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Wyoming's Forests, 2002

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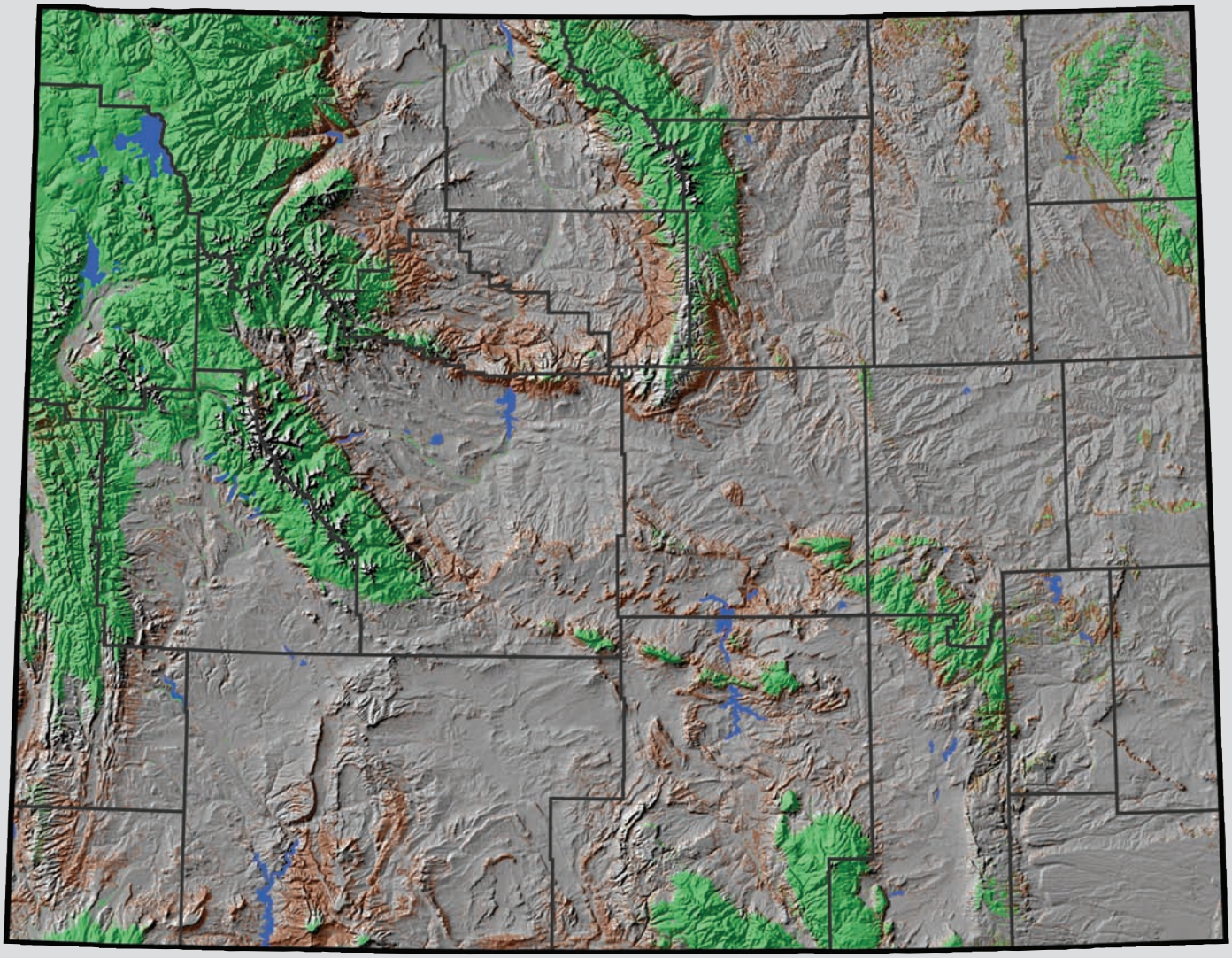

Abstract

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This report presents a summary of the most recent inventory information for Wyoming's forest lands. The report includes descriptive highlights and tables of area, number of trees, biomass, volume, growth, mortality, removals, and net change. Most of the tables are organized by forest type, species, diameter class, or owner group. The reort also describes inventory design, inventory terminology, and data reliability.

Results show that about 18 percent, or 11.4 million acres, of the total land area of Wyoming is forest land. Fifty-three percent of the forest land is administered by the USDA Forest Service. About 33 percent of the forest land in Wyoming is in reserved status. Lodgepole pine and spruce-fir forest types combined account for 40 percent of total forest land. Lodgepole pine totals 1.2 billion trees or 27 percent of all live trees on forest land. Gross annual growth of all trees on forest land totaled 331 million cubic feet. Annual mortality of all trees on forest land totaled 172 million cubic feet.

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Cover: Predicted forest area in Wyoming. See figure 2.

Highlights

Area

- The total land area of Wyoming is almost 63 million acres. Over 18 percent, or 11.4 million acres, is forest land.
- Fifty-three percent of the forest land is administered by the USDA Forest Service, and 17 percent is private, which includes Indian Trust land. Eleven percent is administered by the USDI Bureau of Land Management, 15 percent is controlled by National Parks, and the remaining 4 percent is in other public ownerships.
- About 33 percent of the forest land in Wyoming is in reserved status.
- Lodgepole pine and spruce-fir forest types combined occupy more than 4.5 million acres, or 40 percent, of total forest land.

Biomass and Volume

- The total biomass in live trees in Wyoming forests is estimated to be over 349 million tons.
- Total volume of wood in live trees in Wyoming is estimated to be almost 20 billion cubic feet.

Growth and Mortality

- Gross annual growth of all trees on forest land in Wyoming totaled almost 331 million cubic feet.
- Mortality reduced gross growth by 52 percent to over 158 million cubic feet of net annual growth.

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Wyoming's Forests, 2002

Michael T. Thompson
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Introduction

This report presents a summary of the most recent inventory data available for Wyoming's forest lands. The purpose of this report is to summarize how much forest exists, where it exists, who owns it, how it may be changing, and how trees are growing compared to those that are dying in the State of Wyoming. Species composition, stand structure, and age of the forests are presented. State-wide population estimates of numbers of trees, inventory volume, inventory biomass, and various categories of these estimates are also presented. Estimates of tree growth, mortality, and removals are discussed in relation to forest health and timber supply assessments. Two sections address the forest resources in Yellowstone National Park and in areas designated as roadless. The information is presented in text, map products, and graphics.

The data reported here are results of inventories conducted by the USDA Forest Service, Interior West Forest Inventory and Analysis (IW-FIA) Program of the Rocky Mountain Research Station, as part of their national FIA activities. Forest Inventory and Analysis (FIA) is a national program that conducts strategic-level inventories for large-scale planning and monitoring. The IW-FIA is one of five regional FIA programs, and conducts inventories in eight States in the Interior West.

The plot design, sampling intensity, and grid layout used in the most recent inventory of Wyoming are nationally consistent, probability based, and sample all ownerships. The design of the field plot, where field crews take the measurements that generate the estimates in this report, is referred to as the mapped-plot design and is explained in the "Methods" section. The sampling protocol used in the Wyoming inventory, which was conducted between 1998 and 2003, differed from protocol used in earlier inventories. Caution should be used in comparing numbers in this report with forest statistics previously reported for Wyoming (Green and Conner 1989). Reserved lands and National Forest System lands were not inventoried by FIA in the 1989 inventory; they were inventoried by National Forest Systems. Additionally, definitions and classifications have been refined over time as FIA moves forward as a national program that samples consistently across regional boundaries.

This information can be used in many ways, such as assessing the sustainability of ecosystem management practices, supporting planning and decisionmaking activities undertaken by public and private enterprises, and evaluating habitat conditions. Key program customers include State and National Forest policy lawmakers, State foresters, forest industry consultants, environmental organizations, Forest Service officials, researchers, journalists, and interested private citizens.

It is beyond the scope of a State-level assessment to do a detailed analysis of small domains or address all pertinent natural resources issues. However, there are a variety of ways that a user can obtain more detailed analysis and data for Wyoming. Since the National Forest System controls over 50 percent of the forest area in Wyoming, with six different National Forests spanning two regions, additional information is available. A set of tables, similar to the set in this report, can be generated for each National Forest and supplied to an interested user. Eventually, a brochure will be published that

provides a detailed summary of forest conditions for each National Forest in Wyoming. A detailed analysis of Wyoming's forest products industry has been published by Morgan and others, 2005. A Web-based data compilation and analysis engine—the Forest Inventory and Analysis Database—is available to the public and allows users to access data and results in a consistent manner for Wyoming and any other State in the country. A highly trained, professional IW-FIA staff, located in Ogden, Utah, is also available to answer questions, provide data, collaborate with the public, and do special analysis upon request.

Wyoming's forest inventory is a broad-scale survey that provides statistically reliable estimates of forest conditions including forest area, inventory volume, growth, and mortality for large geographic areas. Users are cautioned about making assumptions for small geographic areas using FIA inventory statistics.

Land classification categories are individually defined in the "Terminology" section of this report. However, an overview of the classification relationships may provide a better understanding of how these groups are subdivided. Land area is divided into forest and nonforest land (fig. 1). Forest land is subdivided into reserved and nonreserved status and then subdivided into timberland and woodland. Nonreserved forest land is considered available for harvesting activity where wood volume is available to be used for timber products. Reserved forest land is withdrawn from management of timber products through statute or administrative designation.

Timberland includes forests of tree species traditionally used in the forest products industry, such as ponderosa pine and Douglas-fir. Woodland includes tree species such as pinyon, juniper, and oak that are not traditionally used for industrial wood products and typically have a multistem growth form. A map illustrating the spatial distribution of timberland, woodland, and nonforest land in Wyoming is found in figure 2. Each inventory location was classified as timberland or woodland depending on which category of species made up the majority of the stocking. Nonforest land includes rangelands, agriculture, urban lands, and water, and may have a small amount of tree cover.

