermountain Research Station Forest Survey Program uses a two-phase or double sample for stratification for land classification and data collection. The first or map/photo phase consists of a grid of points established at a 1,000-m interval on USGS quadrangle maps where map-based information such as county and congressional districts are assigned. The points are then transferred to aerial photography for interpretation into land cover classes. The second, or field phase consists of field visits to a subset of the first phase photo points. These are usually on a 5,000-m grid.

Some 273,497 first phase points were established in New Mexico (fig. 36a). Of these, 9,747 were potential field plots, and 1,182 were actually forested (fig. 36b). All points determined to be timberland during the map/photo phase were subsampled using the 5,000-m selection rule. Those determined to be woodland were subsampled at the 5,000-m intensity in all units of the State except the northeast. Here a double 10,000-m grid was used, resulting in a spacing of about 7,100 m. The final sample included 322 timberland plots, 860 woodland plots, and 8,565 nonforest plots.

Each timberland field plot consisted of up to five satellite points dispersed systematically over an acre of timberland. At each point, trees 5.0 inches d.b.h. and larger were selected for measurement on a variable radius plot defined by a 20-basal-area-factor (BAF) prism on ponderosa pine locations and a 40-BAF prism for other timberland locations. Trees from 1.0 to 4.9 inches d.b.h. were tallied on a $\frac{1}{300}$-acre fixed-radius subplot. Seedlings were tallied only if no trees greater than 1.0 inch d.b.h. were recorded on a point.

Each woodland plot consisted of a $\frac{1}{20}$-acre, a $\frac{1}{10}$-acre, or a $\frac{1}{5}$-acre fixed radius plot. All trees 3.0 inches d.r.c. and larger were tallied on this plot. Trees 1.0 to 2.9 inches d.r.c. were tallied on up to four $\frac{1}{300}$-acre subplots, and seedlings were tallied only if no trees greater than 1.0 inch d.r.c. were tallied on a subplot.

The tree measurements were used to estimate volume, basal area, number of trees, and other per-acre variables, by applying volume equations developed by Chojnacky (1985), Hann and Bare (1978), and Edminster (1977), and other algorithms developed by the Forest Survey Program. Expansion factors, developed by adjusting the map/photo point information to meet known land areas, were applied to these per-acre estimates to generate population totals. This information was combined with similar information from the Forest Service's Southwest Region Timber Management staff to develop the resource summaries presented in this report.

In addition to the detailed tree measurements, several plot-level variables were recorded on both timberland and woodland field locations. These included indicators of use by humans, wildlife, and domestic animals; indicators of understory vegetative structure and condition; size of the forest condition and its juxtaposition to nonforest areas; and other timber and nontimber items. A more complete discussion of this procedure can be found in Van Hooser and others (1990).

SAMPLING ERROR

The sampling methods were designed to achieve suitable sampling errors for estimates of area and volume at the State level. Sampling error increases

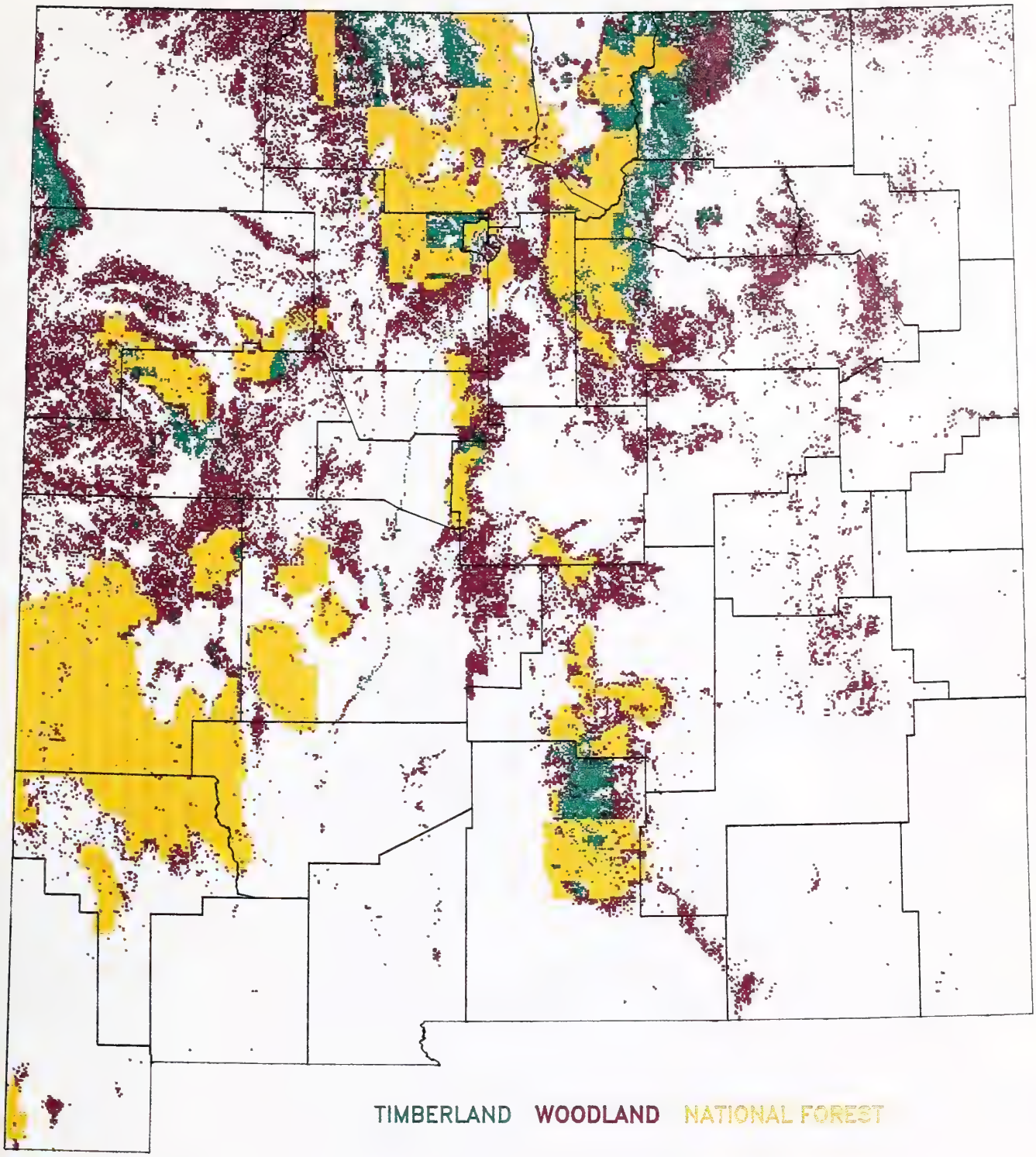


Figure 36—Distribution of Phase I map/photo points and Phase II field sample points, New Mexico, 1987. A. Phase I, 1,000-meter points.

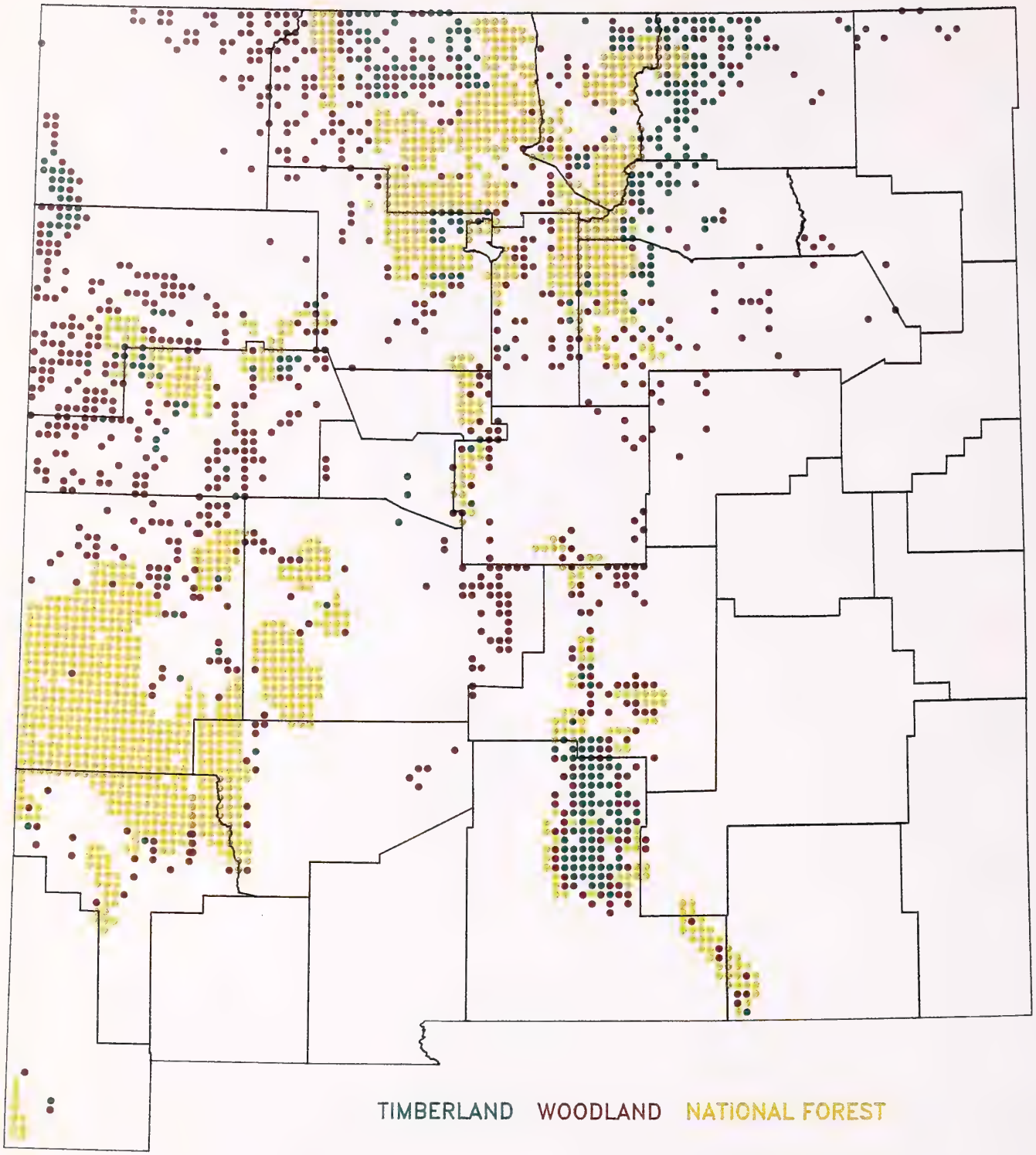


Figure 36—(Con.) B. Phase II, 5,000-meter field points.

as the area or volume considered decreases. The sampling errors presented in tables 2 and 3, equal to one standard deviation for the sample data, may be used to compute confidence intervals for population estimates. For example, at the 95 percent confidence level, the confidence interval for total growing-stock volume (in million cubic feet) is:

$$5{,}992.4 \pm 1.96(0.031 \times 5{,}992.4) = 5{,}992.4 \pm 364.1$$

where 1.96 is the number of standard deviations. This confidence interval indicates a 0.95 probability that the range 5,628.3 to 6,356.5 million cubic feet will cover the true growing-stock inventory volume.

The results are reported for individual items and individual counties so that users may combine them as desired. It is not recommended that individual item or county data be used in isolation. The user should aggregate data cells as much as possible. Sampling error for a combination of data items or counties may be estimated using the following formula:

$$SE_g = \frac{SE_t \sqrt{X_t}}{\sqrt{X_g}}$$

where

SE = standard error of the estimate (expressed as a percent)
X = variable of interest (area or volume)
g = group of counties to be combined
t = total for the State

For example, the estimate of sampling error for growing-stock volume on timberland in Rio Arriba, Sandoval, and Taos Counties is 4.8 percent. The 95 percent confidence interval of growing-stock volume is 2,460.1 ± 231.4 million cubic feet.

TERMINOLOGY

Acceptable trees—Growing-stock trees meeting specified standards of size and quality but not qualifying as desirable trees.

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, or inhibiting vegetation or surface conditions that will prevent occupancy by desirable trees, or both.

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 mature stands.
Class 90—High-risk mature 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 or over 12 feet in height.

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 trees—Live trees that are unmerchantable now or prospectively (see Rough trees and Rotten trees).

Cull volume—Portions of a tree's cubic-foot volume that are not usable for wood products because of rot, missing and/or dead material, or other defect.

Desirable trees—Growing-stock trees (1) having no serious defect in quality to limit present or prospective use for timber products, (2) showing 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 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 lands—Lands owned by a person who operates a farm or a ranch and who either does the work or directly supervises the work.

Fenceposts—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.

Forest industry lands—Lands owned by companies or individuals operating a primary wood-processing plant.

Forest lands—Lands at least 10 percent stocked by forest trees of any size, including lands 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 trees—Woody plants 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 forming a plurality of live-tree stocking.

Gross annual growth—The average annual increase in the net volume of trees.

Growing-stock trees—Live sawtimber trees, poletimber trees, saplings, and 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 trees—Trees that are usually broad-leaved and deciduous.

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

Indian trust lands—Indian lands 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 residues—The unused portions of growing-stock trees cut or killed by logging.

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

Mature stands—Stands of timber species over 100 years old.

Miscellaneous Federal lands—Lands 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 lands—Public lands administered by the U.S. Department of Agriculture, Forest Service.

National Resource lands—Public lands 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 for all woody material above the root collar that is larger than 1.5 inches d.o.b.

Nonforest lands—Lands that do not currently qualify as forest land.

Nonindustrial private—All private ownerships except forest industry.

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

Other private lands—Privately owned lands other than those owned by forest industry or farmer/rancher.

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

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

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

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

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

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

Residues:

Coarse residues—Plant residues suitable for chipping, such as slabs, edgings, and ends.

Fine residues—Plant residues not suitable for chipping, such as sawdust, shavings, and veneer clippings.

Plant residues—Wood materials from primary manufacturing plants not used for any product.

Rotten trees—Live poletimber or sawtimber trees with more than 67 percent of their total volume cull (cubic-foot) and with more than half of the cull volume attributable to rotten or missing material.

Rough trees—Live poletimber or sawtimber trees with more than 67 percent of their 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 trees—Standing or down dead trees that are currently merchantable by regional standards.

Saplings—Live trees 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 stands—Timberland stands 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 stands—Stands 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 trees—Live trees 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.

Seedlings—Established live trees of timber species less than 1 inch d.b.h., or woodland species less than 1 inch d.r.c.

Softwood trees—Coniferous trees that are usually evergreen and have needles 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 classes—A classification of forest land based on the predominant size of trees present (see Sawtimber stands, Poletimber stands, and Sapling and seedling stands).

State, county, and municipal lands—Lands administered by States, counties, and 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 used by present or potential growing-stock trees of timber species.

Timberland—Forest land where timber species make up at least 10 percent stocking. (FSH 4809.11 defines commercial forest land as land producing, or capable of producing, crops of industrial wood and not withdrawn from timber utilization. This is synonymous with the Timberland definition above.)

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 unwanted trees to improve 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 in the Wilderness System, managed so as to preserve its natural conditions and retain its primeval character.

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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Table 1—Total area by ownership class and land class, New Mexico, 1987

Ownership class	Land class											
	Nonreserved				Reserved				Total			
	Timberland	Woodland	Nonforest	Total	Timberland	Woodland	Nonforest	Total	Timberland	Woodland	Nonforest	Total
	Acres											
Land:												
Public:												
National Forest	2,691,508	3,125,286	2,237,888	8,054,682	1,240,722	29,781	—	1,270,503	3,932,230	3,155,067	2,237,888	9,325,185
Other public:												
Bureau of Land Management	48,911	953,693	11,662,257	12,664,861	29,501	33,422	123,205	186,128	78,412	987,115	11,785,462	12,850,989
National Parks[1]	—	—	—	—	9,933	10,668	230,409	251,010	9,933	10,668	230,409	251,010
Miscellaneous Federal	3,533	73,538	3,069,303	3,146,374	7,351	37,939	246,538	291,828	10,884	111,477	3,315,841	3,438,202
State	81,974	707,191	8,730,927	9,520,092	41,627	28,827	91,434	161,888	123,601	736,018	8,822,361	9,681,980
County and municipal	816	1,762	13,716	16,294	—	—	247	247	816	1,762	13,963	16,541
Total other public	135,234	1,736,184	23,476,203	25,347,621	88,412	110,856	691,833	891,101	223,646	1,847,040	24,168,036	26,238,722
Total public	2,826,742	4,861,470	25,714,091	33,402,303	1,329,134	140,637	691,833	2,161,604	4,155,876	5,002,107	26,405,924	35,563,907
Private:												
Indian	630,382	1,408,018	5,797,128	7,835,528	68,104	291	24,515	92,910	698,486	1,408,309	5,821,643	7,928,438
Other private	1,333,675	2,597,249	30,244,395	34,175,319	4,904	4,052	9,382	18,338	1,338,579	2,601,301	30,253,777	34,193,657
Total private	1,964,057	4,005,267	36,041,523	42,010,847	73,008	4,343	33,897	111,248	2,037,065	4,009,610	36,075,420	42,122,095
Total land area	4,790,799	8,866,737	61,755,614	75,413,150	1,402,142	144,980	725,730	2,272,852	6,192,941	9,011,717	62,481,344	77,686,002
Water												133,217
Total land and water[2]	4,790,799	8,866,737	61,755,614	75,413,150	1,402,142	144,980	725,730	2,272,852	6,192,941	9,011,717	62,481,344	77,819,219

[1]These lands are reserved and are included in tables 1, 2, and 4 only.
[2]U.S. Department of Commerce, Bureau of Census, 1980.