This report and the included tables were developed based on historical demand and on recent requests from users including private landowners, agency and university researchers, forest industry officials and consultants, National Forest System managers, State and local planning staffs, and regional and national policymakers. The 1998 through 2003 inventory was made possible through a major cooperative effort between Federal and State agencies. Substantial cooperation in terms of logistical assistance was received from many other public and private landowners.

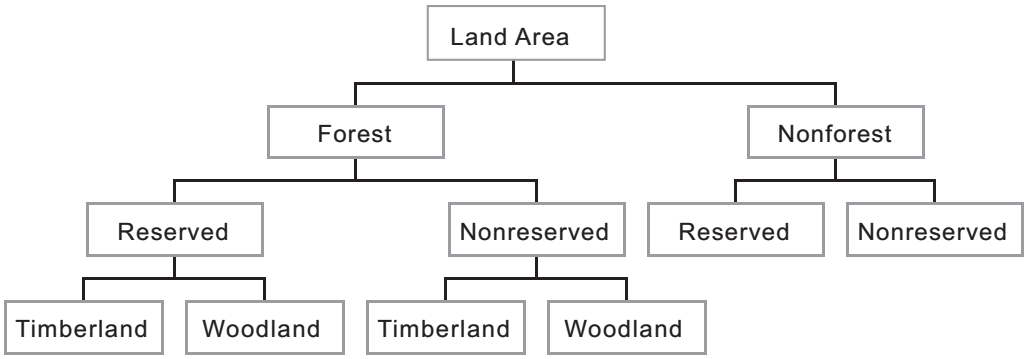

Figure 1—Land classification for FIA reporting, Wyoming, 2002.

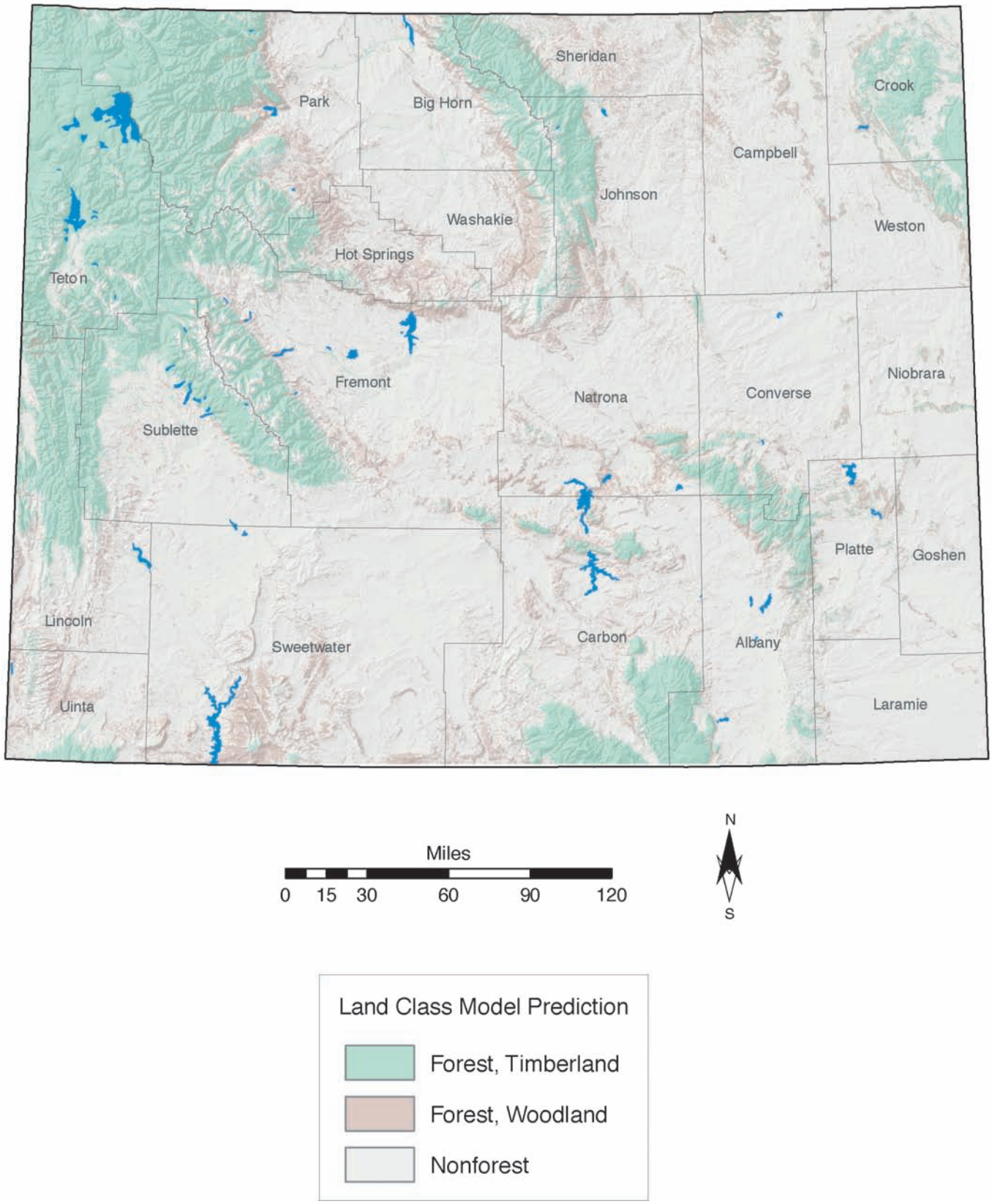

Figure 2—Area of total land by forest-land class, Wyoming, 2002.

Methods

The data in this report represent estimates for all forest land, including all owners and land status. The FIA inventory procedure for estimates in this report consists of two phases. Phase 1 refers to a grid of sample points systematically located across all lands on remote sensing imagery. Phase 2 refers to a systematic random sample of field plots established across the landscape, sampling all ownerships and status. Field crews visit Phase 2 field plots and take detailed measurements that generate inventory estimates such as forest cover type, forest inventory volume, forest growth, and forest mortality. Each Phase 2 plot is located on a grid across the State and represents approximately 6,200 acres.

The current periodic inventory of Wyoming forests began in July 1998 and was completed in August 2003. A periodic inventory measures all of the Phase 2 plots in the State over a period of time, and usually takes several years to complete. Subsequent inventories occurred on an average of about 10 years.

The Phase 1 classification in Wyoming used Landsat Thematic Mapper (TM) satellite imagery obtained from the National Land Cover Data (NLCD) database. The spatial resolution of the imagery was 30 meters and was mapped in the Albers Conic Equal Area projection, NAD 83. The Phase 1 sample was a collection of points located on a 1,000-meter-square grid overlaid on the Wyoming TM image. The State was subdivided into a number of stratified sample areas. Within each sample area, Phase 1 points were raster-classified into three land status strata (timberland, woodland, and nonforest). The area of timberland, woodland, and nonforest land was determined for each sample area by incorporating the Phase 1 and Phase 2 observations into a design that used double sampling with stratification (Cochran 1963).

The area estimator for timberland in each sample area in Wyoming is defined as:

$$\hat{A}_g = A_{Tg} \sum_{h=1}^{H} \frac{n'_{hg}}{n'_g} \frac{\sum_{i=1}^{n_{hg}} y_{ihg}}{n_{hg}}$$

where:

$\hat{A}_g$ = total timberland area (acres) for sampling area g

A_{Tg} = total land area (acres) in sampling area g

H = number of strata

n'_{hg} = number of Phase 1 points in stratum h in sampling area g

n'_g = total number of Phase 1 points in sampling area g

y_{ihg} = condition proportion on plot i in stratum h in sampling area g

n_{hg} = number of plots in stratum h in sampling area g

The field plot used in Phase 2 is the mapped-plot design (USDA Forest Service, 1999), which consists of four fixed-radius subplots. Each $^1/_{24}$-acre circular subplot samples trees 5.0 inches in diameter. A $^1/_{300}$-acre circular microplot located within the subplot samples seedlings and saplings (trees up to 4.9 inches in diameter). The sampling protocols are essentially those presented in Scott and Bechtold (1995). One of the variables recorded for each plot is the proportion of plot area in each condition class. A condition class is defined as the combination of variables that identify different stand characteristics. In Wyoming, five attributes were used to determine if different conditions existed: land status (forest-nonforest), forest type, stand size, stand origin, and stand density. When the field crew determined a distinct difference in stand conditions on a

subplot, the boundaries between conditions were mapped and trees were assigned to the appropriate condition class. All attributes measured on each location were assigned to their respective condition class. Of the 9,956 Phase 2 plots in Wyoming, 1,981 plots sampled forest land.

The FIA inventories provide a probability-based sample of forest resources across all ownerships that can be used for planning and analyses at local, State, regional, and national levels. The sample is designed to meet national standards for precision in State and regional estimates of forest attributes.

A measure of the variability of inventory statistics is provided by standard errors, listed in table 2, for estimates of area, volume, growth, and mortality on forest land for the entire State. These data indicate a sampling error of ± 1.30 percent for the estimate of total forest land, 2.32 percent for total net volume of live trees, and 9.74 percent for net annual growth of all live trees. As the totals are broken down by forest type, species, tree diameter, or other subdivisions, the sampling error increases. A 95 percent confidence interval can be computed for any estimate by multiplying the estimate's percent standard error (SE) by 1.96, multiplying that product times the estimate, and then adding and subtracting that product from the estimate to get the bounds. The 95 percent confidence interval for total forest land area in Wyoming is between 11.1 and 11.7 million acres. Similarly, the estimate of total forest land volume ranges between 18.9 and 20.7 billion cubic feet.

Users may compute statistical confidence for subdivisions of the reported data using the formula below. Because sampling error increases as the area or volume considered decreases, users should aggregate data categories as much as possible. Sampling errors obtained from this method are only approximations of reliability because homogeneity of variances is assumed. The formula is:

$$S\tilde{E}_g = \frac{SE_t \sqrt{\hat{Y}_t}}{\sqrt{\hat{Y}_g}}$$

where:

$S\tilde{E}_g =$ approximate percent standard error of $\hat{Y}_g$

$SE_t =$ percent standard error of $\hat{Y}_t$

$\hat{Y} =$ table variable of interest

$g =$ table cell or group of cells of interest

$t =$ totals from tables 2 or 3

Overview of Tables

Area of forest land, number of trees, wood volume and biomass, growth, mortality, and removals are the primary categories for which statistics are summarized and presented in the tables. There are five groups of tables. Tables 1 through 27 are for all forest land, both reserved and nonreserved. Tables 28 through 43 are for nonreserved forest land—forest land not withdrawn from tree utilization through statute or administrative designation. Tables 44 through 81 are for nonreserved timberland, that is nonreserved forest land that is 10 percent stocked and where timber species—those species traditionally used for industrial wood products—comprise more than half of the total stocking on the site. Tables 82 through 89 are for nonreserved woodland, meaning forest land where timber species make up less than half of the total stocking. The last group of tables, 90 through 111, is a set of tables comparable to similar sets presented by other

FIA groups across the nation and used in the Resources Planning Act Assessment to represent lands traditionally referred to as productive timberland. These "Core" tables are primarily for nonreserved timberland that has a minimum productivity of 20 cubic feet per acre per year.

Map Products

This report contains a number of map-based figures that were generated using ArcGIS software. Some of the maps used modeling techniques to produce the coverage. For example, figure 8 illustrates a map displaying coverage of the major forest types in Wyoming. The modeled coverage in this map was generated by the Cubist procedure (Quinlan 1993) —a rule-based predictive model that estimates forest attributes. The forest type classification at each forested sample location was used to train the model in relation to the various predictor variables extracted from over 50 data layers. Approximately half of these data layers were 2002 Moderate-resolution Imaging Spectrordadiometer (MODIS) scenes and the other half were ancillary GIS data layers. By using MODIS imagery and the Cubist modeling procedure, the resulting maps can be produced in a timely and attractive manner that contains a statistical measure of accuracy. Adding map layers such as shaded relief or digital elevation models enables the reader to compare the relationship of topographic features to forest type.

All map-based products that appear in this report have estimates of reliability, and have undergone an evaluation process to assess accuracy and identify potential for misinterpretation. This process may be referred to as predictive performance, which consist of visual and statistical evaluations.

Low estimates of accuracy and low correlation coefficients can be attributed to differences in scale, date inconsistencies, and problems with certain site-specific information. These map-based products should be used with caution especially when evaluating relatively small geographic areas (predictor layers were based on a 250-meter pixel for these models). Invariably, users of these products will attempt to draw conclusions for small domains. Not all FIA response variables yield the same prediction performance when using the same model.

Highlights of Inventory Results For Total Forest Land

Area

The State of Wyoming encompasses over 62 million acres of land area (table 1). The forested areas of Wyoming located in the western and central portions of the State are part of two provinces referred to as the Southern Rocky Mountain Steppe and Middle Rocky Mountain Steppe (Bailey 1978). The Rocky Mountains are rugged glaciated mountains as high as 14,000 feet with local relief between 3,000 feet and 7,000 feet. Most of the forest land in Wyoming is concentrated in the northwest region of the State (fig. 2). An isolated area of forest land exists in the northeast area of the State where ponderosa pine forests have found an ecological niche in the higher elevations of the plains and foothills of the Black Hills. This province is referred to as the Black Hills Coniferous Forest Province (Bailey 1978).

Approximately 18 percent of the land area, or about 11 million acres, is classified as forest land (fig. 3). Fifty-three percent of the forest land is administered by the USDA Forest Service, and 17 percent is privately-owned, which includes Indian Trust land (fig. 4). Fifteen percent is administered by the National Park Service, 11 percent is administered by the USDI Bureau of Land Management (BLM), and the remaining 4 percent is owned by State, county, and miscellaneous Federal agencies. About one-third

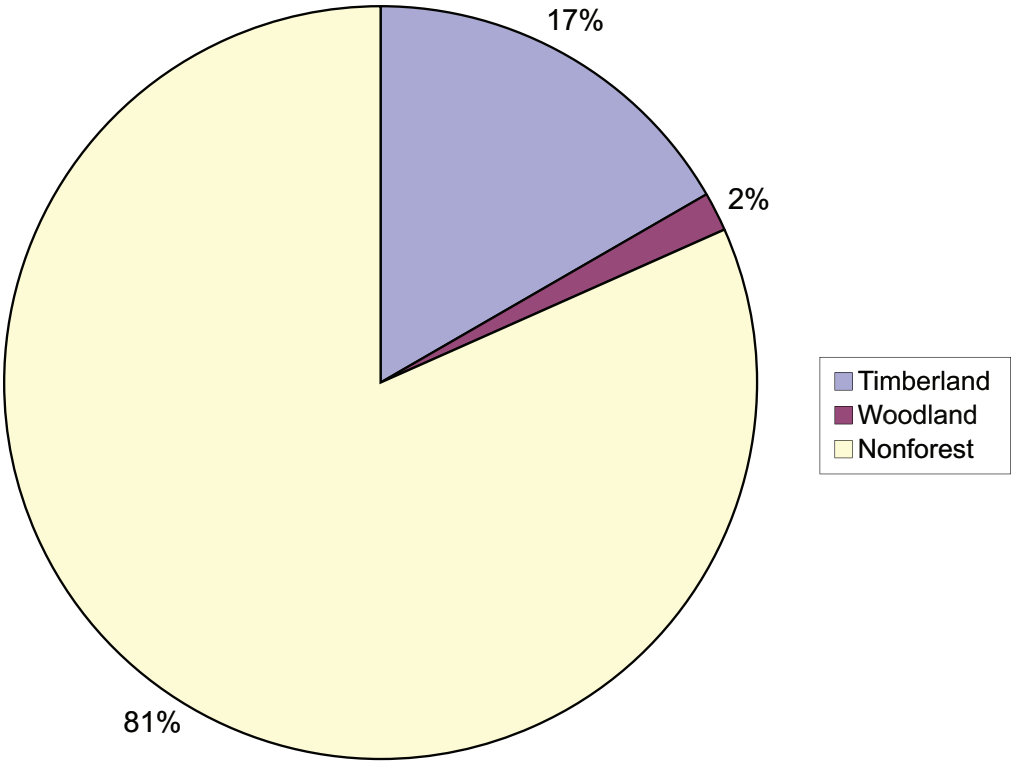

Figure 3—Land area by land class, Wyoming, 2002.

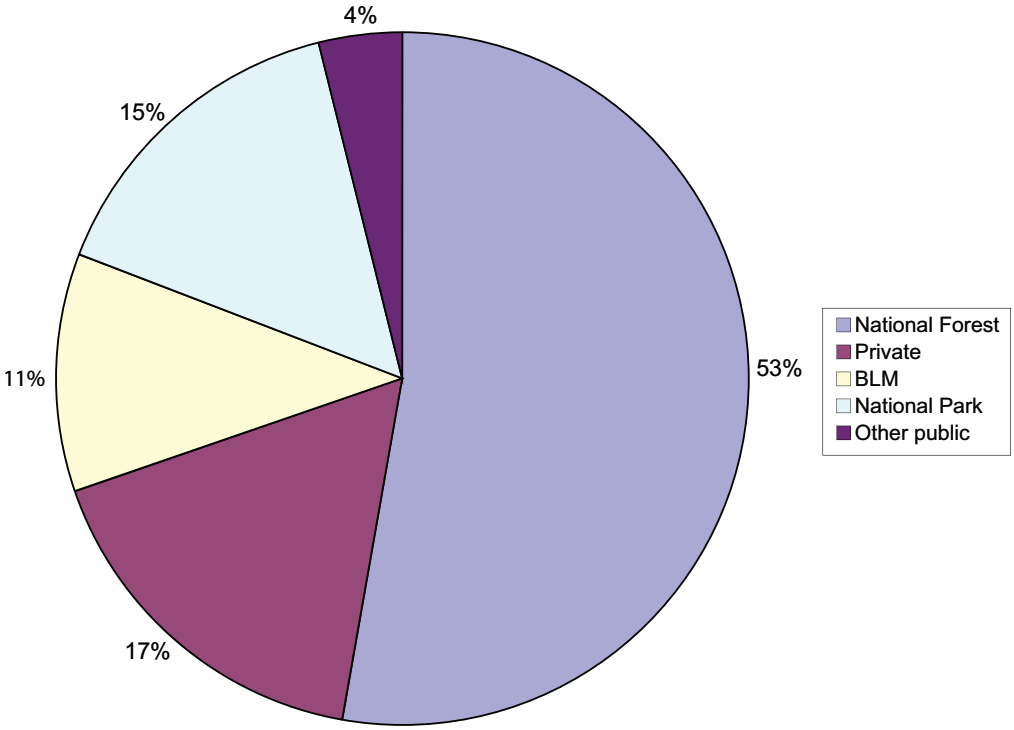

Figure 4—Area of forest land by owner group, Wyoming, 2002.

of the total forest area is in a reserved status. Figure 5 spatially illustrates the location of the major owner groups on forest land in Wyoming.

The area variables discussed below describe the structure and composition of Wyoming's forests. Some of the variables were originally developed to describe forests in terms of growing-stock and timber production and have been adapted for use in describing all trees on all forest land.