Table 2—Area of forest land with percent standard error, New Mexico, 1987

Type of forest land	Acres	Percent standard error
Timberland	4,790,800	±2.4
Woodland	8,866,737	±2.0
Reserved forest land:[1]		
Timberland	1,402,144	
Woodland	144,979	
Total forest land[2]	15,204,660	

[1]Reserved land areas are estimated from aerial photos with field verification; therefore, standard errors are not calculated.
[2]On 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 for all species on forest land, with percent standard error, New Mexico

Forest land	Item	Volume	Percent standard error
Timberland:	Net volume, 1987:		
	Growing stock (M cubic feet)	5,992,384	±3.1
	Sawtimber[1] (M board feet)	23,167,038	±3.1
	Sawtimber[2] (M board feet)	19,222,274	±3.1
	Net annual growth, 1986:		
	Growing stock (M cubic feet)	150,003	±4.7
	Sawtimber[1] (M board feet)	653,843	±4.9
	Sawtimber[2] (M board feet)	539,056	±4.7
	Annual mortality, 1986:		
	Growing stock (M cubic feet)	13,819	±26.5
	Sawtimber[1] (M board feet)	48,390	±22.9
	Sawtimber[2] (M board feet)	39,545	±21.5
Woodland:	Volume, 1987 (M cubic feet)	5,751,376	±3.0
	Growth, 1986 (M cubic feet)	61,069	±4.3
	Mortality, 1986 (M cubic feet)	2,716	±39.8

[1]International ¼-inch rule.
[2]Scribner rule.

Table 4—Area of forest land by forest type, owner group, and land class, New Mexico, 1987

Forest type	Owner group						All owners		
	National Forest		Other public		Private				
	Reserved	Nonreserved	Reserved	Nonreserved	Reserved	Nonreserved	Reserved	Nonreserved	Total
	Acres								
Douglas-fir	—	465,496	24,654	11,735	9,903	364,696	34,557	841,927	876,484
Ponderosa pine	88,258	1,639,548	56,973	86,720	31,947	1,167,073	177,178	2,893,341	3,070,519
Limber pine	—	1,027	—	—	—	—	—	1,027	1,027
Spruce-fir	—	105,444	—	4,249	—	117,937	—	227,630	227,630
White fir	—	309,260	—	22,061	966	132,939	966	464,260	465,226
Spruce	—	97,426	—	4,186	25,844	70,794	25,844	172,406	198,250
Other softwoods	1,152,464	3,492	—	—	—	13,589	1,152,464	17,081	1,169,545
Aspen	—	69,815	2,060	—	4,348	70,410	6,408	140,225	146,633
Cottonwood	—	—	4,727	6,284	—	26,619	4,727	32,903	37,630
Total timberland	1,240,722	2,691,508	88,414	135,235	73,008	1,964,057	1,402,144	4,790,800	6,192,944
Pinyon-juniper	29,781	2,826,672	101,705	1,526,290	—	3,512,189	131,486	7,865,151	7,996,637
Juniper	—	74,571	3,189	186,354	4,342	335,166	7,531	596,091	603,622
Oak	—	220,571	2,262	23,541	—	157,911	2,262	402,023	404,285
Mesquite	—	3,472	—	—	—	—	—	3,472	3,472
Riparian	—	—	3,701	—	—	—	3,701	—	3,701
Total woodland	29,781	3,125,286	110,857	1,736,185	4,342	4,005,266	144,980	8,866,737	9,011,717
Total all types	1,270,503	5,816,794	199,271	1,871,420	77,350	5,969,323	1,547,124	13,657,537	15,204,661

Table 5—Area of timberland by forest type, stand-size class, and productivity class, New Mexico, 1987

Forest type and stand-size class	Productivity class					Total acres
	120-164	85-119	50-84	20-49	0-19	
	Acres					
Douglas-fir:						
Sawtimber	8,502	59,541	370,126	244,669	—	682,838
Poletimber	1,195	—	42,291	69,387	—	112,873
Sapling and seedling	—	—	—	1,108	—	1,108
Nonstocked	—	3,091	16,577	24,865	575	45,108
Total	9,697	62,632	428,994	340,029	575	841,927
Ponderosa pine:						
Sawtimber	—	7,042	233,656	2,156,178	—	2,396,876
Poletimber	—	—	84,105	326,560	—	410,665
Sapling and seedling	—	—	—	12,347	1,296	13,643
Nonstocked	—	—	—	70,911	1,246	72,157
Total	—	7,042	317,761	2,565,996	2,542	2,893,341
Limber pine:						
Sawtimber	—	—	—	1,027	—	1,027
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	—	1,027	—	1,027
Spruce-fir:						
Sawtimber	—	13,267	95,542	48,590	—	157,399
Poletimber	—	—	28,085	25,007	—	53,092
Sapling and seedling	—	—	—	3,327	—	3,327
Nonstocked	—	—	7,949	5,863	—	13,812
Total	—	13,267	131,576	82,787	—	227,630
White fir:						
Sawtimber	7,308	71,620	270,074	94,576	—	443,578
Poletimber	—	1,993	4,238	8,825	—	15,056
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	5,626	—	—	5,626
Total	7,308	73,613	279,938	103,401	—	464,260
Spruce:						
Sawtimber	—	22,861	93,696	14,387	—	130,944
Poletimber	—	14,994	4,186	9,057	—	28,237
Sapling and seedling	—	—	—	7,949	—	7,949
Nonstocked	—	—	—	—	5,276	5,276
Total	—	37,855	97,882	31,393	5,276	172,406
Other softwoods:						
Sawtimber	—	—	6,014	11,067	—	17,081
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	6,014	11,067	—	17,081
Aspen:						
Sawtimber	—	10,878	18,014	8,167	—	37,059
Poletimber	1,812	12,423	39,394	25,772	—	79,401
Sapling and seedling	—	—	6,657	8,271	—	14,928
Nonstocked	—	—	2,469	1,639	4,729	8,837
Total	1,812	23,301	66,534	43,849	4,729	140,225
Cottonwood:						
Sawtimber	—	—	24,954	—	—	24,954
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	7,949	—	—	7,949
Total	—	—	32,903	—	—	32,903
All types:						
Sawtimber	15,810	185,209	1,112,076	2,578,661	—	3,891,756
Poletimber	3,007	29,410	202,299	464,608	—	699,324
Sapling and seedling	—	—	6,657	33,002	1,296	40,955
Nonstocked	—	3,091	40,570	103,278	11,826	158,765
Total	18,817	217,710	1,361,602	3,179,549	13,122	4,790,800

Table 6—Area of National Forest timberland by forest type, stand-size class, and productivity class, New Mexico, 1987

Forest type and stand-size class	Productivity class					Total acres
	120-164	85-119	50-84	20-49	0-19	
			Acres			
Douglas-fir:						
Sawtimber	8,502	53,527	275,743	79,821	—	417,593
Poletimber	1,195	—	13,632	25,211	—	40,038
Sapling and seedling	—	—	—	1,108	—	1,108
Nonstocked	—	3,091	3,091	—	575	6,757
Total	9,697	56,618	292,466	106,140	575	465,496
Ponderosa pine:						
Sawtimber	—	7,042	142,792	1,213,120	—	1,362,954
Poletimber	—	—	84,105	140,275	—	224,380
Sapling and seedling	—	—	—	—	1,296	1,296
Nonstocked	—	—	—	49,672	1,246	50,918
Total	—	7,042	226,897	1,403,067	2,542	1,639,548
Limber pine:						
Sawtimber	—	—	—	1,027	—	1,027
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	—	1,027	—	1,027
Spruce-fir:						
Sawtimber	—	13,267	59,097	18,776	—	91,140
Poletimber	—	—	4,238	876	—	5,114
Sapling and seedling	—	—	—	3,327	—	3,327
Nonstocked	—	—	—	5,863	—	5,863
Total	—	13,267	63,335	28,842	—	105,444
White fir:						
Sawtimber	7,308	50,582	182,783	63,473	—	304,146
Poletimber	—	—	4,238	876	—	5,114
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	7,308	50,582	187,021	64,349	—	309,260
Spruce:						
Sawtimber	—	22,861	54,698	6,438	—	83,997
Poletimber	—	7,045	—	1,108	—	8,153
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	5,276	5,276
Total	—	29,906	54,698	7,546	5,276	97,426
Other softwoods:						
Sawtimber	—	—	—	3,492	—	3,492
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	—	3,492	—	3,492
Aspen:						
Sawtimber	—	2,929	10,065	592	—	13,586
Poletimber	1,812	7,405	25,023	9,874	—	44,114
Sapling and seedling	—	—	1,639	1,639	—	3,278
Nonstocked	—	—	2,469	1,639	4,729	8,837
Total	1,812	10,334	39,196	13,744	4,729	69,815
Cottonwood:						
Sawtimber	—	—	—	—	—	—
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	—	—	—	—
All types:						
Sawtimber	15,810	150,208	725,178	1,386,739	—	2,277,935
Poletimber	3,007	14,450	131,236	178,220	—	326,913
Sapling and seedling	—	—	1,639	6,074	1,296	9,009
Nonstocked	—	3,091	5,560	57,174	11,826	77,651
Total	18,817	167,749	863,613	1,628,207	13,122	2,691,508

Table 7—Area of other publicly owned timberland by forest type, stand-size class, and productivity class, New Mexico, 1987

Forest type and stand-size class	Productivity class					Total acres
	120-164	85-119	50-84	20-49	0-19	
	Acres					
Douglas-fir:						
Sawtimber	—	—	5,603	6,132	—	11,735
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	5,603	6,132	—	11,735
Ponderosa pine:						
Sawtimber	—	—	—	85,779	—	85,779
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	941	—	941
Total	—	—	—	86,720	—	86,720
Limber pine:						
Sawtimber	—	—	—	—	—	—
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	—	—	—	—
Spruce-fir:						
Sawtimber	—	—	—	—	—	—
Poletimber	—	—	—	4,249	—	4,249
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	—	4,249	—	4,249
White fir:						
Sawtimber	—	942	16,870	4,249	—	22,061
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	942	16,870	4,249	—	22,061
Spruce:						
Sawtimber	—	—	—	—	—	—
Poletimber	—	—	4,186	—	—	4,186
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	4,186	—	—	4,186
Other softwoods:						
Sawtimber	—	—	—	—	—	—
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	—	—	—	—
Aspen:						
Sawtimber	—	—	—	—	—	—
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	—	—	—	—
Cottonwood:						
Sawtimber	—	—	6,284	—	—	6,284
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	6,284	—	—	6,284
All types:						
Sawtimber	—	942	28,757	96,160	—	125,859
Poletimber	—	—	4,186	4,249	—	8,435
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	941	—	941
Total	—	942	32,943	101,350	—	135,235

Table 8—Area of privately owned timberland by forest type, stand-size class, and productivity class, New Mexico, 1987

Forest type and stand-size class	Productivity class					Total acres
	120-164	85-119	50-84	20-49	0-19	
			Acres			
Douglas-fir:						
Sawtimber	—	6,014	88,780	158,716	—	253,510
Poletimber	—	—	28,659	44,176	—	72,835
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	13,486	24,865	—	38,351
Total	—	6,014	130,925	227,757	—	364,696
Ponderosa pine:						
Sawtimber	—	—	90,864	857,279	—	948,143
Poletimber	—	—	—	186,285	—	186,285
Sapling and seedling	—	—	—	12,347	—	12,347
Nonstocked	—	—	—	20,298	—	20,298
Total	—	—	90,864	1,076,209	—	1,167,073
Limber pine:						
Sawtimber	—	—	—	—	—	—
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	—	—	—	—
Spruce-fir:						
Sawtimber	—	—	36,445	29,814	—	66,259
Poletimber	—	—	23,847	19,882	—	43,729
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	7,949	—	—	7,949
Total	—	—	68,241	49,696	—	117,937
White fir:						
Sawtimber	—	20,096	70,421	26,854	—	117,371
Poletimber	—	1,993	—	7,949	—	9,942
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	5,626	—	—	5,626
Total	—	22,089	76,047	34,803	—	132,939
Spruce:						
Sawtimber	—	—	38,998	7,949	—	46,947
Poletimber	—	7,949	—	7,949	—	15,898
Sapling and seedling	—	—	—	7,949	—	7,949
Nonstocked	—	—	—	—	—	—
Total	—	7,949	38,998	23,847	—	70,794
Other softwoods:						
Sawtimber	—	—	6,014	7,575	—	13,589
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	—	—	—	—
Total	—	—	6,014	7,575	—	13,589
Aspen:						
Sawtimber	—	7,949	7,949	7,575	—	23,473
Poletimber	—	5,018	14,371	15,898	—	35,287
Sapling and seedling	—	—	5,018	6,632	—	11,650
Nonstocked	—	—	—	—	—	—
Total	—	12,967	27,338	30,105	—	70,410
Cottonwood:						
Sawtimber	—	—	18,670	—	—	18,670
Poletimber	—	—	—	—	—	—
Sapling and seedling	—	—	—	—	—	—
Nonstocked	—	—	7,949	—	—	7,949
Total	—	—	26,619	—	—	26,619
All types:						
Sawtimber	—	34,059	358,141	1,095,762	—	1,487,962
Poletimber	—	14,960	66,877	282,139	—	363,976
Sapling and seedling	—	—	5,018	26,928	—	31,946
Nonstocked	—	—	35,010	45,163	—	80,173
Total	—	49,019	465,046	1,449,992	—	1,964,057

Table 9—Area of timberland by stand volume (International ¼-inch rule) per acre and owner group, New Mexico, 1987

Stand volume per acre	Owner group			Total
	National Forest	Other public	Private	
	Acres			
Less than 1,500 board feet	196,358	29,929	570,266	796,553
1,500 to 4,999 board feet	1,321,413	78,916	931,663	2,331,992
5,000 to 9,999 board feet	820,158	26,390	334,331	1,180,879
10,000 board feet or more	353,579	—	127,797	481,376
Total	2,691,508	135,235	1,964,057	4,790,800

Table 10—Area of timberland by forest type and area condition class, New Mexico, 1987

Forest type	Area condition class									Nonstocked	All classes
	10	20	30	40	50	60	70	80	90		
	Acres										
Douglas-fir	73,311	56,581	126,020	9,568	64,703	110,751	155,453	154,721	45,709	45,108	841,925
Ponderosa pine	105,212	107,205	560,952	—	425,417	397,185	786,769	210,082	228,362	72,157	2,893,341
Limber pine	—	—	—	—	—	—	—	1,027	—	—	1,027
Spruce-fir	8,038	11,312	25,979	8,092	27,831	20,147	12,263	53,779	46,377	13,812	227,630
White fir	71,828	7,824	130,854	16,030	31,343	30,792	58,710	71,449	39,804	5,626	464,260
Spruce	31,772	6,789	11,934	12,135	15,769	15,898	46,075	18,809	7,949	5,276	172,406
Other softwoods	—	3,263	—	—	—	—	6,013	—	7,805	—	17,081
Aspen	26,835	4,937	17,207	6,443	10,036	38,219	19,764	—	7,949	8,837	140,227
Cottonwood	—	—	—	—	—	—	24,954	—	—	7,949	32,903
All types	316,996	197,911	872,946	52,268	575,099	612,992	1,110,001	509,867	383,955	158,765	4,790,800

Table 11—Number of growing-stock trees on timberland by species and diameter class, 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	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 trees															
Douglas-fir	89,656	57,031	56,470	32,355	22,560	13,450	8,196	4,856	3,239	2,049	1,216	507	486	341	356	292,768
Ponderosa pine	192,524	167,122	116,502	72,973	45,029	28,463	18,314	11,128	6,422	3,960	2,292	1,492	798	379	361	667,759
Bristlecone pine	961	886	398	506	339	258	173	53	37	56	51	4	3	(1)	(1)	3,725
Limber pine	15,972	8,300	6,588	4,628	2,718	2,075	1,312	588	446	173	94	123	71	14	21	43,123
Subalpine fir	47,815	23,297	10,793	8,276	3,697	2,775	971	448	208	185	63	34	6	3	7	98,578
White fir	74,822	31,791	33,007	18,566	12,843	8,005	4,890	2,807	1,910	1,199	622	257	141	137	156	191,153
Engelmann spruce	42,777	28,492	20,265	14,359	8,630	7,021	3,131	1,504	1,402	451	258	133	43	78	56	128,600
Other softwoods	—	—	—	—	—	—	—	—	—	5	—	—	—	—	—	5
Total softwoods	464,527	316,919	244,023	151,663	95,816	62,047	36,987	21,384	13,664	8,078	4,596	2,550	1,548	952	957	1,425,711
Aspen	69,011	54,215	34,118	15,742	8,677	3,766	1,974	819	396	151	39	26	1	—	—	188,935
Cottonwood	691	—	—	—	652	218	—	32	75	87	—	27	16	15	—	1,813
Total hardwoods	69,702	54,215	34,118	15,742	9,329	3,984	1,974	851	471	238	39	53	17	15	—	190,748
All species	534,229	371,134	278,141	167,405	105,145	66,031	38,961	22,235	14,135	8,316	4,635	2,603	1,565	967	957	1,616,459

[1]Less than 500 trees.