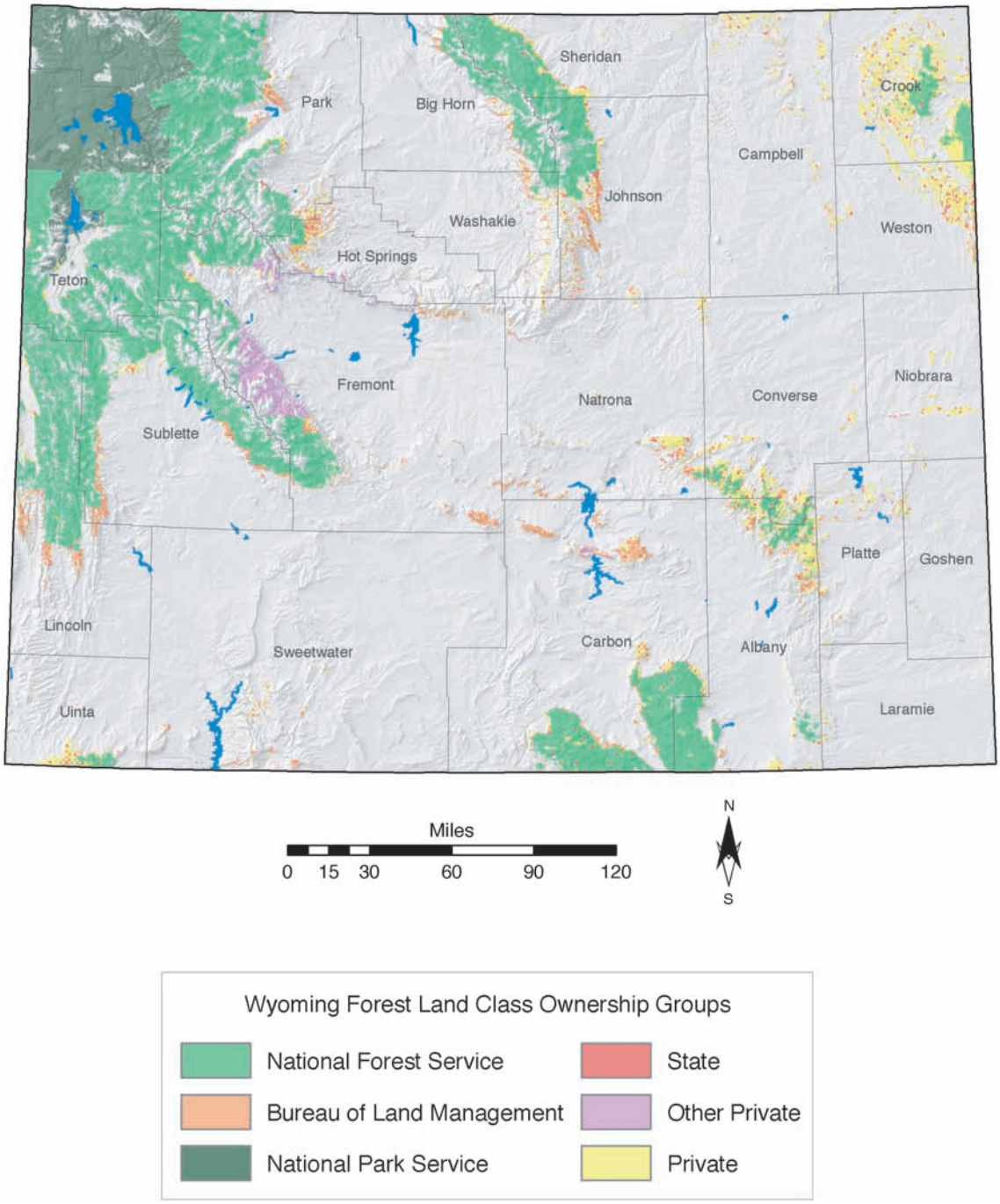

Figure 5—Area of forest land by owner group, Wyoming, 2002.

Forest type—Forest type refers to the predominant tree species in a stand based on tree stocking, and is considered an indicator of forest diversity. The lodgepole pine type is the most abundant forest type in Wyoming, covering over 2.6 million acres, or 23 percent of forest land (table 3). Second in abundance, the spruce-fir type covers 1.8 million acres or 16 percent of the State's forest land. Third, ponderosa pine totals 1.1 million acres and accounts for 9 percent of forest area. Douglas-fir and Engelmann spruce each make up 8 percent of the area; juniper, 8 percent; aspen, 6 percent; whitebark pine 5 percent, and limber pine 4 percent. Nonstocked forest land accounts for 10 percent of total forest land. Nonstocked forest land includes sparsely stocked woodland, recently cut and burned areas, and other areas that fall below a 10-percent stocking threshold of live trees. Figures 6 and 7 illustrate the distribution of forest type on timberland and woodland. Lodgepole pine predominates on timberland, whereas juniper is the most abundant forest type on woodland.

Figure 8 is a map displaying the major forest types and forest type groups overlayed with a shaded relief map layer in Wyoming. This display illustrates the very evident and somewhat predictable nature of vegetation zones in relation to mountainous topographic features. Vegetational zonation in the Southern Rocky Mountain Steppe is controlled by a combination of elevation, latitude, direction of prevailing winds, and slope exposure. The uppermost (alpine) zone is characterized by alpine tundra and the absence of trees. Directly below is the subalpine zone dominated by Engelmann spruce and subalpine fir.

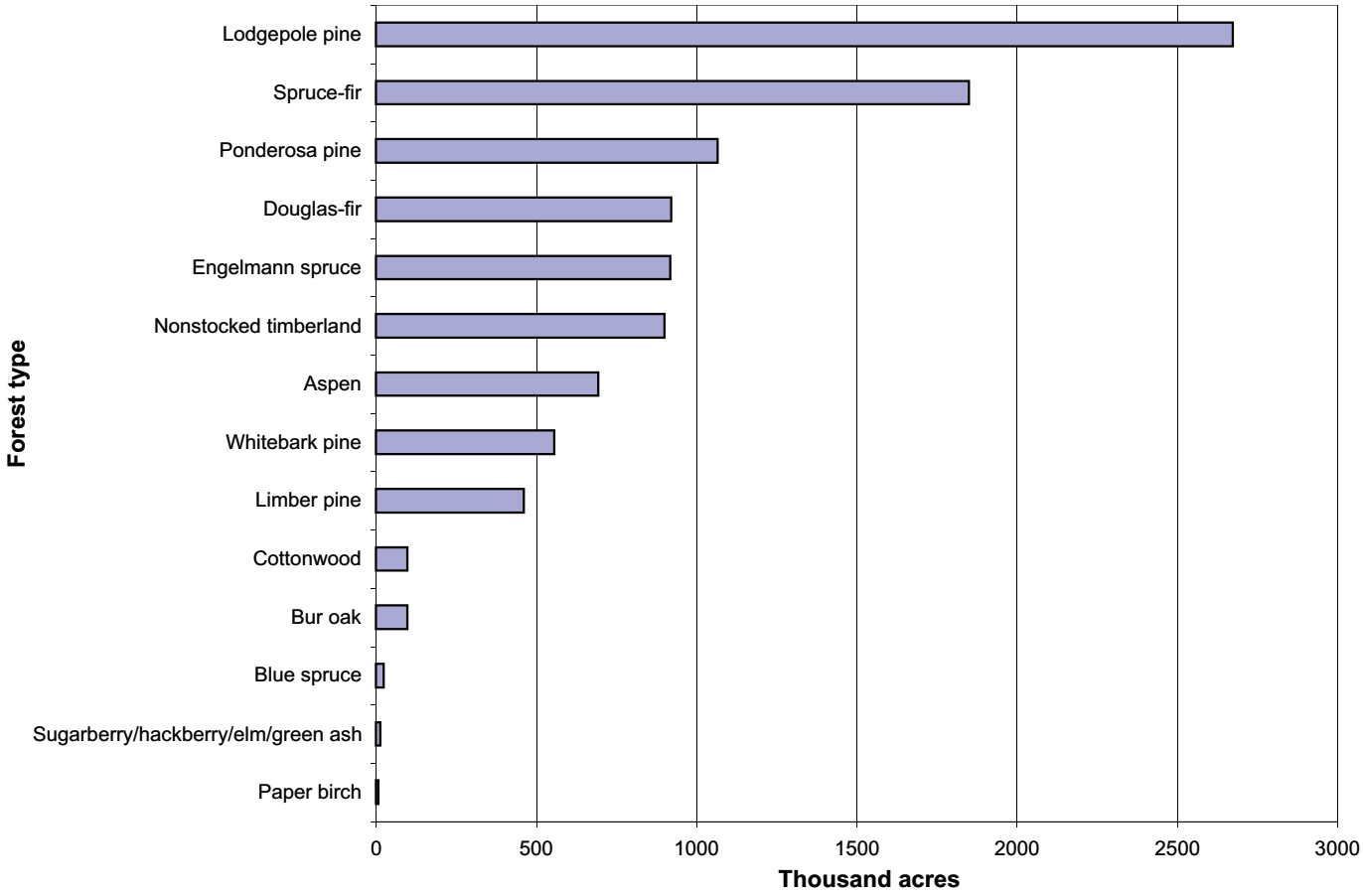

Figure 6—Area of timberland by forest type, Wyoming, 2002.

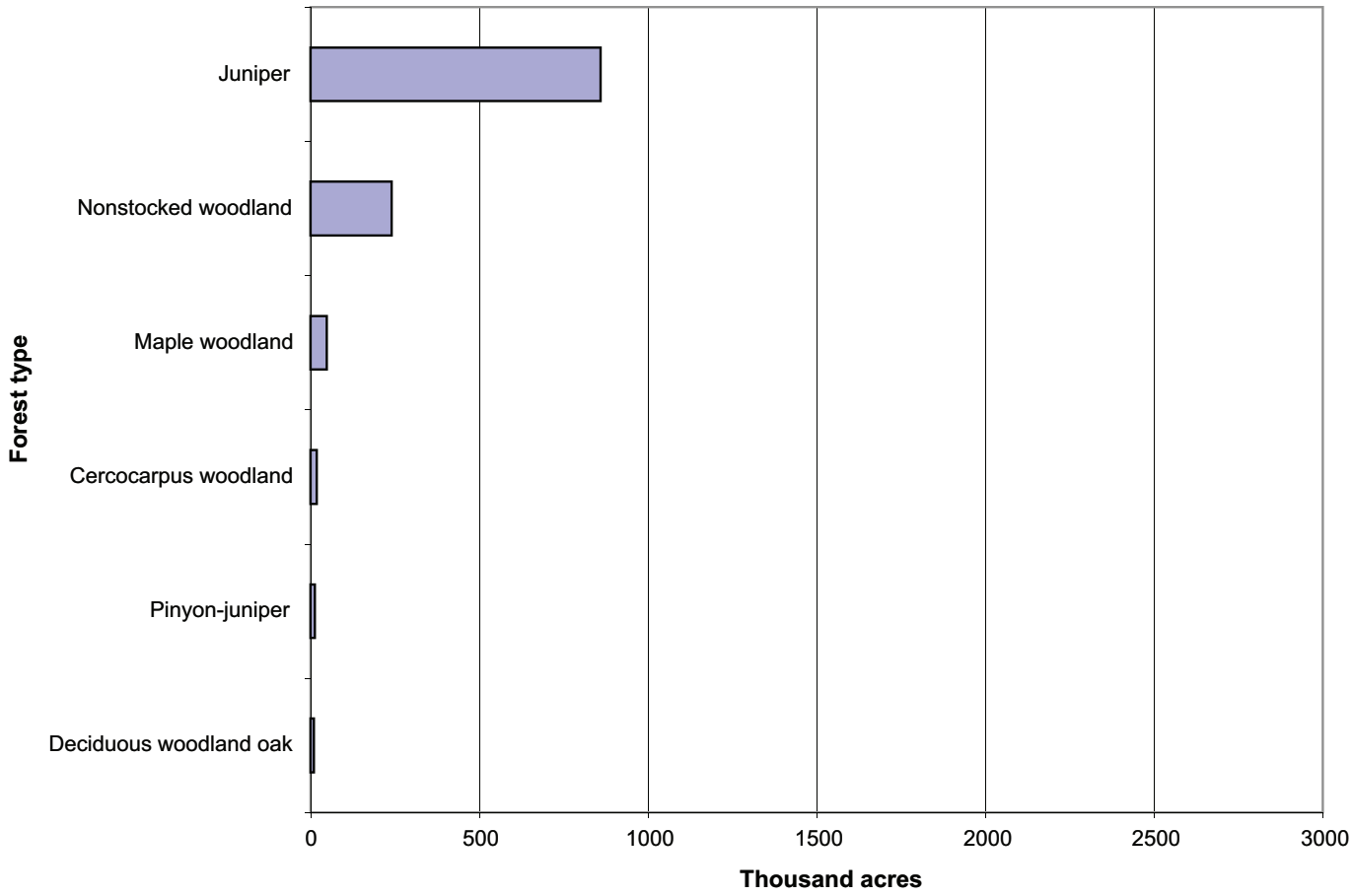

Figure 7—Area of woodland by forest type, Wyoming, 2002.

Below this area lies the montane zone, characterized by ponderosa pine and Douglas-fir, depending on aspect. Ponderosa pine favors drier, exposed slopes, whereas Douglas-fir prefers the higher, moist, sheltered areas. Below the montane zone is the foothill zone where mountain-mahogany and several species of oak are present. Lodgepole pine is heavily concentrated in the northwest region where Yellowstone National Park is located. This area is part of the Middle Rocky Mountain province characterized by basins and ranges. The spruce-fir types indicate an elliptical pattern surrounding the harsh, exposed environment of the alpine zone. Douglas-fir follows the east-facing coves at the higher elevations. Ponderosa pine is heavily concentrated in the northeast region where the Black Hills National Forest is located.

Stand size—Stand size is a classification of forest land based on the predominant diameter class of live trees presently forming the majority of live tree stocking (tables 4 through 7). The names of two of the four stand-size classes (sawtimber and poletimber) are often misinterpreted by readers of FIA reports. Sawtimber and poletimber refer only to a tree-size category and do not imply a commercial species classification. Both timberland and woodland tree species can fall into the sawtimber and poletimber stand-size class. Figure 9 illustrates area of forest land by stand-size class. The majority of stands (56 percent) are comprised of large-diameter trees (sawtimber stand-size class). Eighteen percent of forest stands are composed of small trees (sapling/seedling stand-size class), such as newly regenerated areas following harvesting activity or fire. The distribution of forest land by stand-size class varies significantly between timberland

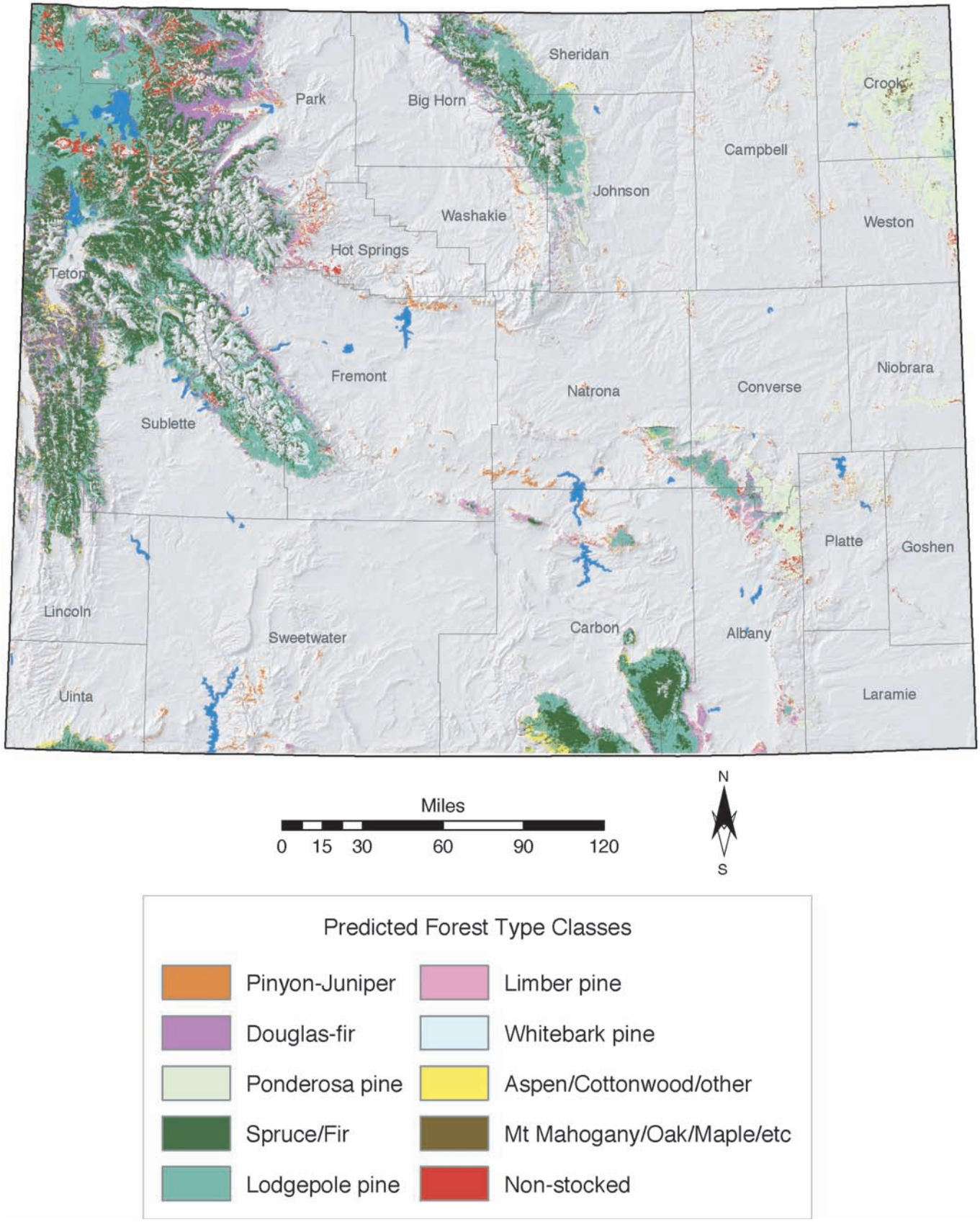

Figure 8—Area of forest land by forest type, Wyoming, 2002.

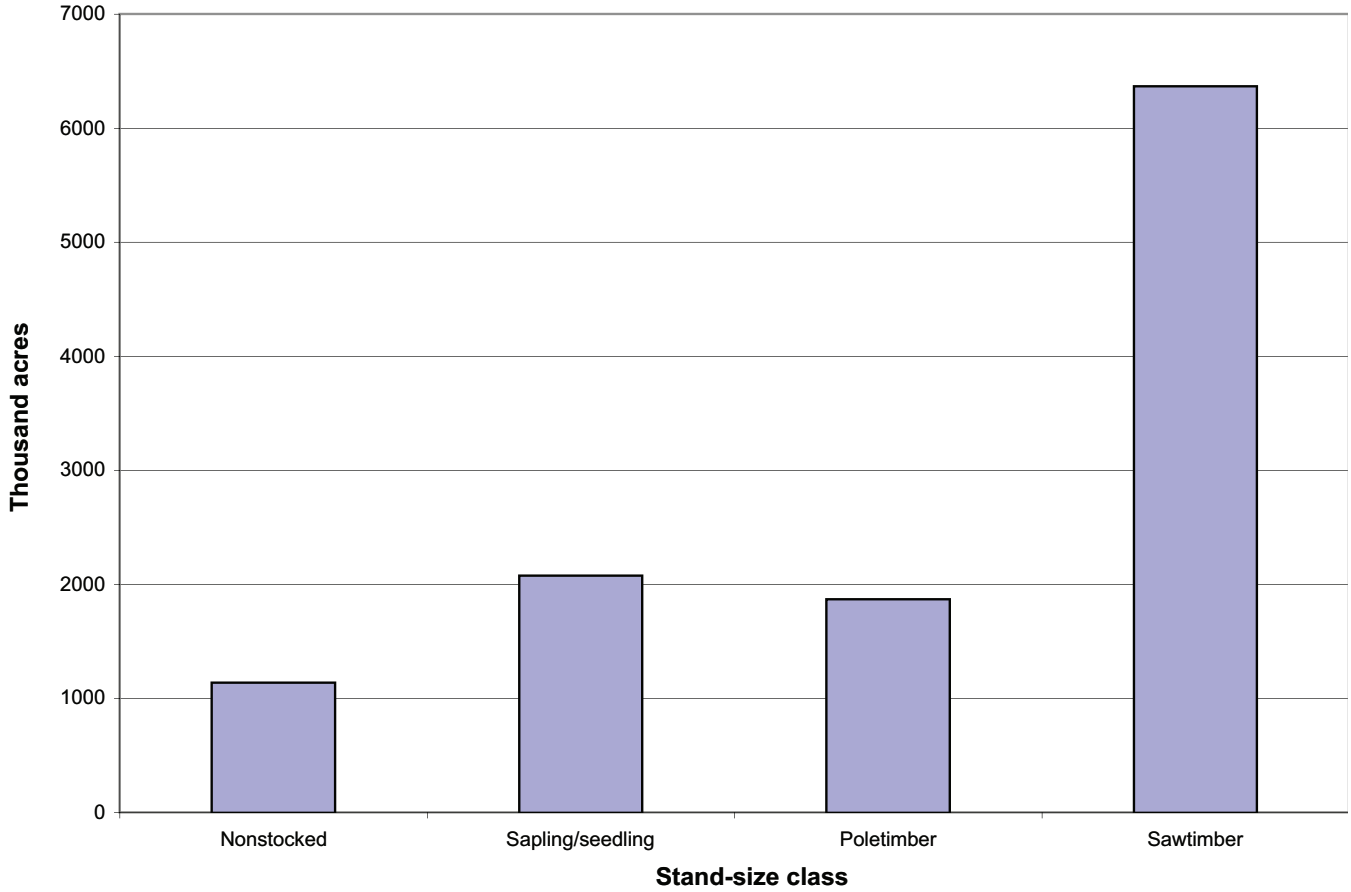

Figure 9—Area of forest land by stand-size class, Wyoming, 2002.