Table 12—Number of cull and salvable dead trees on timberland by owner group for softwoods and hardwoods, New Mexico, 1987

Owner group and species group	Cull trees			Salvable dead trees	Total
	Rough	Rotten	Total		
	Thousand trees				
National Forest:					
Softwoods	6,825	7,639	14,464	3,420	17,884
Hardwoods	723	11,626	12,349	1,795	14,144
Total	7,548	19,265	26,813	5,215	32,028
Other public:					
Softwoods	—	53	53	910	963
Hardwoods	—	—	—	644	644
Total	—	53	53	1,554	1,607
Private:					
Softwoods	918	601	1,519	15,800	17,319
Hardwoods	426	1,666	2,092	8,295	10,387
Total	1,344	2,267	3,611	24,095	27,706
Total:					
Softwoods	7,743	8,293	16,036	20,130	36,166
Hardwoods	1,149	13,292	14,441	10,734	25,175
Total	8,892	21,585	30,477	30,864	61,341

Volume

Table 13—Net volume of growing stock on timberland by owner group, forest type, and stand-size class, New Mexico, 1987

Owner group	Forest type	Stand-size class				All classes
		Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	
		Thousand cubic feet				
National Forest:	Douglas-fir	953,669	58,927	154	265	1,013,015
	Ponderosa pine	1,379,464	245,391	—	9,631	1,634,486
	Limber pine	2,276	—	—	—	2,276
	Spruce-fir	251,867	3,246	374	764	256,251
	White fir	613,777	6,863	—	—	620,640
	Spruce	227,955	28,678	—	—	256,633
	Other softwoods	5,730	—	—	—	5,730
	Aspen	23,503	97,143	629	614	121,889
	Cottonwood	—	—	—	—	—
	All types	3,458,241	440,248	1,157	11,274	3,910,920
Other public:	Douglas-fir	23,883	—	—	—	23,883
	Ponderosa pine	47,341	—	—	—	47,341
	Limber pine	—	—	—	—	—
	Spruce-fir	—	3,318	—	—	3,318
	White fir	33,342	—	—	—	33,342
	Spruce	—	11,291	—	—	11,291
	Other softwoods	—	—	—	—	—
	Aspen	—	—	—	—	—
	Cottonwood	10,987	—	—	—	10,987
	All types	115,553	14,609	—	—	130,162
Private:	Douglas-fir	307,455	60,110	—	5,671	373,236
	Ponderosa pine	776,423	114,180	254	2,063	892,920
	Limber pine	—	—	—	—	—
	Spruce-fir	98,835	90,393	—	1,674	190,902
	White fir	230,681	3,853	—	1,315	235,849
	Spruce	129,657	19,128	1,369	—	150,154
	Other softwoods	20,981	—	—	—	20,981
	Aspen	40,036	33,217	2,271	—	75,524
	Cottonwood	11,736	—	—	—	11,736
	All types	1,615,804	320,881	3,894	10,723	1,951,302
Total:	Douglas-fir	1,285,007	119,037	154	5,936	1,410,134
	Ponderosa pine	2,203,228	359,571	254	11,694	2,574,747
	Limber pine	2,276	—	—	—	2,276
	Spruce-fir	350,702	96,957	374	2,438	450,471
	White fir	877,800	10,716	—	1,315	889,831
	Spruce	357,612	59,097	1,369	—	418,078
	Other softwoods	26,711	—	—	—	26,711
	Aspen	63,539	130,360	2,900	614	197,413
	Cottonwood	22,723	—	—	—	22,723
	All types	5,189,598	775,738	5,051	21,997	5,992,384

Table 14—Net volume of sawtimber (International ¼-inch rule) on timberland by owner group, forest type, and stand-size class, New Mexico, 1987

Owner group	Forest type	Stand-size class				All classes
		Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	
		Thousand board feet, International ¼-inch rule				
National Forest:	Douglas-fir	3,862,691	144,865	366	1,257	4,009,179
	Ponderosa pine	5,945,433	640,333	—	46,824	6,632,590
	Limber pine	10,066	—	—	—	10,066
	Spruce-fir	988,732	4,698	560	3,438	997,428
	White fir	2,299,341	18,041	—	—	2,317,382
	Spruce	947,851	69,558	—	—	1,017,409
	Other softwoods	18,953	—	—	—	18,953
	Aspen	87,277	162,748	2,209	1,459	253,693
	Cottonwood	—	—	—	—	—
	All types	14,160,344	1,040,243	3,135	52,978	15,256,700
Other public:	Douglas-fir	85,385	—	—	—	85,385
	Ponderosa pine	211,908	—	—	—	211,908
	Limber pine	—	—	—	—	—
	Spruce-fir	—	5,792	—	—	5,792
	White fir	103,637	—	—	—	103,637
	Spruce	—	27,141	—	—	27,141
	Other softwoods	—	—	—	—	—
	Aspen	—	—	—	—	—
	Cottonwood	39,373	—	—	—	39,373
	All types	440,303	32,933	—	—	473,236
Private:	Douglas-fir	1,168,501	89,017	—	30,040	1,287,558
	Ponderosa pine	3,454,489	228,395	1,031	11,192	3,695,107
	Limber pine	—	—	—	—	—
	Spruce-fir	383,714	205,804	—	4,655	594,173
	White fir	956,317	6,842	—	6,024	969,183
	Spruce	514,707	36,971	7,047	—	558,725
	Other softwoods	74,242	—	—	—	74,242
	Aspen	161,690	56,879	—	—	218,569
	Cottonwood	39,545	—	—	—	39,545
	All types	6,753,205	623,908	8,078	51,911	7,437,102
Total:	Douglas-fir	5,116,577	233,882	366	31,297	5,382,122
	Ponderosa pine	9,611,830	868,728	1,031	58,016	10,539,605
	Limber pine	10,066	—	—	—	10,066
	Spruce-fir	1,372,446	216,294	560	8,093	1,597,393
	White fir	3,359,295	24,883	—	6,024	3,390,202
	Spruce	1,462,558	133,670	7,047	—	1,603,275
	Other softwoods	93,195	—	—	—	93,195
	Aspen	248,967	219,627	2,209	1,459	472,262
	Cottonwood	78,918	—	—	—	78,918
	All types	21,353,852	1,697,084	11,213	104,889	23,167,038

Table 15—Net volume of sawtimber (Scribner rule) on timberland by owner group, forest type, and stand-size class, New Mexico, 1987

Owner group	Forest type	Stand-size class				All classes
		Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	
		Thousand board feet, Scribner rule				
National Forest:	Douglas-fir	3,161,795	117,496	299	1,016	3,280,606
	Ponderosa pine	5,025,740	522,579	—	38,990	5,587,309
	Limber pine	8,268	—	—	—	8,268
	Spruce-fir	791,914	3,619	395	2,793	798,721
	White fir	1,921,938	15,124	—	—	1,937,062
	Spruce	771,170	56,101	—	—	827,271
	Other softwoods	15,753	—	—	—	15,753
	Aspen	71,191	129,048	1,753	1,150	203,142
	Cottonwood	—	—	—	—	—
	All types	11,767,769	843,967	2,447	43,949	12,658,132
Other public:	Douglas-fir	67,830	—	—	—	67,830
	Ponderosa pine	177,395	—	—	—	177,395
	Limber pine	—	—	—	—	—
	Spruce-fir	—	4,556	—	—	4,556
	White fir	86,320	—	—	—	86,320
	Spruce	—	21,742	—	—	21,742
	Other softwoods	—	—	—	—	—
	Aspen	—	—	—	—	—
	Cottonwood	33,904	—	—	—	33,904
	All types	365,449	26,298	—	—	391,747
Private:	Douglas-fir	950,103	71,427	—	25,655	1,047,185
	Ponderosa pine	2,918,763	185,965	776	9,794	3,115,298
	Limber pine	—	—	—	—	—
	Spruce-fir	305,185	163,041	—	3,496	471,722
	White fir	798,749	5,863	—	5,123	809,735
	Spruce	415,299	31,216	5,607	—	452,122
	Other softwoods	62,132	—	—	—	62,132
	Aspen	134,133	45,393	—	—	179,526
	Cottonwood	34,675	—	—	—	34,675
	All types	5,619,039	502,905	6,383	44,068	6,172,395
Total:	Douglas-fir	4,179,728	188,923	299	26,671	4,395,621
	Ponderosa pine	8,121,898	708,544	776	48,784	8,880,002
	Limber pine	8,268	—	—	—	8,268
	Spruce-fir	1,097,099	171,216	395	6,289	1,274,999
	White fir	2,807,007	20,987	—	5,123	2,833,117
	Spruce	1,186,469	109,059	5,607	—	1,301,135
	Other softwoods	77,885	—	—	—	77,885
	Aspen	205,324	174,441	1,753	1,150	382,668
	Cottonwood	68,579	—	—	—	68,579
	All types	17,752,257	1,373,170	8,830	88,017	19,222,274

Table 16—Net volume of growing stock on timberland by species and owner group, New Mexico, 1987

Species	Owner group			Total
	National Forest	Other public	Private	
	Thousand cubic feet			
Douglas-fir	952,213	31,303	355,580	1,339,096
Ponderosa pine	1,562,420	47,730	886,627	2,496,777
Bristlecone pine	12,985	—	4,014	16,999
Limber pine	121,997	736	40,875	163,608
Subalpine fir	113,297	389	91,256	204,942
White fir	507,435	23,683	188,323	719,441
Engelmann spruce	347,889	10,624	221,885	580,398
Other softwoods	280	—	—	280
Total softwoods	3,618,516	114,465	1,788,560	5,521,541
Aspen	292,102	4,710	151,006	447,818
Cottonwood	302	10,987	11,736	23,025
Total hardwoods	292,404	15,697	162,742	470,843
All species	3,910,920	130,162	1,951,302	5,992,384

Table 17—Net volume of sawtimber (International ¼-inch rule) on timberland by species and owner group, New Mexico, 1987

Species	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, International ¼-inch rule			
Douglas-fir	3,941,510	107,484	1,338,621	5,387,615
Ponderosa pine	6,725,574	208,881	3,763,579	10,698,034
Bristlecone pine	45,454	—	20,794	66,248
Limber pine	481,565	2,730	138,364	622,659
Subalpine fir	418,936	—	241,827	660,763
White fir	1,684,221	87,692	671,487	2,443,400
Engelmann spruce	1,411,822	27,076	816,449	2,255,347
Other softwoods	1,632	—	—	1,632
Total softwoods	14,710,714	433,863	6,991,121	22,135,698
Aspen	544,593	—	406,436	951,029
Cottonwood	1,393	39,373	39,545	80,311
Total hardwoods	545,986	39,373	445,981	1,031,340
All species	15,256,700	473,236	7,437,102	23,167,038

Table 18—Net volume of sawtimber (Scribner rule) on timberland by species and owner group, New Mexico, 1987

Species	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, Scribner rule			
Douglas-fir	3,174,185	84,658	1,072,622	4,331,465
Ponderosa pine	5,708,990	175,352	3,185,918	9,070,260
Bristlecone pine	37,709	—	18,270	55,979
Limber pine	408,284	2,402	116,606	527,292
Subalpine fir	336,060	—	191,515	527,575
White fir	1,420,729	73,891	572,582	2,067,202
Engelmann spruce	1,138,424	21,540	653,913	1,813,877
Other softwoods	1,452	—	—	1,452
Total softwoods	12,225,833	357,843	5,811,426	18,395,102
Aspen	431,059	—	326,294	757,353
Cottonwood	1,240	33,904	34,675	69,819
Total hardwoods	432,299	33,904	360,969	827,172
All species	12,658,132	391,747	6,172,395	19,222,274

Table 19—Net volume of growing stock on timberland by species and diameter class, 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	92,016	138,907	182,673	176,020	160,979	134,125	118,457	91,865	71,031	35,789	41,299	37,637	58,298	1,339,096
Ponderosa pine	146,902	267,124	318,744	342,594	332,593	293,525	222,272	182,386	126,770	103,560	67,687	39,861	52,758	2,496,776
Bristlecone pine	611	1,970	2,422	2,809	2,717	1,085	1,007	1,627	2,407	166	150	7	21	16,999
Limber pine	11,507	17,979	21,144	26,341	23,651	14,586	15,328	8,050	5,164	8,561	6,550	1,562	3,186	163,609
Subalpine fir	21,171	42,946	34,811	42,425	22,985	14,522	9,056	9,047	3,569	2,540	591	291	988	204,942
White fir	51,302	75,977	98,987	102,634	93,552	74,327	67,594	54,651	34,492	18,282	12,202	12,597	22,844	719,441
Engelmann spruce	39,072	74,962	87,231	110,487	75,253	50,754	64,326	25,227	17,744	11,667	4,064	9,878	9,733	580,398
Other softwoods	—	—	—	—	—	—	—	280	—	—	—	—	—	280
Total softwoods	362,581	619,865	746,012	803,310	711,730	582,924	498,040	373,133	261,177	180,565	132,543	101,833	147,828	5,521,541
Aspen	76,326	98,771	98,363	66,273	49,767	28,827	16,816	7,851	2,612	2,181	32	—	—	447,819
Cottonwood	—	—	6,325	4,750	—	1,280	2,988	3,834	—	1,470	1,219	1,158	—	23,024
Total hardwoods	76,326	98,771	104,688	71,023	49,767	30,107	19,804	11,685	2,612	3,651	1,251	1,158	—	470,843
All species	438,907	718,636	850,700	874,333	761,497	613,031	517,844	384,818	263,789	184,216	133,794	102,991	147,828	5,992,384

Table 20—Net volume of sawtimber (International ¼-inch rule) on timberland by species and diameter class, 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 ¼-inch rule											
Douglas-fir	599,475	755,134	780,863	695,657	640,585	510,922	402,616	205,357	238,649	218,106	340,251	5,387,615
Ponderosa pine	1,078,244	1,553,310	1,724,221	1,638,515	1,289,257	1,088,319	747,918	613,520	404,344	240,038	320,349	10,698,035
Bristlecone pine	7,990	11,703	12,900	5,361	5,109	8,420	12,864	903	832	41	125	66,248
Limber pine	69,542	111,673	111,351	72,262	77,773	41,660	27,401	46,816	36,704	8,884	18,592	622,658
Subalpine fir	126,075	207,552	117,580	74,845	46,532	46,433	18,397	13,299	3,119	1,553	5,378	660,763
White fir	331,939	437,229	418,002	330,628	293,922	228,625	139,751	72,662	48,211	49,784	92,647	2,443,400
Engelmann spruce	323,095	540,399	387,066	263,466	332,970	130,252	91,758	60,691	21,308	52,278	52,064	2,255,347
Other softwoods	—	—	—	—	—	1,632	—	—	—	—	—	1,632
Total softwoods	2,536,360	3,617,000	3,551,983	3,080,734	2,686,148	2,056,263	1,440,705	1,013,248	753,167	570,684	829,406	22,135,698
Aspen	XXXXX[1]	349,948	277,514	162,050	93,366	42,527	13,968	11,490	166	—	—	951,029
Cottonwood	XXXXX	23,817	—	6,299	14,424	18,164	—	6,735	5,572	5,300	—	80,311
Total hardwoods	XXXXX	373,765	277,514	168,349	107,790	60,691	13,968	18,225	5,738	5,300	—	1,031,340
All species	2,536,360	3,990,765	3,829,497	3,249,083	2,793,938	2,116,954	1,454,673	1,031,473	758,905	575,984	829,406	23,167,038

[1]Hardwoods are not considered sawtimber until they are 11 inches d.b.h.

Table 21—Net volume of sawtimber (Scribner rule) on timberland by species and diameter class, New Mexico, 1987

Species	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, Scribner rule											
Douglas-fir	430,403	563,598	611,797	560,466	528,169	428,532	342,367	175,000	204,657	188,837	297,639	4,331,465
Ponderosa pine	824,795	1,231,212	1,435,302	1,408,355	1,133,185	967,123	665,647	546,033	359,866	213,634	285,110	9,070,262
Bristlecone pine	6,102	9,422	10,804	4,583	4,464	7,462	11,449	803	741	37	112	55,979
Limber pine	54,192	90,276	92,926	61,864	67,949	36,912	24,387	41,666	32,667	7,907	16,546	527,292
Subalpine fir	100,979	159,008	93,596	61,015	38,578	38,907	15,535	11,323	2,663	1,330	4,640	527,574
White fir	266,323	348,022	348,593	284,067	258,713	202,765	124,378	64,670	42,908	44,308	82,456	2,067,203
Engelmann spruce	256,184	412,882	307,944	214,527	276,071	109,137	77,524	51,599	18,199	44,850	44,958	1,813,875
Other softwoods	—	—	—	—	—	1,452	—	—	—	—	—	1,452
Total softwoods	1,938,978	2,814,420	2,900,962	2,594,877	2,307,129	1,792,290	1,261,287	891,094	661,701	500,903	731,461	18,395,102
Aspen	XXXXX[1]	267,599	221,279	132,881	77,786	35,946	11,877	9,841	143	—	—	757,352
Cottonwood	XXXXX	19,693	—	5,495	12,796	16,166	—	5,994	4,959	4,717	—	69,820
Total hardwoods	XXXXX	287,292	221,279	138,376	90,582	52,112	11,877	15,835	5,102	4,717	—	827,172
All species	1,938,978	3,101,712	3,122,241	2,733,253	2,397,711	1,844,402	1,273,164	906,929	666,803	505,620	731,461	19,222,274

[1]Hardwoods are not considered sawtimber until they are 11 inches d.b.h.