and woodland (fig. 10). The proportion of sawtimber and nonstocked stand-size classes is higher on land classified as woodland as opposed to timberland.

Stand age—Figure 11 illustrates area of forest land by stand-age class. Like stand size, age is an indicator of forest structure, but difficult to quantify in stands comprised of trees of many different ages. Therefore, interpretation of stand-age statistics should be used with caution especially when making certain assumptions such as old-growth conditions. Stand age is a computed variable using only those ages of trees within the computed stand-size class and weighted by trees per acre. If a computed stand-size class is nonstocked, the age class is defined as unclassified. Ninety-one percent of all forest stands in Wyoming are estimated to be less than 200 years old and less than 1 percent is over 300 years old. Figure 12 illustrates how stand-age class distribution differs between timberland and woodland. Figure 13 spatially depicts stand age distribution on forest land in Wyoming. Note the prevalence of stands in the youngest age class in the northwest region of the State. Many of these stands are young lodgepole pine forests that regenerated after the large-scale fires that occurred in 1988.

Basal area class—Basal area (BA) is the cross-sectional area of a tree stem associated with a diameter measured at a specified point on the stem, expressed in square feet. Basal area of a forest stand is the sum of the basal areas of all individual live trees in the

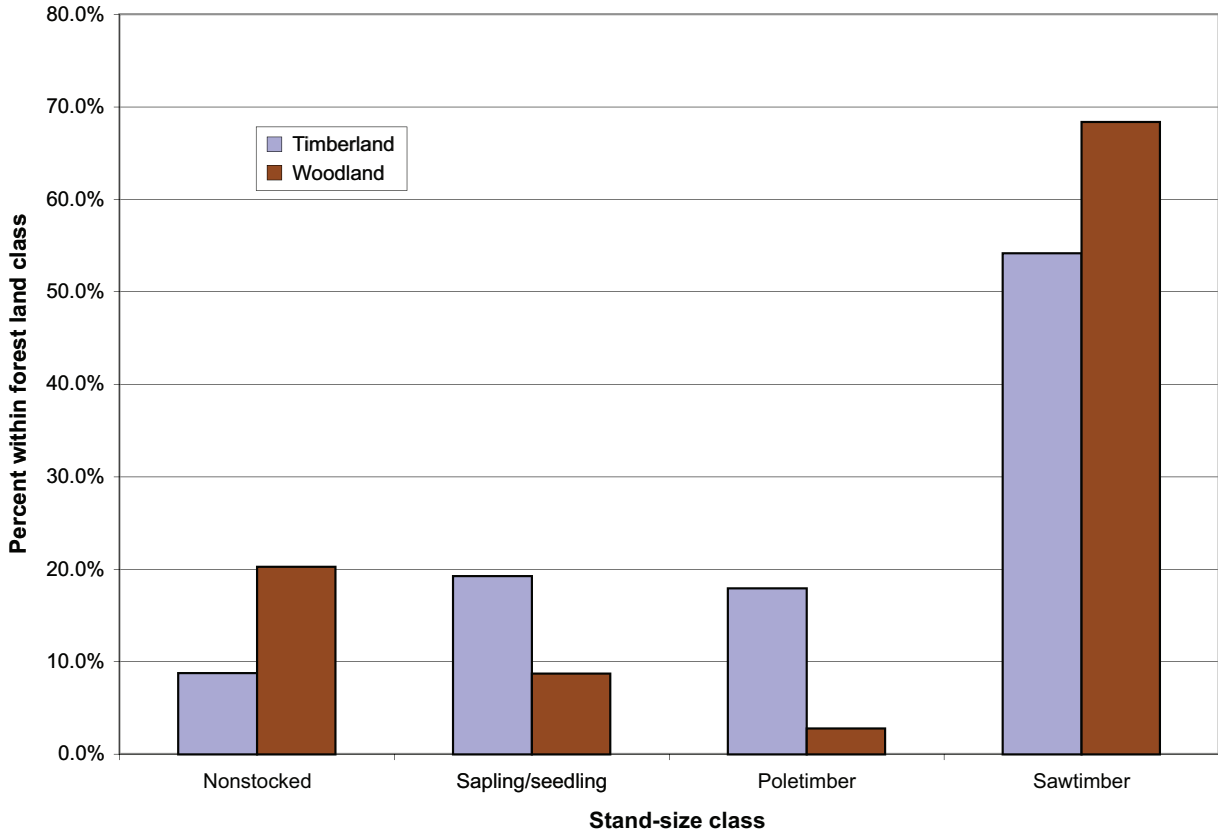

Figure 10—Distribution of forest area by stand-size class and forest land class, Wyoming, 2002.

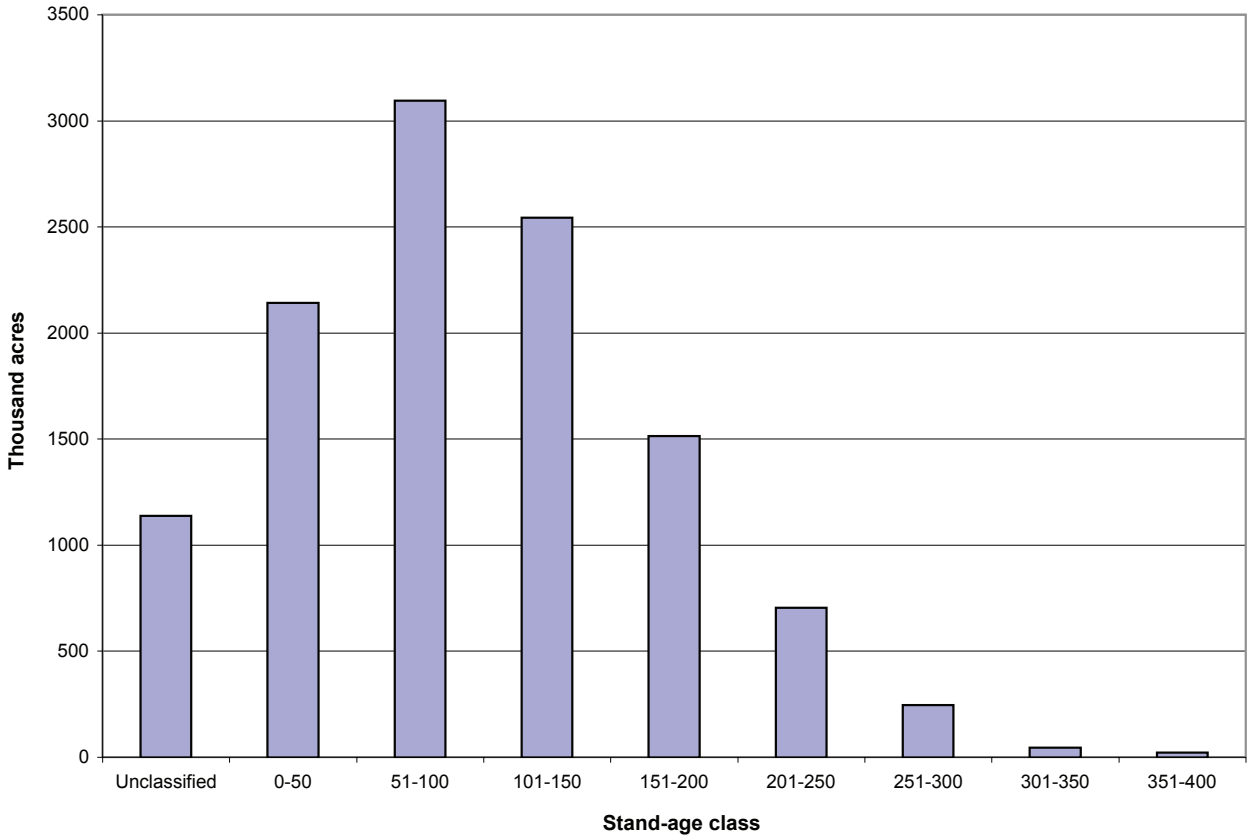

Figure 11—Area of forest land by stand-age class, Wyoming, 2002.

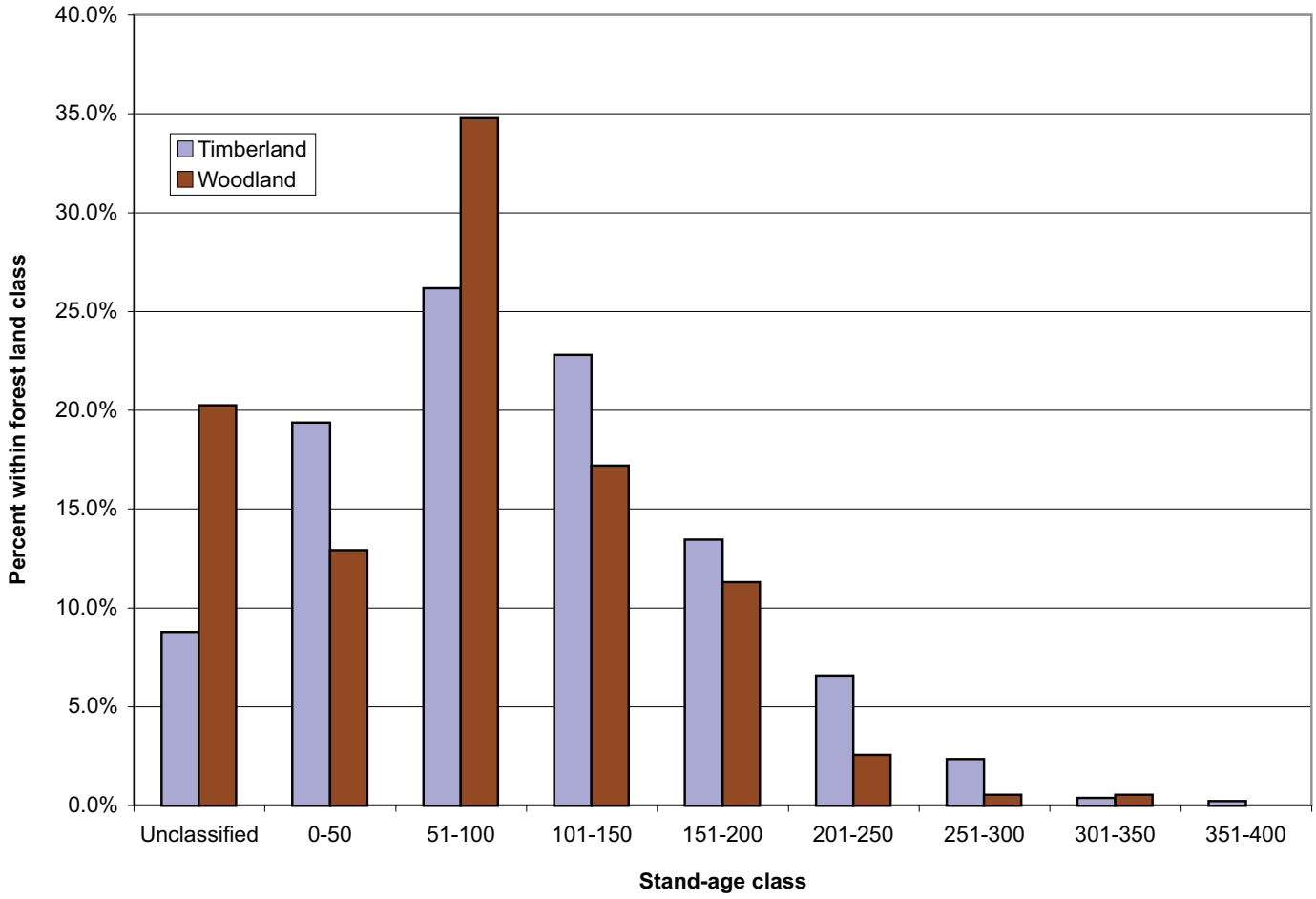

Figure 12—Distribution of forest area by stand-age class and forest land class, Wyoming, 2002.

stand and is often used to measure site occupancy. Figure 14 illustrates area of forest land by basal-area class, and indicates that more than half (52 percent) of forest land in Wyoming is in stands with basal areas of live trees greater than 75 square feet per acre. Mean basal area of live trees averages 91 square feet per acre on all forest land. Mean basal area of live trees on timberland is 93 square feet per acre on timberland and 67 square feet per acre on woodland. Stands with a high level of basal area are often in a state of competition where the trees are stressed and highly susceptible to invasion by disease and insects. Eventually, many trees die and accumulations of standing dead and down material create a fuel source for fires.

Stand density index—Stand density index (SDI), as developed by Reineke (1933), is a relative measure of stand density that quantifies the relationship between trees per acre, stand basal area, average stand diameter, and stocking of a forested stand. Western silviculturists often use SDI as one measure of stand structure to meet diverse objectives such as ecological restoration and wildlife habitat. Originally developed for even-aged stands, SDI can also be applied to unevenaged stands (Long and Daniel 1990; Shaw 2000). SDI is usually presented as a percentage of a maximum SDI for each forest type (USDA Forest Service 1991). SDI was computed for each condition that sampled forest land using maximums shown in table 12, and the results were grouped into six classes. A comparison between the distribution of forest area on timberland and woodland by SDI class is illustrated in figure 15. A site is considered to be fully occupied at 35

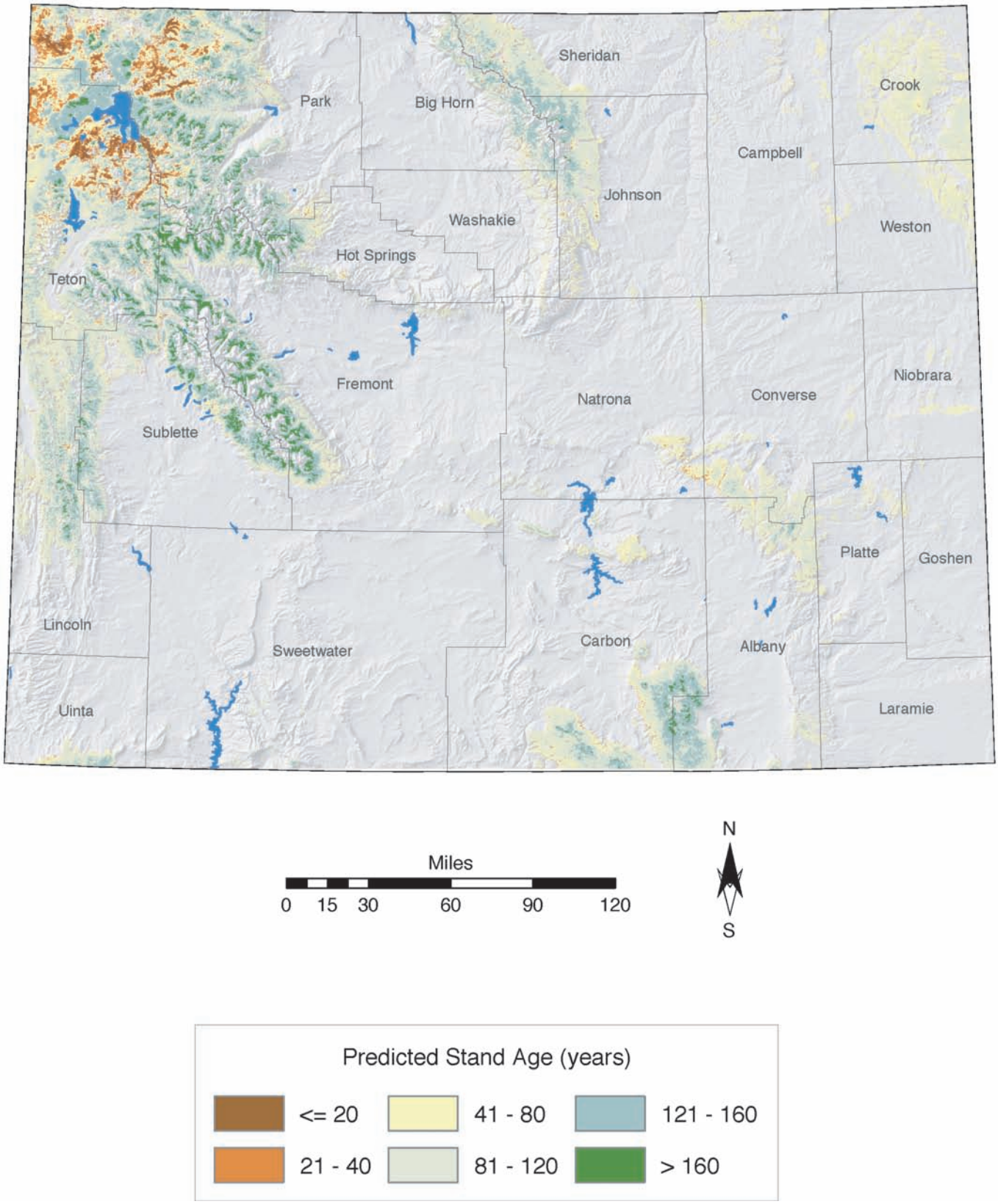

Figure 13—Area of forest land by stand-age class, Wyoming, 2002.