Table 22—Net volume of timber on timberland by class of timber for softwoods and hardwoods, New Mexico, 1987

Class of timber	Softwoods	Hardwoods	Total
	Thousand cubic feet		
Sawtimber trees:			
Sawlog portion	4,288,746	179,455	4,468,201
Upper-stem portion	250,348	11,602	261,950
Total	4,539,094	191,057	4,730,151
Poletimber trees	982,447	279,786	1,262,233
All growing-stock trees	5,521,541	470,843	5,992,384
Rough cull trees	24,478	3,877	28,355
Rotten cull trees	22,075	32,353	54,428
Salvable dead trees	125,667	34,671	160,338
All timber	5,693,761	541,744	6,235,505

Table 23—Net volume of growing stock on timberland by forest type and species, New Mexico, 1987

Forest type	Species												
	Douglas-fir	Ponderosa pine	Bristlecone pine	Limber pine	Subalpine fir	White fir	Engelmann spruce	Other softwoods	Total softwoods	Aspen	Cotton-wood	Total hardwoods	All species
	Thousand cubic feet												
Douglas-fir	802,731	166,389	1,903	91,372	20,091	174,298	60,213	280	1,317,277	92,857	—	92,857	1,410,134
Ponderosa pine	216,108	2,203,079	3	24,098	199	86,621	10,801	—	2,540,909	33,536	302	33,838	2,574,747
Limber pine	766	—	473	903	3	4	127	—	2,276	—	—	—	2,276
Spruce-fir	26,731	68	12,388	1,151	137,809	3,549	226,116	—	407,812	42,657	—	42,657	450,469
White fir	225,492	123,091	391	30,893	479	412,069	27,005	—	819,420	70,413	—	70,413	889,833
Spruce	55,401	654	919	788	33,309	16,660	246,180	—	353,911	64,167	—	64,167	418,078
Other softwoods	2,008	3,279	—	14,133	1,029	2,057	4,204	—	26,710	—	—	—	26,710
Aspen	9,858	215	923	271	12,023	24,184	5,752	—	53,226	144,188	—	144,188	197,414
Cottonwood	—	—	—	—	—	—	—	—	—	—	22,723	22,723	22,723
All types	1,339,095	2,496,775	17,000	163,609	204,942	719,442	580,398	280	5,521,541	447,818	23,025	470,843	5,992,384

Table 24—Net volume of sawtimber (International ¼-inch rule) on timberland by forest type and species, New Mexico, 1987

Forest type	Species												
	Douglas-fir	Ponderosa pine	Bristlecone pine	Limber pine	Subalpine fir	White fir	Engelmann spruce	Other softwoods	Total softwoods	Aspen	Cotton-wood	Total hardwoods	All species
	Thousand board feet, International ¼-inch rule												
Douglas-fir	3,235,047	746,484	6,731	334,974	63,653	605,129	220,533	1,632	5,214,183	167,940	—	167,940	5,382,123
Ponderosa pine	721,887	9,322,481	—	92,444	768	272,500	43,586	—	10,453,666	84,546	1,393	85,939	10,539,605
Limber pine	3,815	—	1,630	4,010	—	11	600	—	10,066	—	—	—	10,066
Spruce-fir	114,939	413	48,582	5,939	440,309	13,947	870,144	—	1,494,273	103,119	—	103,119	1,597,392
White fir	990,542	613,716	1,802	127,813	1,220	1,417,864	99,588	—	3,252,545	137,657	—	137,657	3,390,202
Spruce	274,680	—	3,019	1,986	102,760	60,701	983,504	—	1,426,650	176,626	—	176,626	1,603,276
Other softwoods	4,978	13,932	—	55,007	—	5,413	13,864	—	93,194	—	—	—	93,194
Aspen	41,727	1,009	4,483	487	52,052	67,835	23,528	—	191,121	281,141	—	281,141	472,262
Cottonwood	—	—	—	—	—	—	—	—	—	—	78,918	78,918	78,918
All types	5,387,615	10,698,035	66,247	622,660	660,762	2,443,400	2,255,347	1,632	22,135,698	951,029	80,311	1,031,340	23,167,038

Table 25—Net volume of sawtimber (Scribner rule) on timberland by forest type and species, New Mexico, 1987

Forest type	Species													All species
	Douglas-fir	Ponderosa pine	Bristlecone pine	Limber pine	Subalpine fir	White fir	Engelmann spruce	Other softwoods	Total softwoods	Aspen	Cotton-wood	Total hardwoods	
	Thousand board feet, Scribner rule													
Douglas-fir	2,594,245	638,465	5,591	283,914	50,188	511,631	176,850	1,452	4,262,336	133,286	—	133,286	4,395,622
Ponderosa pine	575,359	7,892,783	—	77,229	577	229,758	35,614	—	8,811,320	67,440	1,240	68,680	8,880,000
Limber pine	3,013	—	1,412	3,341	—	10	493	—	8,269	—	—	—	8,269
Spruce-fir	89,448	361	41,094	5,177	349,814	11,751	694,452	—	1,192,097	82,902	—	82,902	1,274,999
White fir	808,237	525,502	1,550	109,047	1,045	1,198,768	80,699	—	2,724,848	108,267	—	108,267	2,833,115
Spruce	224,357	—	2,467	1,586	83,682	52,559	795,695	—	1,160,346	140,790	—	140,790	1,301,136
Other softwoods	3,553	12,300	—	46,603	—	4,519	10,911	—	77,886	—	—	—	77,886
Aspen	33,252	849	3,866	397	42,269	58,206	19,161	—	158,000	224,668	—	224,668	382,668
Cottonwood	—	—	—	—	—	—	—	—	—	—	68,579	68,579	68,579
All types	4,331,464	9,070,260	55,980	527,294	527,575	2,067,202	1,813,875	1,452	18,395,102	757,353	69,819	827,172	19,222,274

Table 26—Net annual growth of growing stock on timberland by species and owner group, New Mexico, 1986

Species	Owner group			Total
	National Forest	Other public	Private	
	Thousand cubic feet			
Douglas-fir	23,439	917	5,703	30,059
Ponderosa pine	36,021	1,300	24,523	61,844
Bristlecone pine	172	—	43	215
Limber pine	2,725	24	828	3,577
Subalpine fir	2,606	23	2,448	5,077
White fir	14,155	541	5,833	20,529
Engelmann spruce	7,967	324	6,504	14,795
Other softwoods	4	—	—	4
Total softwoods	87,089	3,129	45,882	136,100
Aspen	8,345	89	4,546	12,980
Cottonwood	5	424	494	923
Total hardwoods	8,350	513	5,040	13,903
All species	95,439	3,642	50,922	150,003

Table 27—Net annual growth of sawtimber (International ¼-inch rule) on timberland by species and owner group, New Mexico, 1986

Species	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, International ¼-inch rule			
Douglas-fir	100,663	1,597	24,792	127,052
Ponderosa pine	166,690	15,787	119,203	301,680
Bristlecone pine	667	—	252	919
Limber pine	11,078	56	4,848	15,982
Subalpine fir	11,394	—	4,012	15,406
White fir	48,161	3,931	35,540	87,632
Engelmann spruce	33,152	700	23,603	57,455
Other softwoods	25	—	—	25
Total softwoods	371,830	22,071	212,250	606,151
Aspen	33,680	—	11,459	45,139
Cottonwood	22	1,246	1,285	2,553
Total hardwoods	33,702	1,246	12,744	47,692
All species	405,532	23,317	224,994	653,843

Table 28—Net annual growth of sawtimber (Scribner rule) on timberland by species and owner group, New Mexico, 1986

Species	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, Scribner rule			
Douglas-fir	80,821	1,370	20,336	102,527
Ponderosa pine	137,800	11,083	97,832	246,715
Bristlecone pine	583	—	226	809
Limber pine	9,158	50	3,711	12,919
Subalpine fir	9,670	—	3,491	13,161
White fir	41,596	3,505	31,603	76,704
Engelmann spruce	28,114	581	20,157	48,852
Other softwoods	22	—	—	22
Total softwoods	307,764	16,589	177,356	501,709
Aspen	25,963	—	9,102	35,065
Cottonwood	20	1,094	1,168	2,282
Total hardwoods	25,983	1,094	10,270	37,347
All species	333,747	17,683	187,626	539,056

Table 29—Net annual growth of growing stock on timberland by species and diameter class, New Mexico, 1986

Species	Diameter class (inches at breast height) 5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand cubic feet													
Douglas-fir	7,732	4,751	5,128	3,416	2,705	2,369	1,459	967	828	-26	120	307	305	30,061
Ponderosa pine	14,260	10,834	10,546	7,918	6,090	4,349	2,863	1,788	1,266	969	456	258	247	61,844
Bristlecone pine	16	30	34	51	33	9	8	12	21	1	1	([1])	([1])	216
Limber pine	960	554	487	481	398	234	189	82	50	100	51	17	-27	3,576
Subalpine fir	1,617	1,160	868	658	327	142	112	123	33	23	5	1	6	5,075
White fir	5,040	3,249	3,258	2,894	2,241	1,121	1,219	687	322	200	26	116	155	20,528
Engelmann spruce	4,268	2,426	2,006	2,615	1,443	708	819	281	136	44	-27	75	1	14,795
Other softwoods	—	—	—	—	—	—	—	4	—	—	—	—	—	4
Total softwoods	33,893	23,004	22,327	18,033	13,237	8,932	6,669	3,944	2,656	1,311	632	774	687	136,099
Aspen	6,835	2,528	1,949	801	746	216	147	38	-304	25	([1])	—	—	12,981
Cottonwood	—	—	372	155	—	29	135	142	—	44	18	28	—	923
Total hardwoods	6,835	2,528	2,321	956	746	245	282	180	-304	69	18	28	—	13,904
All species	40,728	25,532	24,648	18,989	13,983	9,177	6,951	4,124	2,352	1,380	650	802	687	150,003

[1]Less than 500 cubic feet.

Table 30—Net annual growth of sawtimber (International 1/4-inch rule) on timberland by species and diameter class, New Mexico, 1986

Species	Diameter class (inches at breast height) 9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, International 1/4-inch rule											
Douglas-fir	49,189	22,063	17,177	14,237	8,990	6,058	5,024	-46	738	1,801	1,821	127,052
Ponderosa pine	130,475	51,574	40,061	28,910	18,901	11,859	7,879	5,962	2,853	1,625	1,582	301,681
Bristlecone pine	140	293	190	47	43	69	128	4	5	([1])	([1])	919
Limber pine	6,937	2,786	2,307	1,278	1,024	465	303	613	314	101	–147	15,981
Subalpine fir	7,281	4,036	1,779	733	573	634	175	127	29	4	36	15,407
White fir	47,494	14,601	10,567	4,767	4,705	2,441	1,067	749	114	479	647	87,631
Engelmann spruce	23,971	15,079	7,828	3,688	4,185	1,444	719	247	-135	414	14	57,454
Other softwoods	—	—	—	—	—	25	—	—	—	--	—	25
Total softwoods	265,487	110,432	79,909	53,660	38,421	22,995	15,295	7,656	3,918	4,424	3,953	606,150
Aspen	XXXXX[2]	40,148	4,501	1,157	681	171	-1,646	126	2	—	—	45,140
Cottonwood	XXXXX	829	—	127	583	607	—	194	81	132	—	2,553
Total hardwoods	XXXXX	40,977	4,501	1,284	1,264	778	-1,646	320	83	132	—	47,693
All species	265,487	151,409	84,410	54,944	39,685	23,773	13,649	7,976	4,001	4,556	3,953	653,843

[1]Less than 500 board feet.
[2]Hardwoods are not considered sawtimber until they are 11 inches d.b.h.

Table 31—Net annual growth of sawtimber (Scribner rule) on timberland by species and diameter class, 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	34,793	18,553	14,952	12,333	8,033	5,543	4,435	-7	692	1,577	1,624	102,528
Ponderosa pine	92,805	44,938	36,164	26,668	17,568	10,860	7,012	5,306	2,539	1,447	1,408	246,715
Bristlecone pine	120	251	170	43	40	64	114	3	4	([1])	([1])	809
Limber pine	4,862	2,402	2,064	1,162	945	430	269	545	279	90	-130	12,918
Subalpine fir	6,149	3,463	1,538	640	497	551	153	111	25	3	32	13,162
White fir	40,378	12,819	9,619	4,519	4,414	2,235	951	667	101	426	576	76,705
Engelmann spruce	20,474	12,507	6,667	3,191	3,626	1,263	634	222	-112	361	17	48,850
Other softwoods	—	—	—	—	—	22	—	—	—	—	—	22
Total softwoods	199,581	94,933	71,174	48,556	35,123	20,968	13,568	6,847	3,528	3,904	3,527	501,709
Aspen	XXXXX[2]	30,538	3,932	1,083	632	158	-1,391	111	2	—	—	35,065
Cottonwood	XXXXX	698	—	124	555	543	—	173	72	117	—	2,282
Total hardwoods	XXXXX	31,236	3,932	1,207	1,187	701	-1,391	284	74	117	—	37,347
All species	199,581	126,169	75,106	49,763	36,310	21,669	12,177	7,131	3,602	4,021	3,527	539,056

[1]Less than 500 board feet.
[2]Hardwoods are not considered sawtimber until they are 11 inches d.b.h.

Mortality

Table 32—Annual mortality of growing stock on timberland by species and owner group, New Mexico, 1986

Species	Owner group			Total
	National Forest	Other public	Private	
	Thousand cubic feet			
Douglas-fir	1,615	266	4,585	6,466
Ponderosa pine	2,609	—	355	2,964
Bristlecone pine	—	—	—	—
Limber pine	84	—	—	84
Subalpine fir	259	—	575	834
White fir	1,291	—	—	1,291
Engelmann spruce	614	—	—	614
Other softwoods	—	—	—	—
Total softwoods	6,472	266	5,515	12,253
Aspen	1,126	—	440	1,566
Cottonwood	—	—	—	—
Total hardwoods	1,126	—	440	1,566
All species	7,598	266	5,955	13,819

Table 33—Annual mortality of sawtimber (International ¼-inch rule) on timberland by species and owner group, New Mexico, 1986

Species	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, International ¼-inch rule			
Douglas-fir	6,265	1,183	13,968	21,416
Ponderosa pine	11,779	—	1,335	13,114
Bristlecone pine	—	—	—	—
Limber pine	438	—	—	438
Subalpine fir	888	—	997	1,885
White fir	4,478	—	—	4,478
Engelmann spruce	2,238	—	—	2,238
Other softwoods	—	—	—	—
Total softwoods	26,086	1,183	16,300	43,569
Aspen	2,953	—	1,868	4,821
Cottonwood	—	—	—	—
Total hardwoods	2,953	—	1,868	4,821
All species	29,039	1,183	18,168	48,390

Table 34—Annual mortality of sawtimber (Scribner rule) on timberland by species and owner group, New Mexico, 1986

Species	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, Scribner rule			
Douglas-fir	5,152	920	10,891	16,963
Ponderosa pine	10,040	—	1,082	11,122
Bristlecone pine	—	—	—	—
Limber pine	378	—	—	378
Subalpine fir	698	—	743	1,441
White fir	3,848	—	—	3,848
Engelmann spruce	1,858	—	—	1,858
Other softwoods	—	—	—	—
Total softwoods	21,974	920	12,716	35,610
Aspen	2,347	—	1,588	3,935
Cottonwood	—	—	—	—
Total hardwoods	2,347	—	1,588	3,935
All species	24,321	920	14,304	39,545

Table 35—Annual mortality of growing stock on timberland by species and diameter class, 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	771	1,137	524	1,360	985	64	341	415	71	430	243	19	107	6,467
Ponderosa pine	124	321	360	583	193	233	414	413	76	24	99	19	103	2,962
Bristlecone pine	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Limber pine	—	—	—	—	40	—	—	—	—	—	—	—	45	85
Subalpine fir	45	390	31	267	70	30	—	—	—	—	—	—	—	833
White fir	119	86	192	89	66	366	2	53	159	25	98	3	34	1,292
Engelmann spruce	130	46	51	—	11	64	—	58	67	63	56	—	67	613
Other softwoods	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total softwoods	1,189	1,980	1,158	2,299	1,365	757	757	939	373	542	496	41	356	12,252
Aspen	311	235	138	254	23	151	80	26	349	—	—	—	—	1,567
Cottonwood	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total hardwoods	311	235	138	254	23	151	80	26	349	—	—	—	—	1,567
All species	1,500	2,215	1,296	2,553	1,388	908	837	965	722	542	496	41	356	13,819

Table 36—Annual mortality of sawtimber (International ¼-inch rule) on timberland by species and diameter class, 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 ¼-inch rule											
Douglas-fir	1,562	5,683	4,689	336	1,854	2,292	400	2,465	1,403	111	622	21,417
Ponderosa pine	1,289	2,643	984	1,250	2,508	2,534	442	141	579	115	629	13,114
Bristlecone pine	—	—	—	—	—	—	—	—	—	—	—	—
Limber pine	—	—	182	—	—	—	—	—	—	—	256	438
Subalpine fir	115	1,256	358	155	—	—	—	—	—	—	—	1,884
White fir	641	383	302	1,633	10	224	641	97	383	10	153	4,477
Engelmann spruce	219	—	57	335	—	300	347	330	295	—	356	2,239
Other softwoods	—	—	—	—	—	—	—	—	—	—	—	—
Total softwoods	3,826	9,965	6,572	3,709	4,372	5,350	1,830	3,033	2,660	236	2,016	43,569
Aspen	XXXXX[1]	1,342	137	858	477	139	1,868	—	—	—	—	4,821
Cottonwood	XXXXX	—	—	—	—	—	—	—	—	—	—	—
Total hardwoods	XXXXX	1,342	137	858	477	139	1,868	—	—	—	—	4,821
All species	3,826	11,307	6,709	4,567	4,849	5,489	3,698	3,033	2,660	236	2,016	48,390

[1]Hardwoods are not considered sawtimber until they are 11 inches d.b.h.

Table 37—Annual mortality of sawtimber (Scribner rule) on timberland by species and diameter class, 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	1,293	4,147	3,613	267	1,504	1,875	338	2,117	1,182	99	527	16,962
Ponderosa pine	985	2,094	821	1,083	2,198	2,244	394	125	516	102	560	11,122
Bristlecone pine	—	—	—	—	—	—	—	—	—	—	—	—
Limber pine	—	—	150	—	—	—	—	—	—	—	228	378
Subalpine fir	91	940	284	126	—	—	—	—	—	—	—	1,441
White fir	517	302	254	1,425	8	199	571	86	341	9	136	3,848
Engelmann spruce	158	—	45	273	—	251	293	281	251	—	306	1,858
Other softwoods	—	—	—	—	—	—	—	—	—	—	—	—
Total softwoods	3,044	7,483	5,167	3,174	3,710	4,569	1,596	2,609	2,290	210	1,757	35,609
Aspen	XXXXX[1]	1,023	110	700	398	117	1,588	—	—	—	—	3,936
Cottonwood	XXXXX	—	—	—	—	—	—	—	—	—	—	—
Total hardwoods	XXXXX	1,023	110	700	398	117	1,588	—	—	—	—	3,936
All species	3,044	8,506	5,277	3,874	4,108	4,686	3,184	2,609	2,290	210	1,757	39,545

[1]Hardwoods are not considered sawtimber until they are 11 inches d.b.h.

Table 38—Annual mortality of growing stock on timberland by species and cause of death, New Mexico, 1986

Species	Cause of death								
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown[1]	Total
	Thousand cubic feet								
Douglas-fir	3,996	1,269	34	—	42	29	66	1,030	6,466
Ponderosa pine	539	147	42	—	906	95	169	1,065	2,963
Bristlecone pine	—	—	—	—	—	—	—	—	—
Limber pine	—	—	—	—	45	—	—	40	85
Subalpine fir	—	307	—	—	30	—	—	497	834
White fir	30	388	—	—	319	—	29	525	1,291
Engelmann spruce	130	—	—	6	5	46	18	408	613
Other softwoods	—	—	—	—	—	—	—	—	—
Total softwoods	4,695	2,111	76	6	1,347	170	282	3,565	12,252
Aspen	26	729	—	—	105	112	—	595	1,567
Cottonwood	—	—	—	—	—	—	—	—	—
Total hardwoods	26	729	—	—	105	112	—	595	1,567
All species	4,721	2,840	76	6	1,452	282	282	4,160	13,819

[1]Because 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 39—Annual mortality of sawtimber (International ¼-inch rule) on timberland by species and cause of death, New Mexico, 1986

Species	Cause of death								
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	Total
	Thousand board feet, International ¼-inch rule								
Douglas-fir	11,858	4,134	—	—	118	—	89	5,218	21,417
Ponderosa pine	3,118	567	114	—	4,711	—	101	4,503	13,114
Bristlecone pine	—	—	—	—	—	—	—	—	—
Limber pine	—	—	—	—	256	—	—	182	438
Subalpine fir	—	44	—	—	155	—	—	1,685	1,884
White fir	107	1,597	—	—	1,266	—	26	1,482	4,478
Engelmann spruce	686	—	—	32	25	—	—	1,495	2,238
Other softwoods	—	—	—	—	—	—	—	—	—
Total softwoods	15,769	6,342	114	32	6,531	—	216	14,565	43,569
Aspen	60	2,701	—	—	—	—	—	2,060	4,821
Cottonwood	—	—	—	—	—	—	—	—	—
Total hardwoods	60	2,701	—	—	—	—	—	2,060	4,821
All species	15,829	9,043	114	32	6,531	—	216	16,625	48,390

Table 40—Annual mortality of sawtimber (Scribner rule) on timberland by species and cause of death, New Mexico, 1986

Species	Cause of death								
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	Total
	Thousand board feet, Scribner rule								
Douglas-fir	9,022	3,417	—	—	95	—	79	4,349	16,962
Ponderosa pine	2,723	487	93	—	3,991	—	71	3,758	11,123
Bristlecone pine	—	—	—	—	—	—	—	—	—
Limber pine	—	—	—	—	228	—	—	150	378
Subalpine fir	—	39	—	—	126	—	—	1,276	1,441
White fir	88	1,374	—	—	1,099	—	20	1,267	3,848
Engelmann spruce	587	—	—	25	20	—	—	1,226	1,858
Other softwoods	—	—	—	—	—	—	—	—	—
Total softwoods	12,420	5,317	93	25	5,559	—	170	12,026	35,610
Aspen	48	2,152	—	—	—	—	—	1,735	3,935
Cottonwood	—	—	—	—	—	—	—	—	—
Total hardwoods	48	2,152	—	—	—	—	—	1,735	3,935
All species	12,468	7,469	93	25	5,559	—	170	13,761	39,545

Removals

Table 41—Annual removals from growing stock on timberland by species and owner group, New Mexico, 1986

Species	Owner group			
	National Forest	Bureau of Land Management	Private	Total
	Thousand cubic feet			
True fir	2,607	—	262	2,869
Engelmann spruce	790	—	132	922
Ponderosa pine	18,362	8	2,754	21,124
Douglas-fir	4,249	—	763	5,012
Other softwoods	3	—	3	6
Aspen	305	—	899	1,204
Cottonwood	—	—	87	87
Total	26,316	8	4,900	31,224

Table 42—Annual removals from sawtimber (International ¼-inch rule) on timberland by species and owner group, New Mexico, 1986

Species	Owner group			Total
	National Forest	Bureau of Land Management	Private	
	Thousand board feet, International ¼-inch rule			
True fir	15,408	—	1,548	16,956
Engelmann spruce	4,667	—	774	5,441
Ponderosa pine	108,193	45	16,291	124,529
Douglas-fir	25,122	—	4,656	29,778
Other softwoods	19	—	20	39
Aspen	1,798	—	5,455	7,253
Cottonwood	—	—	609	609
Total	155,207	45	29,353	184,605

Table 43—Annual removals from sawtimber (Scribner rule) on timberland by species and owner group, New Mexico, 1986

Species	Owner group			Total
	National Forest	Bureau of Land Management	Private	
	Thousand board feet, Scribner rule			
True fir	13,882	—	1,396	15,278
Engelmann spruce	4,206	—	698	4,904
Ponderosa pine	97,491	40	14,682	112,213
Douglas-fir	22,637	—	4,194	26,831
Other softwoods	17	—	18	35
Aspen	1,620	—	4,913	6,533
Cottonwood	—	—	548	548
Total	139,853	40	26,449	166,342

Table 44—Annual removals from growing stock on timberland by species and removal type, New Mexico, 1986

Species	Removal type			Total
	Sawlogs	Other product	Logging residue	
	Thousand cubic feet			
True fir	2,612	138	119	2,869
Engelmann spruce	834	50	38	922
Ponderosa pine	19,600	649	875	21,124
Douglas-fir	4,352	458	202	5,012
Other softwoods	—	6	—	6
Aspen	—	1,159	45	1,204
Cottonwood	—	87	—	87
Total	27,398	2,547	1,279	31,224

Table 45—Annual removals from sawtimber (International ¼-inch rule) on timberland by species and removal type, New Mexico, 1986

Species	Removal type			Total
	Sawlogs	Other product	Logging residue	
	Thousand board feet, International ¼-inch rule			
True fir	15,967	853	136	16,956
Engelmann spruce	5,089	309	43	5,441
Ponderosa pine	119,886	3,647	996	124,529
Douglas-fir	26,612	2,935	231	29,778
Other softwoods	—	39	—	39
Aspen	—	7,202	51	7,253
Cottonwood	—	609	—	609
Total	167,554	15,594	1,457	184,605

Table 46—Annual removals from sawtimber (Scribner rule) on timberland by species and removal type, New Mexico, 1986

Species	Removal type			Total
	Sawlogs	Other product	Logging residue	
	Thousand board feet, Scribner rule			
True fir	14,373	768	137	15,278
Engelmann spruce	4,581	278	45	4,904
Ponderosa pine	107,922	3,284	1,007	112,213
Douglas-fir	23,955	2,642	234	26,831
Other softwoods	—	35	—	35
Aspen	—	6,482	51	6,533
Cottonwood	—	548	—	548
Total	150,831	14,037	1,474	166,342

Table 47—Annual removals from growing stock on timberland by owner group and removal type, New Mexico, 1986

Owner group	Removal type			Total
	Sawlogs	Other product	Logging residue	
	Thousand cubic feet			
National Forest	24,137	1,091	1,088	26,316
Bureau of Land Management	8	—	—	8
Private	3,253	1,456	191	4,900
Total	27,398	2,547	1,279	31,224

Table 48—Annual removals from sawtimber (International ¼-inch rule) on timberland by owner group and removal type, New Mexico, 1986

Owner group	Removal type			Total
	Sawlogs	Other product	Logging residue	
	Thousand board feet, International ¼-inch rule			
National Forest	147,623	6,342	1,242	155,207
Bureau of Land Management	45	—	—	45
Private	19,886	9,252	215	29,353
Total	167,554	15,594	1,457	184,605

Table 49—Annual removals from sawtimber (Scribner rule) on timberland by owner group and removal type, New Mexico, 1986

Owner group	Removal type			Total
	Sawlogs	Other product	Logging residue	
	Thousand board feet, Scribner rule			
National Forest	132,886	5,710	1,257	139,853
Bureau of Land Managment	40	—	—	40
Private	17,905	8,327	217	26,449
Total	150,831	14,037	1,474	166,342

Area by Owner Group

Table 50—Area of woodland by forest type and owner group, New Mexico, 1987

Forest Type	Owner group			Total
	National Forest	Other public	Private	
	Acres			
Pinyon-juniper	2,826,672	1,526,290	3,512,189	7,865,151
Juniper	74,571	186,354	335,166	596,091
Total woodland softwoods	2,901,243	1,712,644	3,847,355	8,461,242
Oak	220,571	23,541	157,911	402,023
Mesquite	3,472	—	—	3,472
Total woodland hardwoods	224,043	23,541	157,911	405,495
All types	3,125,286	1,736,185	4,005,266	8,866,737

Table 51—Area of woodland by owner group, forest type, and productivity class, New Mexico, 1987

Owner group	Forest type	Productivity class		All classes
		High	Low	
		Acres		
National Forest:	Pinyon-juniper	2,784,058	42,614	2,826,672
	Juniper	74,571	—	74,571
	Oak	219,995	576	220,571
	Mesquite	3,472	—	3,472
	Total	3,082,096	43,190	3,125,286
Other public:	Pinyon-juniper	1,159,473	366,817	1,526,290
	Juniper	155,601	30,753	186,354
	Oak	16,779	6,762	23,541
	Mesquite	—	—	—
	Total	1,331,853	404,332	1,736,185
Private:	Pinyon-juniper	2,860,291	651,898	3,512,189
	Juniper	246,570	88,596	335,166
	Oak	145,841	12,070	157,911
	Mesquite	—	—	—
	Total	3,252,702	752,564	4,005,266
Total:	Pinyon-juniper	6,803,822	1,061,329	7,865,151
	Juniper	476,742	119,349	596,091
	Oak	382,615	19,408	402,023
	Mesquite	3,472	—	3,472
	Total	7,666,651	1,200,086	8,866,737

Table 52—Area of woodland by owner group, forest type, and volume-per-acre class, New Mexico, 1987

Owner group	Forest type	Volume-per-acre class						All classes
		0 - 199 ft³/acre	200 - 399 ft³/acre	400 - 599 ft³/acre	600 - 799 ft³/acre	800 - 999 ft³/acre	1,000+ ft³/acre	
		Acres						
National Forest:	Pinyon-juniper	261,056	286,871	378,687	265,669	419,731	1,214,658	2,826,672
	Juniper	34,139	8,281	7,827	859	—	23,465	74,571
	Oak	57,080	13,325	31,114	30,153	25,062	63,837	220,571
	Mesquite	2,575	897	—	—	—	—	3,472
	Total	354,850	309,374	417,628	296,681	444,793	1,301,960	3,125,286
Other public:	Pinyon-juniper	250,601	342,275	368,170	231,295	134,864	199,085	1,526,290
	Juniper	24,957	85,014	19,505	20,303	29,804	6,771	186,354
	Oak	10,957	—	12,584	—	—	—	23,541
	Mesquite	—	—	—	—	—	—	—
	Total	286,515	427,289	400,259	251,598	164,668	205,856	1,736,185
Private:	Pinyon-juniper	500,088	980,599	734,083	431,926	287,150	578,343	3,512,189
	Juniper	99,681	145,433	51,385	13,662	11,467	13,538	335,166
	Oak	43,669	23,065	18,092	15,000	11,374	46,711	157,911
	Mesquite	—	—	—	—	—	—	—
	Total	643,438	1,149,097	803,560	460,588	309,991	638,592	4,005,266
Total:	Pinyon-juniper	1,011,745	1,609,745	1,480,940	928,890	841,745	1,992,086	7,865,151
	Juniper	158,777	238,728	78,717	34,824	41,271	43,774	596,091
	Oak	111,706	36,390	61,790	45,153	36,436	110,548	402,023
	Mesquite	2,575	897	—	—	—	—	3,472
	Total	1,284,803	1,885,760	1,621,447	1,008,867	919,452	2,146,408	8,866,737

Table 53—Number of trees on woodland by owner group, species, and diameter class, New Mexico, 1987

Owner group and species	Diameter class (inches at root collar)															All classes
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Thousand trees															
National Forest:																
Pinyon	206,598	196,038	131,238	83,346	45,931	26,325	16,505	7,798	2,945	1,803	1,577	313	18	—	10	720,445
Juniper	86,660	71,010	67,551	47,937	28,694	20,450	18,450	12,535	8,266	5,015	4,639	1,969	1,390	1,099	4,152	379,817
Oak	61,368	59,295	24,879	10,890	7,103	3,168	2,008	1,784	824	366	314	105	122	122	23	172,371
Cercocarpus	325	42	25	31	22	5	6	—	—	—	—	—	—	—	—	456
Mesquite	108	82	34	35	14	23	11	2	6	—	—	—	—	—	—	315
Other woodland	563	81	544	12	1	7	5	3	—	5	—	—	—	—	—	1,221
Total	355,622	326,548	224,271	142,251	81,765	49,978	36,985	22,122	12,041	7,189	6,530	2,387	1,530	1,221	4,185	1,274,625
Other public:																
Pinyon	80,054	48,070	31,208	17,776	9,121	4,604	2,150	1,496	453	325	54	104	—	32	—	195,447
Juniper	26,504	20,985	23,500	20,375	17,869	15,230	12,355	9,208	5,682	4,387	2,529	1,684	980	526	506	162,320
Oak	822	11,377	1,395	583	363	273	171	270	—	36	—	—	—	—	—	15,290
Cercocarpus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mesquite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other woodland	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	107,380	80,432	56,103	38,734	27,353	20,107	14,676	10,974	6,135	4,748	2,583	1,788	980	558	506	373,057
Private:																
Pinyon	158,235	122,622	97,290	55,175	28,101	15,961	7,851	3,679	2,354	1,285	179	58	82	104	70	493,046
Juniper	88,732	36,419	42,753	37,620	33,274	25,556	20,742	16,912	10,610	6,288	4,059	3,391	1,702	1,498	1,584	331,140
Oak	68,033	50,211	17,567	4,393	1,239	1,009	953	116	134	128	183	45	35	64	109	144,219
Cercocarpus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mesquite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other woodland	2,588	184	100	40	20	40	60	20	20	120	20	—	—	—	—	3,212
Total	317,588	209,436	157,710	97,228	62,634	42,566	29,606	20,727	13,118	7,821	4,441	3,494	1,819	1,666	1,763	971,617
Total:																
Pinyon	444,887	366,730	259,736	156,297	83,153	46,890	26,506	12,973	5,752	3,413	1,810	475	100	136	80	1,408,938
Juniper	201,896	128,414	133,804	105,932	79,837	61,236	51,547	38,655	24,558	15,690	11,227	7,044	4,072	3,123	6,242	873,277
Oak	130,223	120,883	43,841	15,866	8,705	4,450	3,132	2,170	958	530	497	150	157	186	132	331,880
Cercocarpus	325	42	25	31	22	5	6	—	—	—	—	—	—	—	—	456
Mesquite	108	82	34	35	14	23	11	2	6	—	—	—	—	—	—	315
Other woodland	3,151	265	644	52	21	47	65	23	20	125	20	—	—	—	—	4,433
Total	780,590	616,416	438,084	278,213	171,752	112,651	81,267	53,823	31,294	19,758	13,554	7,669	4,329	3,445	6,454	2,619,299

Volume by Owner Group

Table 54—Net volume on woodland by species and owner group, New Mexico, 1987

Species	Owner group			Total
	National Forest	Other public	Private	
	Thousand cubic feet			
Douglas-fir	18,982	—	3,283	22,265
Ponderosa pine	338,282	10,158	52,512	400,952
Limber pine	1,748	—	—	1,748
White fir	4,274	—	372	4,646
Cottonwood	2,355	—	1,357	3,712
Pinyon	1,514,123	281,973	912,034	2,708,130
Juniper	1,036,670	459,135	869,451	2,365,256
Oak	140,080	8,790	89,974	238,844
Cercocarpus	88	—	—	88
Mesquite	589	—	—	589
Other woodland	372	—	4,774	5,146
All species	3,057,563	760,056	1,933,757	5,751,376

Table 55—Net volume of woodland species on woodland by owner group, species, and diameter class, New Mexico, 1987

Owner group and species	Diameter class (inches at root collar)														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														
National Forest:															
Pinyon	71,834	152,567	215,772	231,751	233,693	222,652	166,778	83,795	53,916	64,423	15,252	900	—	789	1,514,122
Juniper	15,997	49,812	72,258	71,857	80,710	109,669	97,343	83,613	64,565	77,701	34,145	41,776	32,025	205,199	1,036,670
Oak	13,682	19,307	18,787	19,905	14,281	12,125	12,966	7,626	5,179	6,832	1,911	3,326	2,859	1,293	140,079
Cercocarpus	8	8	11	27	18	16	—	—	—	—	—	—	—	—	88
Mesquite	22	24	83	37	151	105	26	141	—	—	—	—	—	—	589
Other woodland	25	190	9	(1)	9	22	68	—	49	—	—	—	—	—	372
Total	101,568	221,908	306,920	323,577	328,862	344,589	277,181	175,175	123,709	148,956	51,308	46,002	34,884	207,281	2,691,920
Other public:															
Pinyon	20,072	37,674	51,560	47,464	38,076	28,744	29,268	12,877	8,235	1,881	4,764	—	1,358	—	281,973
Juniper	5,873	18,753	30,482	43,250	55,862	56,577	60,270	48,545	40,896	28,596	24,206	19,469	12,519	13,836	459,134
Oak	2,560	1,163	832	955	696	800	1,630	—	155	—	—	—	—	—	8,791
Cercocarpus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mesquite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other woodland	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	28,505	57,590	82,874	91,669	94,634	86,121	91,168	61,422	49,286	30,477	28,970	19,469	13,877	13,836	749,898
Private:															
Pinyon	53,022	127,145	151,748	139,112	134,426	107,960	69,129	60,519	44,295	5,762	1,707	4,035	8,024	5,150	912,034
Juniper	10,940	33,933	59,362	87,002	94,081	106,403	108,345	86,743	66,579	50,540	52,200	28,445	31,667	53,211	869,451
Oak	19,054	23,763	11,417	4,078	6,191	9,587	663	1,181	1,501	3,915	1,720	108	1,782	5,013	89,973
Cercocarpus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mesquite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other woodland	124	219	122	19	166	701	54	207	3,068	94	—	—	—	—	4,774
Total	83,140	185,060	222,649	230,211	234,864	224,651	178,191	148,650	115,443	60,311	55,627	32,588	41,473	63,374	1,876,232
Total:															
Pinyon	144,928	317,386	419,080	418,327	406,195	359,356	265,175	157,191	106,446	72,066	21,723	4,935	9,382	5,939	2,708,129
Juniper	32,810	102,498	162,102	202,109	230,653	272,649	265,958	218,901	172,040	156,837	110,551	89,690	76,211	272,246	2,365,255
Oak	35,296	44,233	31,036	24,938	21,168	22,512	15,259	8,807	6,835	10,747	3,631	3,434	4,641	6,306	238,843
Cercocarpus	8	8	11	27	18	16	—	—	—	—	—	—	—	—	88
Mesquite	22	24	83	37	151	105	26	141	—	—	—	—	—	—	589
Other woodland	149	409	131	19	175	723	122	207	3,117	94	—	—	—	—	5,146
Total	213,213	464,558	612,443	645,457	658,360	655,361	546,540	385,247	288,438	239,744	135,905	98,059	90,234	284,491	5,318,050

[1]Less than 500 cubic feet.

Table 56—Net volume on woodland by owner group, forest type, and productivity class, New Mexico, 1987

Owner group	Forest type	Productivity class		All classes
		High	Low	
		Thousand cubic feet		
National Forest:	Pinyon-juniper	2,866,916	12,531	2,879,447
	Juniper	40,535	—	40,535
	Oak	136,952	143	137,095
	Mesquite	486	—	486
	Total	3,044,889	12,674	3,057,563
Other public:	Pinyon-juniper	563,136	116,544	679,680
	Juniper	65,303	7,336	72,639
	Oak	4,678	3,059	7,737
	Mesquite	—	—	—
	Total	633,117	126,939	760,056
Private:	Pinyon-juniper	1,497,823	196,797	1,694,620
	Juniper	93,707	25,712	119,419
	Oak	118,381	1,337	119,718
	Mesquite	—	—	—
	Total	1,709,911	223,846	1,933,757
Total:	Pinyon-juniper	4,927,875	325,872	5,253,747
	Juniper	199,545	33,048	232,593
	Oak	260,011	4,539	264,550
	Mesquite	486	—	486
	Total	5,387,917	363,459	5,751,376

Table 57—Net volume on woodland by owner group, forest type, and volume-per-acre class, New Mexico, 1987

Owner group	Forest type	Volume-per-acre class						All classes
		0 - 199 ft³/acre	200 - 399 ft³/acre	400 - 599 ft³/acre	600 - 799 ft³/acre	800 - 999 ft³/acre	1,000+ ft³/acre	
		Thousand cubic feet						
National Forest:	Pinyon-juniper	25,108	68,577	150,212	154,308	299,988	2,181,254	2,879,447
	Juniper	3,631	2,362	4,104	404	—	30,034	40,535
	Oak	4,074	2,800	13,792	18,456	18,904	79,069	137,095
	Mesquite	266	220	—	—	—	—	486
	Total	33,079	73,959	168,108	173,168	318,892	2,290,357	3,057,563
Other public:	Pinyon-juniper	28,621	84,732	143,547	127,665	92,878	202,237	679,680
	Juniper	1,881	19,968	7,140	11,424	23,736	8,490	72,639
	Oak	1,503	—	6,234	—	—	—	7,737
	Mesquite	—	—	—	—	—	—	—
	Total	32,005	104,700	156,921	139,089	116,614	210,727	760,056
Private:	Pinyon-juniper	56,243	243,898	300,570	244,350	199,825	649,734	1,694,620
	Juniper	11,024	38,728	22,870	6,705	8,072	32,021	119,420
	Oak	4,909	6,686	8,215	9,651	9,424	80,832	119,717
	Mesquite	—	—	—	—	—	—	—
	Total	72,176	289,312	331,655	260,706	217,321	762,587	1,933,757
Total:	Pinyon-juniper	109,972	397,207	594,329	526,323	592,691	3,033,225	5,253,747
	Juniper	16,536	61,058	34,114	18,533	31,808	70,545	232,594
	Oak	10,486	9,486	28,241	28,107	28,328	159,901	264,549
	Mesquite	266	220	—	—	—	—	486
	Total	137,260	467,971	656,684	572,963	652,827	3,263,671	5,751,376

Table 58—Net dead volume of woodland species on woodland by owner group, species, and diameter class, New Mexico, 1987

Owner group and species	Diameter class (inches at root collar)														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														
National Forest:															
Pinyon	17,187	37,665	51,875	60,936	59,993	56,756	42,574	19,669	12,916	15,103	12,134	243	71	2,504	389,626
Juniper	4,053	12,800	20,025	18,348	24,799	36,541	32,886	26,297	24,062	28,577	9,275	12,516	10,671	79,764	340,614
Oak	3,292	4,409	4,238	4,549	3,331	2,621	2,918	1,688	1,522	1,509	443	1,120	793	303	32,736
Cercocarpus	1	5	18	4	3	5	—	—	—	—	—	—	—	—	36
Mesquite	3	1	7	5	9	5	1	—	—	—	—	—	—	—	31
Other woodland	6	46	17	1	9	31	15	—	70	—	—	—	—	—	195
Total	24,542	54,926	76,180	83,843	88,144	95,959	78,394	47,654	38,570	45,189	21,852	13,879	11,535	82,571	763,238
Other public:															
Pinyon	741	4,567	8,377	7,998	7,640	6,074	6,390	1,526	2,243	6,428	919	—	160	—	53,063
Juniper	338	1,284	4,525	8,934	17,791	19,165	21,334	17,798	17,926	16,104	8,694	5,996	4,578	3,791	148,258
Oak	238	504	592	186	141	162	175	220	45	—	—	—	164	—	2,427
Cercocarpus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mesquite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other woodland	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1,317	6,355	13,494	17,118	25,572	25,401	27,899	19,544	20,214	22,532	9,613	5,996	4,902	3,791	203,748
Private:															
Pinyon	2,544	10,304	18,150	22,068	27,348	16,500	16,382	10,607	9,094	3,209	3,051	3,529	253	—	143,039
Juniper	447	2,588	6,612	12,782	20,875	31,706	34,588	28,737	26,682	25,048	24,288	12,704	14,549	31,389	272,995
Oak	1,642	1,291	1,003	252	1,211	572	139	120	325	1,001	—	—	238	973	8,767
Cercocarpus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mesquite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other woodland	43	81	51	76	144	121	179	138	944	374	—	—	—	—	2,151
Total	4,676	14,264	25,816	35,178	49,578	48,899	51,288	39,602	37,045	29,632	27,339	16,233	15,040	32,362	426,952
Total:															
Pinyon	20,472	52,536	78,402	91,002	94,981	79,330	65,346	31,802	24,253	24,740	16,104	3,772	484	2,504	585,728
Juniper	4,838	16,672	31,162	40,064	63,465	87,412	88,808	72,832	68,670	69,729	42,257	31,216	29,798	114,944	761,867
Oak	5,172	6,204	5,833	4,987	4,683	3,355	3,232	2,028	1,892	2,510	443	1,120	1,195	1,276	43,930
Cercocarpus	1	5	18	4	3	5	—	—	—	—	—	—	—	—	36
Mesquite	3	1	7	5	9	5	1	—	—	—	—	—	—	—	31
Other woodland	49	127	68	77	153	152	194	138	1,014	374	—	—	—	—	2,346
Total	30,535	75,545	115,490	136,139	163,294	170,259	157,581	106,800	95,829	97,353	58,804	36,108	31,477	118,724	1,393,938

Table 59—Net dead volume of woodland species on woodland by owner group, forest type, and productivity class, New Mexico, 1987

Owner group	Forest type	Productivity class		All classes
		High	Low	
		Thousand cubic feet		
National Forest:	Pinyon-juniper	721,829	4,025	725,854
	Juniper	8,825	—	8,825
	Oak	28,526	4	28,530
	Mesquite	29	—	29
	Total	759,209	4,029	763,238
Other public:	Pinyon-juniper	145,040	43,402	188,442
	Juniper	12,822	1,501	14,323
	Oak	126	857	983
	Mesquite	—	—	—
	Total	157,988	45,760	203,748
Private:	Pinyon-juniper	329,765	67,214	396,979
	Juniper	13,421	5,719	19,140
	Oak	10,713	120	10,833
	Mesquite	—	—	—
	Total	353,899	73,053	426,952
Total:	Pinyon-juniper	1,196,634	114,641	1,311,275
	Juniper	35,068	7,220	42,288
	Oak	39,365	981	40,346
	Mesquite	29	—	29
	Total	1,271,096	122,842	1,393,938

Table 60—Net dead volume of woodland species on woodland by owner group, forest type, and volume-per-acre class, New Mexico, 1987

Owner group	Forest type	Volume-per-acre class						All classes
		0 - 199 ft³/acre	200 - 399 ft³/acre	400 - 599 ft³/acre	600 - 799 ft³/acre	800 - 999 ft³/acre	1,000+ ft³/acre	
		Thousand cubic feet						
National Forest:	Pinyon-juniper	5,783	17,952	35,281	36,403	67,160	563,275	725,854
	Juniper	790	531	365	118	—	7,021	8,825
	Oak	649	493	1,962	3,265	3,605	18,556	28,530
	Mesquite	26	3	—	—	—	—	29
	Total	7,248	18,979	37,608	39,786	70,765	588,852	763,238
Other public:	Pinyon-juniper	3,070	17,580	38,588	33,024	27,477	68,704	188,443
	Juniper	254	4,692	2,430	2,793	2,542	1,611	14,322
	Oak	45	—	938	—	—	—	983
	Mesquite	—	—	—	—	—	—	—
	Total	3,369	22,272	41,956	35,817	30,019	70,315	203,748
Private:	Pinyon-juniper	6,092	40,042	57,953	53,991	61,534	177,367	396,979
	Juniper	1,025	3,370	1,700	3,391	2,165	7,489	19,140
	Oak	207	202	344	308	173	9,599	10,833
	Mesquite	—	—	—	—	—	—	—
	Total	7,324	43,614	59,997	57,690	63,872	194,455	426,952
Total:	Pinyon-juniper	14,945	75,574	131,822	123,418	156,171	809,346	1,311,276
	Juniper	2,069	8,593	4,495	6,302	4,707	16,121	42,287
	Oak	901	695	3,244	3,573	3,778	28,155	40,346
	Mesquite	26	3	—	—	—	—	29
	Total	17,941	84,865	139,561	133,293	164,656	853,622	1,393,938

Growth by Owner Group

Table 61—Net annual growth on woodland by species and owner group, New Mexico, 1986

Species	Owner group			Total
	National Forest	Other public	Private	
	Thousand cubic feet			
Douglas-fir	573	—	86	659
Ponderosa pine	8,184	248	1,095	9,527
Limber pine	57	—	—	57
White fir	271	—	47	318
Cottonwood	28	—	114	142
Pinyon	15,289	4,113	12,881	32,283
Juniper	5,057	3,010	6,054	14,121
Oak	2,069	203	1,652	3,924
Cercocarpus	2	—	—	2
Mesquite	8	—	—	8
Other woodland	5	—	23	28
All species	31,543	7,574	21,952	61,069

Table 62—Net annual growth of woodland species on woodland by owner group, species, and diameter class, New Mexico, 1986

Owner group and species	Diameter class (inches at root collar)														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														
National Forest:															
Pinyon	3,799	2,575	2,552	1,994	2,062	1,578	31	321	176	170	27	3	—	2	15,290
Juniper	528	670	680	525	462	512	380	291	209	201	88	91	68	351	5,056
Oak	1,056	248	215	180	109	81	72	37	21	23	6	9	9	3	2,069
Cercocarpus	(1)	(1)	1	1	(1)	(1)	—	—	—	—	—	—	—	—	2
Mesquite	1	1	1	1	2	1	(1)	1	—	—	—	—	—	—	8
Other woodland	1	4	(1)	(1)	(1)	(1)	(1)	—	(1)	—	—	—	—	—	5
Total	5,385	3,498	3,449	2,701	2,635	2,172	483	650	406	394	121	103	77	356	22,430
Other public:															
Pinyon	1,020	762	792	598	406	200	205	75	34	7	12	—	3	—	4,114
Juniper	258	324	368	401	422	357	323	223	9	112	83	63	34	33	3,010
Oak	133	18	14	12	7	7	12	—	1	—	—	—	—	—	204
Cercocarpus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mesquite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other woodland	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total	1,411	1,104	1,174	1,011	835	564	540	298	44	119	95	63	37	33	7,328
Private:															
Pinyon	2,670	2,758	2,423	1,713	1,391	933	454	298	182	17	5	10	19	8	12,881
Juniper	476	588	739	846	754	700	618	439	287	178	163	85	81	100	6,054
Oak	949	342	132	43	53	63	5	5	8	23	5	1	8	15	1,652
Cercocarpus	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mesquite	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Other woodland	2	3	1	(1)	1	4	(1)	1	11	(1)	—	—	—	—	23
Total	4,097	3,691	3,295	2,602	2,199	1,700	1,077	743	488	218	173	96	108	123	20,610
Total:															
Pinyon	7,489	6,095	5,767	4,305	3,859	2,711	690	694	392	194	44	13	22	10	32,285
Juniper	1,262	1,582	1,787	1,772	1,638	1,569	1,321	953	505	491	334	239	183	484	14,120
Oak	2,138	608	361	235	169	151	89	42	30	46	11	10	17	18	3,925
Cercocarpus	(1)	(1)	1	1	(1)	(1)	—	—	—	—	—	—	—	—	2
Mesquite	1	1	1	1	2	1	(1)	1	—	—	—	—	—	—	8
Other woodland	3	7	1	(1)	1	4	(1)	1	11	(1)	—	—	—	—	28
Total	10,893	8,293	7,918	6,314	5,669	4,436	2,100	1,691	938	731	389	262	222	512	50,368

[1]Less than 500 cubic feet.

Table 63—Net annual growth on woodland by owner group, forest type, and productivity class, New Mexico, 1986

Owner group	Forest type	Productivity class		All classes
		High	Low	
		Thousand cubic feet		
National Forest:	Pinyon-juniper	28,154	161	28,315
	Juniper	472	—	472
	Oak	2,748	2	2,750
	Mesquite	6	—	6
	Total	31,380	163	31,543
Other public:	Pinyon-juniper	5,902	1,098	7,000
	Juniper	380	57	437
	Oak	113	24	137
	Mesquite	—	—	—
	Total	6,395	1,179	7,574
Private:	Pinyon-juniper	17,300	1,926	19,226
	Juniper	617	164	781
	Oak	1,908	37	1,945
	Mesquite	—	—	—
	Total	19,825	2,127	21,952
Total:	Pinyon-juniper	51,356	3,185	54,541
	Juniper	1,469	221	1,690
	Oak	4,769	63	4,832
	Mesquite	6	—	6
	Total	57,600	3,469	61,069

Table 64—Net annual growth on woodland by owner group, forest type, and volume-per-acre class, New Mexico, 1986

Owner group	Forest type	Volume-per-acre class						All classes
		0 - 199 ft³/acre	200 - 399 ft³/acre	400 - 599 ft³/acre	600 - 799 ft³/acre	800 - 999 ft³/acre	1,000+ ft³/acre	
		Thousand cubic feet						
National Forest:	Pinyon-juniper	825	1,049	1,966	2,438	3,869	18,169	28,316
	Juniper	28	18	88	3	—	335	472
	Oak	237	45	224	256	282	1,705	2,749
	Mesquite	4	2	—	—	—	—	6
	Total	1,094	1,114	2,278	2,697	4,151	20,209	31,543
Other public:	Pinyon-juniper	480	927	1,376	1,334	991	1,892	7,000
	Juniper	16	157	68	52	110	34	437
	Oak	90	—	47	—	—	—	137
	Mesquite	—	—	—	—	—	—	—
	Total	586	1,084	1,491	1,386	1,101	1,926	7,574
Private:	Pinyon-juniper	1,198	3,403	3,860	2,979	1,963	5,823	19,226
	Juniper	138	296	163	28	72	85	782
	Oak	462	112	220	173	122	855	1,944
	Mesquite	—	—	—	—	—	—	—
	Total	1,798	3,811	4,243	3,180	2,157	6,763	21,952
Total:	Pinyon-juniper	2,503	5,379	7,202	6,751	6,823	25,884	54,542
	Juniper	182	471	319	83	182	454	1,691
	Oak	789	157	491	429	404	2,560	4,830
	Mesquite	4	2	—	—	—	—	6
	Total	3,478	6,009	8,012	7,263	7,409	28,898	61,069

Mortality by Owner Group

Table 65—Annual mortality on woodland by species and owner group, New Mexico, 1986

Species	Owner group			Total
	National Forest	Other public	Private	
	Thousand cubic feet			
Douglas-fir	28	—	—	28
Ponderosa pine	267	—	—	267
Limber pine	—	—	—	—
White fir	—	—	—	—
Cottonwood	—	—	—	—
Pinyon	2,011	58	122	2,191
Juniper	2	161	5	168
Oak	55	7	—	62
Cercocarpus	—	—	—	—
Mesquite	—	—	—	—
Other woodland	—	—	—	—
All species	2,363	226	127	2,716

Table 66—Area of timberland by county and owner group, New Mexico, 1987

County	Owner group			Total
	National Forest	Other public	Private	
	Acres			
Bernalillo	13,010	478	15,822	29,310
Catron	439,569	21,419	18,884	479,872
Chaves	—	—	515	515
Cibola	136,050	5,360	96,259	237,669
Colfax	54,724	20,909	435,201	510,834
Curry	—	—	—	—
De Baca	—	—	691	691
Dona Ana	—	1,369	541	1,910
Eddy	—	—	—	—
Grant	150,471	2,607	10,563	163,641
Guadalupe	—	2,151	3,966	6,117
Harding	—	3,539	2,605	6,144
Hidalgo	848	1,107	3,161	5,116
Lea	—	—	—	—
Lincoln	50,289	868	19,567	70,724
Los Alamos	25,072	1,003	970	27,045
Luna	—	816	916	1,732
McKinley	30,683	7,679	97,224	135,586
Mora	56,179	2,646	180,396	239,221
Otero	189,665	5,721	264,543	459,929
Quay	—	2,296	3,802	6,098
Rio Arriba	606,972	14,614	305,322	926,908
Roosevelt	—	—	—	—
Sandoval	165,881	3,068	97,007	265,956
San Juan	—	628	125,622	126,250
San Miguel	166,396	10,714	84,383	261,493
Santa Fe	108,677	—	37,665	146,342
Sierra	51,763	1,169	1,113	54,045
Socorro	90,234	1,240	8,630	100,104
Taos	324,029	11,835	112,010	447,874
Torrance	30,841	6,462	16,966	54,269
Union	—	5,535	7,491	13,026
Valencia	155	—	12,224	12,379
Total	2,691,508	135,233	1,964,059	4,790,800

Table 67—Net volume of growing stock on timberland by county and owner group, New Mexico, 1987

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand cubic feet			
Bernalillo	16,570	689	19,579	36,838
Catron	484,219	10,711	14,666	509,596
Chaves	—	—	499	499
Cibola	103,803	6,511	89,790	200,104
Colfax	47,174	24,889	402,743	474,806
Curry	—	—	—	—
De Baca	—	—	669	669
Dona Ana	—	2,395	188	2,583
Eddy	—	—	—	—
Grant	168,777	1,838	12,158	182,773
Guadalupe	—	1,366	1,375	2,741
Harding	—	2,372	1,191	3,563
Hidalgo	2,581	1,241	2,974	6,796
Lea	—	—	—	—
Lincoln	82,307	841	19,094	102,242
Los Alamos	44,937	1,824	1,299	48,060
Luna	—	1,427	306	1,733
McKinley	27,660	3,743	63,290	94,693
Mora	95,240	2,672	171,180	269,092
Otero	396,302	5,541	263,155	664,998
Quay	—	1,407	1,208	2,615
Rio Arriba	977,123	22,204	337,145	1,336,472
Roosevelt	—	—	—	—
Sandoval	275,955	2,528	121,867	400,350
San Juan	—	518	124,325	124,843
San Miguel	277,327	11,215	83,851	372,393
Santa Fe	175,622	—	32,773	208,395
Sierra	61,213	2,044	426	63,683
Socorro	82,909	2,168	6,196	91,273
Taos	566,261	10,465	146,546	723,272
Torrance	24,888	5,372	15,044	45,304
Union	—	4,181	4,597	8,778
Valencia	52	—	13,168	13,220
Total	3,910,920	130,162	1,951,302	5,992,384

Table 68—Net volume of sawtimber (International ¼-inch rule) on timberland by county and owner group, New Mexico, 1987

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, International ¼-inch rule			
Bernalillo	71,441	2,035	71,498	144,974
Catron	2,070,739	49,281	49,995	2,170,015
Chaves	—	—	2,077	2,077
Cibola	422,843	19,848	347,913	790,604
Colfax	155,544	85,103	1,318,259	1,558,906
Curry	—	—	—	—
De Baca	—	—	2,787	2,787
Dona Ana	—	8,581	509	9,090
Eddy	—	—	—	—
Grant	719,737	7,612	42,473	769,822
Guadalupe	—	5,936	2,286	8,222
Harding	—	9,921	2,672	12,593
Hidalgo	12,739	4,777	9,957	27,473
Lea	—	—	—	—
Lincoln	313,022	3,503	76,846	393,371
Los Alamos	179,973	5,189	4,722	189,884
Luna	—	5,115	788	5,903
McKinley	117,141	18,809	286,875	422,825
Mora	359,033	10,047	695,181	1,064,261
Otero	1,510,445	23,076	1,054,438	2,587,959
Quay	—	6,120	1,783	7,903
Rio Arriba	3,735,573	64,959	1,375,789	5,176,321
Roosevelt	—	—	—	—
Sandoval	1,051,474	8,439	446,688	1,506,601
San Juan	—	1,729	610,552	612,281
San Miguel	1,057,562	43,268	252,042	1,352,872
Santa Fe	660,684	—	120,446	781,130
Sierra	265,459	7,324	1,219	274,002
Socorro	347,064	7,770	21,764	376,598
Taos	2,108,604	34,564	533,610	2,676,778
Torrance	97,396	23,193	43,914	164,503
Union	—	17,038	12,304	29,342
Valencia	227	—	47,714	47,941
Total	15,256,700	473,237	7,437,101	23,167,038

Table 69—Net volume of sawtimber (Scribner rule) on timberland by county and owner group, New Mexico, 1987

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, Scribner rule			
Bernalillo	58,737	1,659	59,024	119,420
Catron	1,776,984	42,775	42,528	1,862,287
Chaves	—	—	1,792	1,792
Cibola	351,410	16,088	288,085	655,583
Colfax	124,056	69,699	1,063,698	1,257,453
Curry	—	—	—	—
De Baca	—	—	2,404	2,404
Dona Ana	—	7,389	432	7,821
Eddy	—	—	—	—
Grant	618,043	6,586	35,756	660,385
Guadalupe	—	4,862	1,851	6,713
Harding	—	8,156	2,155	10,311
Hidalgo	10,718	4,124	8,360	23,202
Lea	—	—	—	—
Lincoln	263,184	3,021	65,231	331,436
Los Alamos	148,564	4,261	3,869	156,694
Luna	—	4,405	666	5,071
McKinley	97,181	16,149	244,074	357,404
Mora	293,688	8,141	575,518	877,347
Otero	1,271,122	19,904	896,879	2,187,905
Quay	—	5,033	1,447	6,480
Rio Arriba	3,066,124	53,059	1,147,528	4,266,711
Roosevelt	—	—	—	—
Sandoval	863,847	6,731	370,118	1,240,696
San Juan	—	1,379	522,720	524,099
San Miguel	869,074	34,721	202,490	1,106,285
Santa Fe	542,459	—	97,827	640,286
Sierra	228,257	6,308	1,036	235,601
Socorro	287,202	6,690	18,539	312,431
Taos	1,706,708	28,213	433,952	2,168,873
Torrance	80,595	18,482	35,291	134,368
Union	—	13,913	9,905	23,818
Valencia	178	—	39,220	39,398
Total	12,658,131	391,748	6,172,395	19,222,274

Table 70—Net annual growth of growing stock on timberland by county and owner group, New Mexico, 1986

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand cubic feet			
Bernalillo	322	19	504	845
Catron	10,880	330	451	11,661
Chaves	—	—	10	10
Cibola	2,963	208	2,382	5,553
Colfax	994	584	6,953	8,531
Curry	—	—	—	—
De Baca	—	—	13	13
Dona Ana	—	92	14	106
Eddy	—	—	—	—
Grant	3,789	63	265	4,117
Guadalupe	—	45	73	118
Harding	—	75	43	118
Hidalgo	66	46	79	191
Lea	—	—	—	—
Lincoln	2,383	16	441	2,840
Los Alamos	999	44	36	1,079
Luna	—	55	23	78
McKinley	674	54	1,513	2,241
Mora	2,351	70	5,910	8,331
Otero	11,966	109	9,134	21,209
Quay	—	47	67	114
Rio Arriba	23,231	602	8,305	32,138
Roosevelt	—	—	—	—
Sandoval	6,796	109	3,061	9,966
San Juan	—	22	2,682	2,704
San Miguel	6,824	295	2,679	9,798
Santa Fe	4,452	—	887	5,339
Sierra	1,304	79	29	1,412
Socorro	2,026	84	224	2,334
Taos	12,660	306	4,170	17,136
Torrance	758	163	501	1,422
Union	—	125	118	243
Valencia	1	—	355	356
Total	95,439	3,642	50,922	150,003

Table 71—Net annual growth of sawtimber (International ¼-inch rule) on timberland by county and owner group, New Mexico, 1986

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, International ¼-inch rule			
Bernalillo	1,725	78	2,255	4,058
Catron	53,614	1,893	1,315	56,822
Chaves	—	—	56	56
Cibola	13,103	671	10,360	24,134
Colfax	3,282	2,323	30,400	36,005
Curry	—	—	—	—
De Baca	—	—	76	76
Dona Ana	—	272	13	285
Eddy	—	—	—	—
Grant	18,652	290	1,270	20,212
Guadalupe	—	647	59	706
Harding	—	917	44	961
Hidalgo	158	151	301	610
Lea	—	—	—	—
Lincoln	10,122	95	2,372	12,589
Los Alamos	4,323	228	152	4,703
Luna	—	162	21	183
McKinley	3,175	279	5,310	8,764
Mora	9,019	760	24,490	34,269
Otero	50,987	626	50,027	101,640
Quay	—	637	39	676
Rio Arriba	97,603	2,586	35,702	135,891
Roosevelt	—	—	—	—
Sandoval	25,097	180	15,380	40,657
San Juan	—	37	12,456	12,493
San Miguel	25,258	4,177	9,862	39,297
Santa Fe	15,799	—	4,084	19,883
Sierra	6,357	232	32	6,621
Socorro	9,385	246	590	10,221
Taos	54,869	966	15,126	70,961
Torrance	2,996	3,281	1,697	7,974
Union	—	1,581	204	1,785
Valencia	8	—	1,303	1,311
Total	405,532	23,315	224,996	653,843

Table 72—Net annual growth of sawtimber (Scribner rule) on timberland by county and owner group, New Mexico, 1986

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, Scribner rule			
Bernalillo	1,413	65	1,924	3,402
Catron	43,824	1,559	1,187	46,570
Chaves	—	—	45	45
Cibola	10,754	558	8,711	20,023
Colfax	2,711	1,981	24,660	29,352
Curry	—	—	—	—
De Baca	—	—	61	61
Dona Ana	—	238	12	250
Eddy	—	—	—	—
Grant	15,237	239	1,015	16,491
Guadalupe	—	441	49	490
Harding	—	634	37	671
Hidalgo	105	133	235	473
Lea	—	—	—	—
Lincoln	8,455	76	1,987	10,518
Los Alamos	3,544	190	127	3,861
Luna	—	142	18	160
McKinley	2,611	243	4,573	7,427
Mora	7,430	536	20,405	28,371
Otero	43,325	503	41,375	85,203
Quay	—	436	33	469
Rio Arriba	79,873	2,150	30,223	112,246
Roosevelt	—	—	—	—
Sandoval	20,629	150	13,186	33,965
San Juan	—	31	10,573	10,604
San Miguel	20,768	2,871	7,820	31,459
Santa Fe	13,009	—	3,477	16,486
Sierra	5,233	204	29	5,466
Socorro	7,607	216	534	8,357
Taos	44,766	805	12,713	58,284
Torrance	2,446	2,189	1,347	5,982
Union	—	1,093	171	1,264
Valencia	7	—	1,099	1,106
Total	333,747	17,683	187,626	539,056

Table 73—Annual mortality of growing stock on timberland by county and owner group, New Mexico, 1986

County	Owner group			
	National Forest	Other public	Private	Total
	Thousand cubic feet			
Bernalillo	43	—	28	71
Catron	509	—	—	509
Chaves	—	—	3	3
Cibola	104	—	230	334
Colfax	16	165	4,113	4,294
Curry	—	—	—	—
De Baca	—	—	4	4
Dona Ana	—	—	—	—
Eddy	—	—	—	—
Grant	177	—	—	177
Guadalupe	—	—	—	—
Harding	—	3	9	12
Hidalgo	15	—	—	15
Lea	—	—	—	—
Lincoln	145	5	80	230
Los Alamos	172	—	3	175
Luna	—	—	—	—
McKinley	38	—	51	89
Mora	271	11	—	282
Otero	301	36	277	614
Quay	—	—	—	—
Rio Arriba	2,170	—	566	2,736
Roosevelt	—	—	—	—
Sandoval	1,068	—	195	1,263
San Juan	—	—	12	12
San Miguel	1,075	38	—	1,113
Santa Fe	683	—	46	729
Sierra	74	—	—	74
Socorro	94	—	—	94
Taos	622	—	274	896
Torrance	22	—	—	22
Union	—	8	50	58
Valencia	—	—	13	13
Total	7,599	266	5,954	13,819

Table 74—Annual mortality of sawtimber (International ¼-inch rule) on timberland by county and owner group, New Mexico, 1986

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, International ¼-inch rule			
Bernalillo	184	—	110	294
Catron	2,022	—	—	2,022
Chaves	—	—	15	15
Cibola	464	—	894	1,358
Colfax	63	726	10,998	11,787
Curry	—	—	—	—
De Baca	—	—	20	20
Dona Ana	—	—	—	—
Eddy	—	—	—	—
Grant	702	—	—	702
Guadalupe	—	—	—	—
Harding	—	13	24	37
Hidalgo	44	—	—	44
Lea	—	—	—	—
Lincoln	525	26	375	926
Los Alamos	645	—	12	657
Luna	—	—	—	—
McKinley	177	—	200	377
Mora	1,059	48	—	1,107
Otero	875	170	1,072	2,117
Quay	—	—	—	—
Rio Arriba	8,166	—	2,208	10,374
Roosevelt	—	—	—	—
Sandoval	4,192	—	760	4,952
San Juan	—	—	45	45
San Miguel	4,217	166	—	4,383
Santa Fe	2,711	—	179	2,890
Sierra	294	—	—	294
Socorro	436	—	—	436
Taos	2,154	—	1,070	3,224
Torrance	109	—	—	109
Union	—	35	132	167
Valencia	—	—	53	53
Total	29,039	1,184	18,167	48,390

Table 75—Annual mortality of sawtimber (Scribner rule) on timberland by county and owner group, New Mexico, 1986

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, Scribner rule			
Bernalillo	158	—	90	248
Catron	1,673	—	—	1,673
Chaves	—	—	14	14
Cibola	395	—	717	1,112
Colfax	53	548	8,341	8,942
Curry	—	—	—	—
De Baca	—	—	18	18
Dona Ana	—	—	—	—
Eddy	—	—	—	—
Grant	580	—	—	580
Guadalupe	—	—	—	—
Harding	—	9	18	27
Hidalgo	39	—	—	39
Lea	—	—	—	—
Lincoln	448	23	334	805
Los Alamos	539	—	10	549
Luna	—	—	—	—
McKinley	152	—	164	316
Mora	890	37	—	927
Otero	746	151	953	1,850
Quay	—	—	—	—
Rio Arriba	6,826	—	1,814	8,640
Roosevelt	—	—	—	—
Sandoval	3,518	—	625	4,143
San Juan	—	—	37	37
San Miguel	3,540	125	—	3,665
Santa Fe	2,280	—	147	2,427
Sierra	243	—	—	243
Socorro	369	—	—	369
Taos	1,779	—	879	2,658
Torrance	93	—	—	93
Union	—	27	100	127
Valencia	—	—	43	43
Total	24,321	920	14,304	39,545

Table 76—Annual timber removals from growing stock on timberland by county and owner group, New Mexico, 1986

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand cubic feet			
Bernalillo	—	—	—	—
Catron	5,486	—	—	5,486
Chaves	—	—	—	—
Cibola	2,602	—	—	2,602
Colfax	—	—	751	751
Curry	—	—	—	—
De Baca	—	—	—	—
Dona Ana	—	—	—	—
Eddy	—	—	87	87
Grant	122	—	2	124
Guadalupe	—	—	—	—
Harding	—	—	—	—
Hidalgo	—	—	—	—
Lea	—	—	—	—
Lincoln	—	—	271	271
Los Alamos	10	—	—	10
Luna	—	—	—	—
McKinley	—	—	—	—
Mora	25	—	690	715
Otero	2,908	—	282	3,190
Quay	—	—	—	—
Rio Arriba	12,995	—	27	13,022
Roosevelt	—	—	—	—
Sandoval	446	7	774	1,227
San Juan	—	—	1,535	1,535
San Miguel	331	—	58	389
Santa Fe	375	—	162	537
Sierra	—	—	—	—
Socorro	—	—	—	—
Taos	1,017	—	261	1,278
Torrance	—	—	—	—
Union	—	—	—	—
Valencia	—	—	—	—
Total	26,317	7	4,900	31,224

Table 77—Annual timber removals from sawtimber (International ¼-inch rule) on timberland by county and owner group, New Mexico, 1986

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, International ¼-inch rule			
Bernalillo	—	—	—	—
Catron	32,733	—	—	32,733
Chaves	—	—	—	—
Cibola	15,378	—	—	15,378
Colfax	—	—	4,439	4,439
Curry	—	—	—	—
De Baca	—	—	—	—
Dona Ana	—	—	—	—
Eddy	—	—	609	609
Grant	721	—	14	735
Guadalupe	—	—	—	—
Harding	—	—	—	—
Hidalgo	—	—	—	—
Lea	—	—	—	—
Lincoln	—	—	1,608	1,608
Los Alamos	60	—	—	60
Luna	—	—	—	—
McKinley	—	—	—	—
Mora	150	—	4,100	4,250
Otero	17,181	—	1,664	18,845
Quay	—	—	—	—
Rio Arriba	76,830	—	153	76,983
Roosevelt	—	—	—	—
Sandoval	1,968	44	4,570	6,582
San Juan	—	—	9,055	9,055
San Miguel	1,956	—	347	2,303
Santa Fe	2,220	—	960	3,180
Sierra	—	—	—	—
Socorro	—	—	—	—
Taos	6,010	—	1,835	7,845
Torrance	—	—	—	—
Union	—	—	—	—
Valencia	—	—	—	—
Total	155,207	44	29,354	184,605

Table 78—Annual timber removals from sawtimber (Scribner rule) on timberland by county and owner group, New Mexico, 1986

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand board feet, Scribner rule			
Bernalillo	—	—	—	—
Catron	29,494	—	—	29,494
Chaves	—	—	—	—
Cibola	13,857	—	—	13,857
Colfax	—	—	4,000	4,000
Curry	—	—	—	—
De Baca	—	—	—	—
Dona Ana	—	—	—	—
Eddy	—	—	548	548
Grant	650	—	13	663
Guadalupe	—	—	—	—
Harding	—	—	—	—
Hidalgo	—	—	—	—
Lea	—	—	—	—
Lincoln	—	—	1,450	1,450
Los Alamos	54	—	—	54
Luna	—	—	—	—
McKinley	—	—	—	—
Mora	135	—	3,695	3,830
Otero	15,482	—	1,500	16,982
Quay	—	—	—	—
Rio Arriba	69,229	—	138	69,367
Roosevelt	—	—	—	—
Sandoval	1,774	40	4,118	5,932
San Juan	—	—	8,159	8,159
San Miguel	1,762	—	313	2,075
Santa Fe	2,000	—	865	2,865
Sierra	—	—	—	—
Socorro	—	—	—	—
Taos	5,415	—	1,651	7,066
Torrance	—	—	—	—
Union	—	—	—	—
Valencia	—	—	—	—
Total	139,852	40	26,450	166,342

Table 79—Area of woodland by county and owner group, New Mexico, 1987

County	Owner group			Total
	National Forest	Other public	Private	
	Acres			
Bernalillo	13,944	5,948	73,427	93,319
Catron	1,136,214	160,573	261,820	1,558,607
Chaves	11,835	1,165	4,339	17,339
Cibola	113,485	174,299	437,390	725,174
Colfax	2,469	17,524	159,714	179,707
Curry	—	47	1,898	1,945
De Baca	—	158	2,849	3,007
Dona Ana	—	28,475	7,056	35,531
Eddy	16,573	1,204	1,295	19,072
Grant	314,979	23,629	76,642	415,250
Guadalupe	—	11,363	87,786	99,149
Harding	—	16,073	60,554	76,627
Hidalgo	41,514	15,502	34,781	91,797
Lea	—	824	3,438	4,262
Lincoln	171,431	46,015	163,007	380,453
Los Alamos	3,514	1,432	351	5,297
Luna	—	14,861	11,595	26,456
McKinley	75,297	109,073	612,656	797,026
Mora	20,034	10,712	74,727	105,473
Otero	134,195	21,490	133,571	289,256
Quay	—	11,439	41,377	52,816
Rio Arriba	402,746	221,356	358,498	982,600
Roosevelt	—	158	3,031	3,189
Sandoval	104,051	104,817	201,124	409,992
San Juan	—	272,545	203,595	476,140
San Miguel	92,932	59,255	352,416	504,603
Santa Fe	72,245	54,453	150,993	277,691
Sierra	95,440	36,464	18,383	150,287
Socorro	177,931	181,343	114,463	473,737
Taos	70,051	45,156	78,255	193,462
Torrance	46,681	51,290	154,431	252,402
Union	—	26,118	95,924	122,042
Valencia	7,725	11,424	23,880	43,029
Total	3,125,286	1,736,185	4,005,266	8,866,737

Table 80—Net volume of woodland species on woodland by county and owner group, New Mexico, 1987

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand cubic feet			
Bernalillo	6,715	2,120	34,582	43,417
Catron	804,985	77,603	148,250	1,030,838
Chaves	5,979	95	1,335	7,409
Cibola	53,044	91,140	209,828	354,012
Colfax	7,877	10,400	123,918	142,195
Curry	—	4	574	578
De Baca	—	13	892	905
Dona Ana	—	9,043	2,209	11,252
Eddy	3,886	98	392	4,376
Grant	216,520	10,223	32,886	259,629
Guadalupe	—	4,108	20,980	25,088
Harding	—	5,743	15,938	21,681
Hidalgo	15,322	4,939	13,338	33,599
Lea	—	67	1,040	1,107
Lincoln	87,156	22,770	56,477	166,403
Los Alamos	1,613	633	219	2,465
Luna	—	4,137	3,636	7,773
McKinley	37,611	46,587	326,116	410,314
Mora	7,696	4,541	28,773	41,010
Otero	81,959	9,973	97,848	189,780
Quay	—	4,042	11,076	15,118
Rio Arriba	872,105	92,059	220,217	1,184,381
Roosevelt	—	13	917	930
Sandoval	43,989	39,782	85,794	169,565
San Juan	—	115,524	101,157	216,681
San Miguel	38,352	25,578	122,780	186,710
Santa Fe	29,684	16,231	38,467	84,382
Sierra	63,072	13,654	5,926	82,652
Socorro	88,698	79,699	38,535	206,932
Taos	198,736	22,678	40,576	261,990
Torrance	23,001	20,866	58,712	102,579
Union	—	9,828	25,859	35,687
Valencia	3,920	5,707	6,985	16,612
Total	2,691,920	749,898	1,876,232	5,318,050

Table 81—Net annual growth of woodland species on woodland by county and owner group, New Mexico, 1986

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand cubic feet			
Bernalillo	71	24	553	648
Catron	7,328	709	1,447	9,484
Chaves	93	3	18	114
Cibola	560	685	2,140	3,385
Colfax	46	138	1,197	1,381
Curry	—	(1)	8	8
De Baca	—	(1)	13	13
Dona Ana	—	102	20	122
Eddy	67	3	5	75
Grant	1,948	96	289	2,333
Guadalupe	—	49	249	298
Harding	—	69	288	357
Hidalgo	170	52	116	338
Lea	—	2	14	16
Lincoln	1,220	274	756	2,250
Los Alamos	13	7	3	23
Luna	—	46	32	78
McKinley	371	514	3,025	3,910
Mora	70	56	423	549
Otero	1,215	127	1,442	2,784
Quay	—	48	144	192
Rio Arriba	5,311	735	2,335	8,381
Roosevelt	—	(1)	12	12
Sandoval	385	373	770	1,528
San Juan	—	994	920	1,914
San Miguel	330	317	1,710	2,357
Santa Fe	256	165	520	941
Sierra	618	156	53	827
Socorro	891	907	358	2,156
Taos	1,198	259	557	2,014
Torrance	232	256	664	1,152
Union	—	119	451	570
Valencia	37	43	78	158
Total	22,430	7,328	20,610	50,368

[1]Less than 500 cubic feet.

Table 82—Annual mortality of woodland species on woodland by county and owner group, New Mexico, 1986

County	Owner group			Total
	National Forest	Other public	Private	
	Thousand cubic feet			
Bernalillo	6	(1)	—	6
Catron	45	6	—	51
Chaves	(1)	—	—	(1)
Cibola	40	153	44	237
Colfax	7	—	—	7
Curry	—	—	—	—
De Baca	—	—	—	—
Dona Ana	—	(1)	—	(1)
Eddy	—	—	—	—
Grant	—	(1)	29	29
Guadalupe	—	—	—	—
Harding	—	—	—	—
Hidalgo	—	(1)	8	8
Lea	—	—	—	—
Lincoln	8	—	—	8
Los Alamos	9	(1)	(1)	9
Luna	—	(1)	(1)	(1)
McKinley	28	1	41	70
Mora	39	—	—	39
Otero	2	—	—	2
Quay	—	—	—	—
Rio Arriba	1,018	50	—	1,068
Roosevelt	—	—	—	—
Sandoval	220	1	6	227
San Juan	—	1	—	1
San Miguel	215	—	—	215
Santa Fe	167	(1)	—	167
Sierra	2	(1)	—	2
Socorro	77	2	—	79
Taos	163	(1)	—	163
Torrance	20	—	—	20
Union	—	—	—	—
Valencia	2	10	(1)	12
Total	2,068	224	128	2,420

[1]Less than 500 cubic feet.

Table 83—Distribution of timberland plots by habitat type, New Mexico, 1987

Habitat type	Number of plots	Percentage
Ponderosa pine series		
Pinus ponderosa/Quercus gambelii	98	30
Pinus ponderosa/Quercus undulata	22	7
Pinus ponderosa/Muhlenbergia montana	14	4
Pinus ponderosa/Festuca arizonica	13	4
Pinus ponderosa/Bouteloua gracilis	9	3
Pinus ponderosa/Muhlenbergia virescens	5	2
Pinus ponderosa/Arctostaphylos uva-ursi	3	1
Pinus ponderosa/Poa pratensis	2	1
Pinus ponderosa/Muhlenbergia virescens-Festuca arizonica	1	
Pinus ponderosa/cinder	1	
Pinus ponderosa/Quercus grisea	1	
Limber pine series		
Pinus flexilis/Arctostaphylos uva-ursi	1	
Bristlecone pine series		
Pinus aristata/Festuca arizonica	1	
Pinus aristata/Festuca thurberi	1	
Engelmann spruce series		
Picea engelmannii/*Vaccinium scoparium/Polemonium delicatum*	2	1
Picea engelmannii/Vaccinium myrtillus/Polemonium pulcherrimum	8	2
Blue spruce series		
Picea pungens/Arctostaphylos uva-ursi	1	
Picea pungens/Carex foenea	3	1
Picea pungens/Erigeron eximius	1	
Subalpine fir series		
Abies lasiocarpa/Vaccinium scoparium	1	
Abies lasiocarpa/Vaccinium scoparium/Linnaea borealis	2	1
Abies lasiocarpa/Erigeron eximius	5	2
Abies lasiocarpa/Mertensia ciliata	1	
Abies lasiocarpa/Vaccinium myrtillus	5	2
Abies lasiocarpa/Vaccinium myrtillus Linnaea borealis	1	
White fir series		
Abies concolor-Pseudotsuga menziesii/Acer glabrum	5	2
Abies concolor-Pseudotsuga menziesii/Quercus gambelii	7	2
Abies concolor-Pseudotsuga menziesii	2	1
Abies concolor/sparse	5	2
Abies concolor/Festuca arizonica	3	1
Abies concolor/Acer glabrum	4	1
Abies concolor/Arctostaphylos uva-ursi	1	
Abies concolor/Erigeron eximius	2	1
Abies concolor/Quercus gambelii	16	5
Abies concolor/Vaccinium myrtillus	5	2
Abies concolor/Acer grandidentatum	3	1
Douglas-fir series		
Pseudotsuga menziesii/Holodiscus dumosus	1	
Pseudotsuga menziesii/Festuca arizonica	1	
Pseudotsuga menziesii/Quercus gambelii	53	16
Pseudotsuga menziesii/Quercus hypoleucoides	1	
Unidentified	12	4

Table 84—Distribution of woodland plots by community type, New Mexico, 1987

Community type	Number of plots	Percentage
Pinyon pine series		
Pinus edulis/Quercus gambelii	96	10
Pinus edulis/Quercus undulata	103	11
Pinus edulis/Cercocarpus montanus	12	1
Pinus edulis/Purshia tridentata	7	1
Pinus edulis/Cowania mexicana	4	
Pinus edulis/Chrysothamnus nauseosus	10	1
Pinus edulis/Artemisia tridentata	51	5
Pinus edulis/Festuca arizonica	3	
Pinus edulis/Stipa columbiana	1	
Pinus edulis/Poa fendleriana	5	
Pinus edulis/Muhlenbergia dubia	2	
Pinus edulis/Muhlenbergia pauciflora	1	
Pinus edulis/sparse	74	8
Unidentified	310	32
Alligator juniper series		
Juniperus deppeana/Quercus grisea-Rhus trilobata	2	
Juniperus deppeana/Bouteloua gracilis	6	1
Unidentified	9	1
Oneseed or Utah juniper series		
Juniperus/Chrysothamnus nauseosus-Fallugia paradoxa	6	1
Juniperus/Cercocarpus montanus-Ceanothus greggii	6	1
Juniperus/Artemisia tridentata	18	2
Juniperus/Quercus undulata	6	1
Juniperus/Bouteloua curtipendula	18	2
Juniperus/Bouteloua gracilis	82	9
Juniperus/sparse	29	3
Unidentified	72	8

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

KEYWORDS: forest surveys, inventories, volume, growth, mortality, removals, forest inventories

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