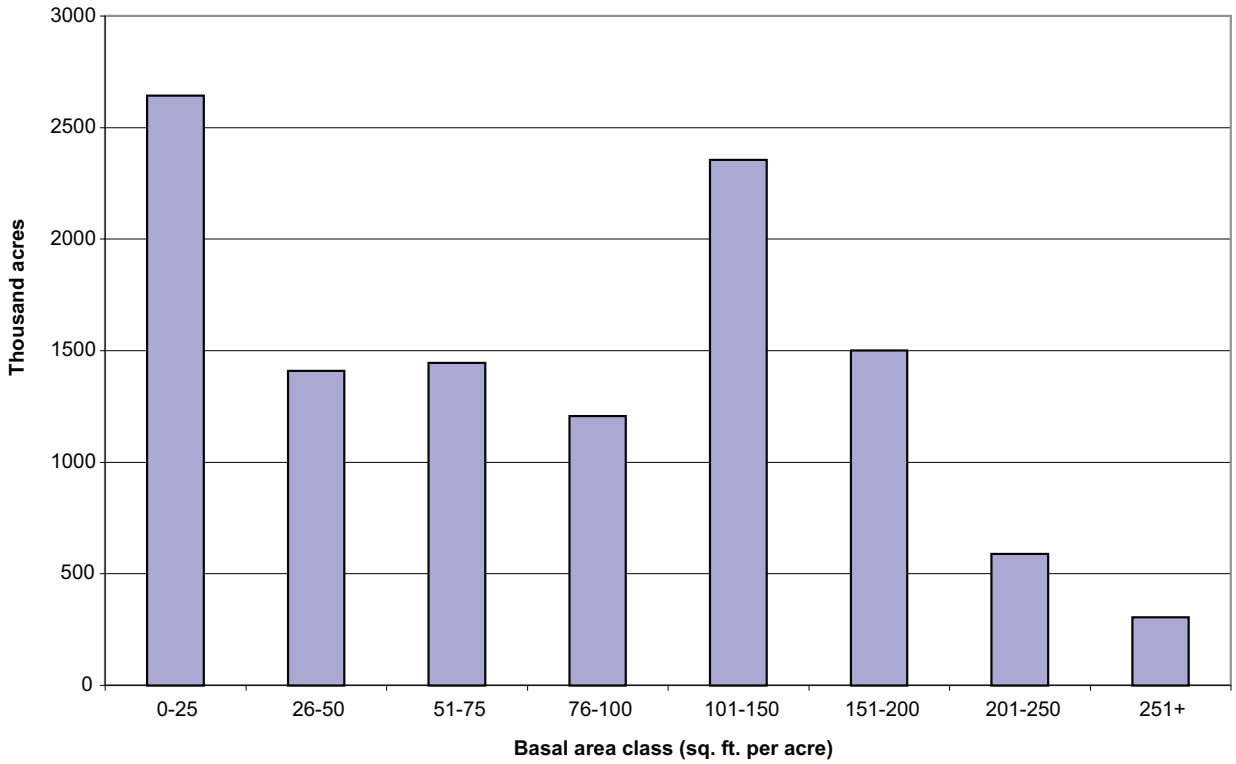

Figure 14—Area of forest land by basal-area class, Wyoming, 2002.

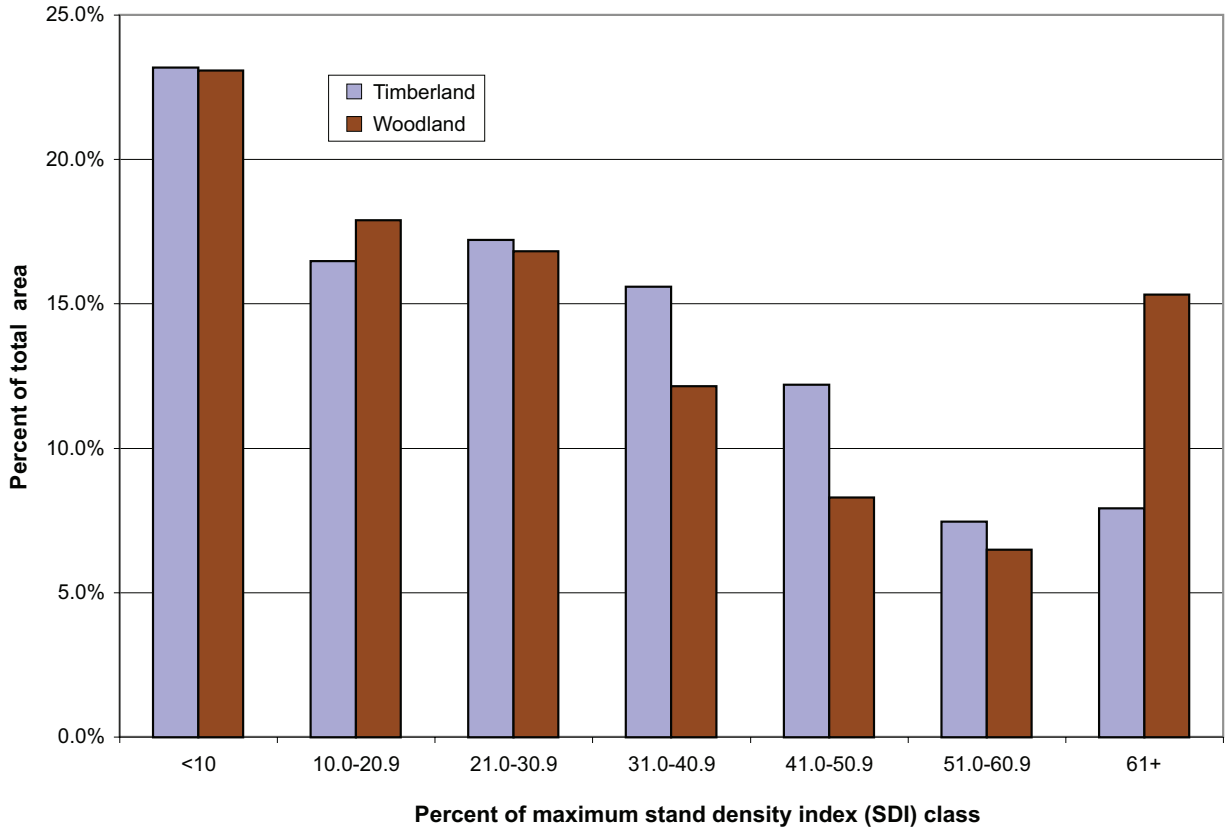

Figure 15—Distribution of forest area by percent of maximum stand density (SDI) class and forest-land class, Wyoming, 2002.

percent of SDI maximum, which marks the onset of competition-related stresses and slowed growth rates. The IW-FIA survey estimates that 35 percent of all forest stands in Wyoming are at or above 35 percent of SDI maximum.

Number of Trees

The number and distribution of individual tree species is another indicator of forest diversity. Softwood species are predominate, with lodgepole pine being the single most abundant species on forest land in Wyoming. Lodgepole pine totals 1.2 billion trees, or 27 percent of all live trees on forest land. Second in abundance is subalpine fir, which accounts for 25 percent of all live trees on forest land, and Engelmann spruce is third at 11 percent.

Lodgepole pine also predominates on forest land that is classified as timberland, followed by subalpine fir and Engelmann spruce. Together, these three species account for two-thirds of all live trees on timberland (fig. 16). The number of live trees on forest land that is classified as woodland totals 232 million trees. Rocky Mountain juniper is the single most abundant species occurring on woodland in Wyoming and accounts for 45 percent of the woodland total (fig. 17). Second in abundance is Utah juniper, which totals 72 million trees or 31 percent of the woodland total. Other species recorded on woodland include Rocky Mountain maple, curleaf mountain-mahogany, and ponderosa pine.

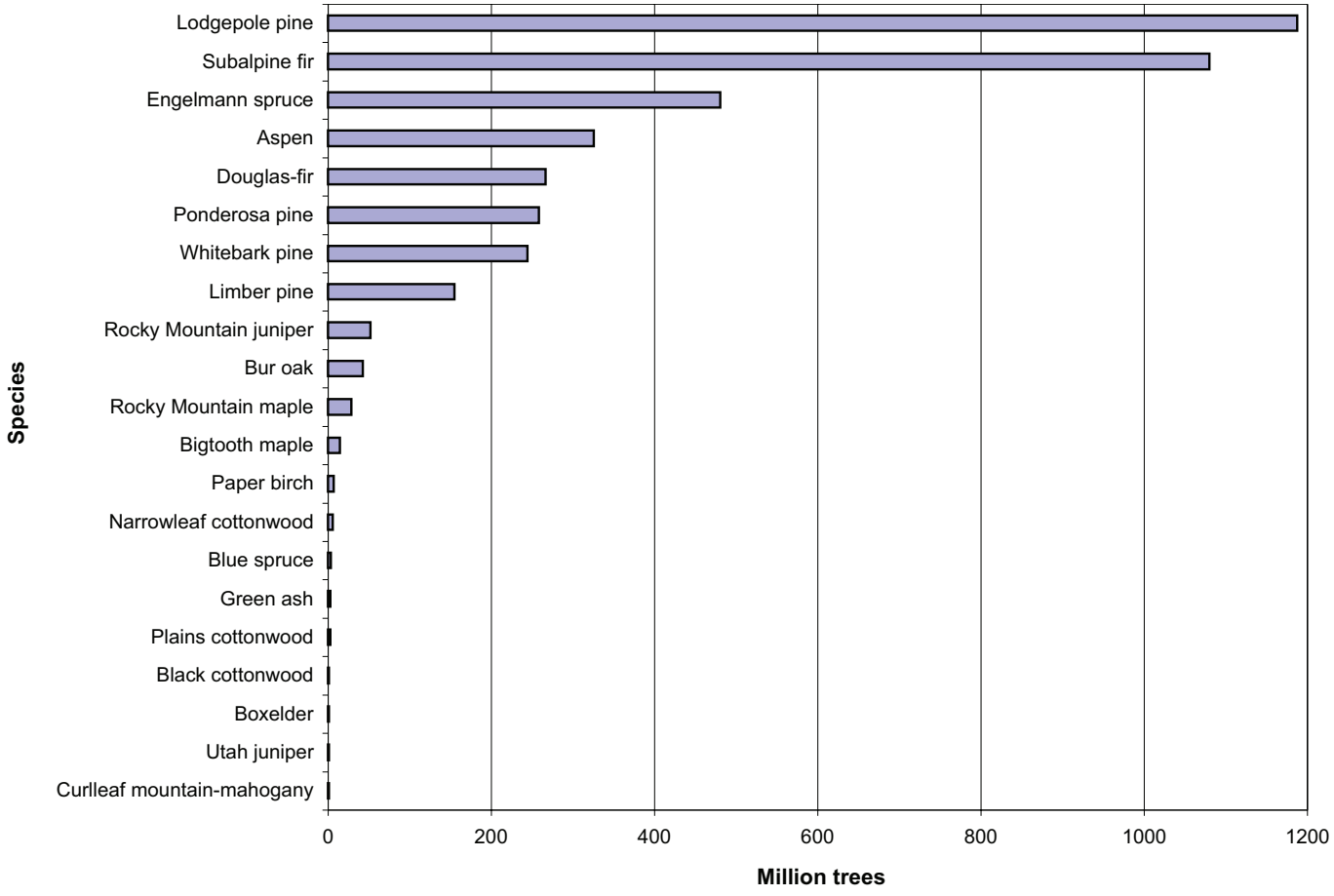

Figure 16—Number of live trees by species on timberland, Wyoming, 2002.

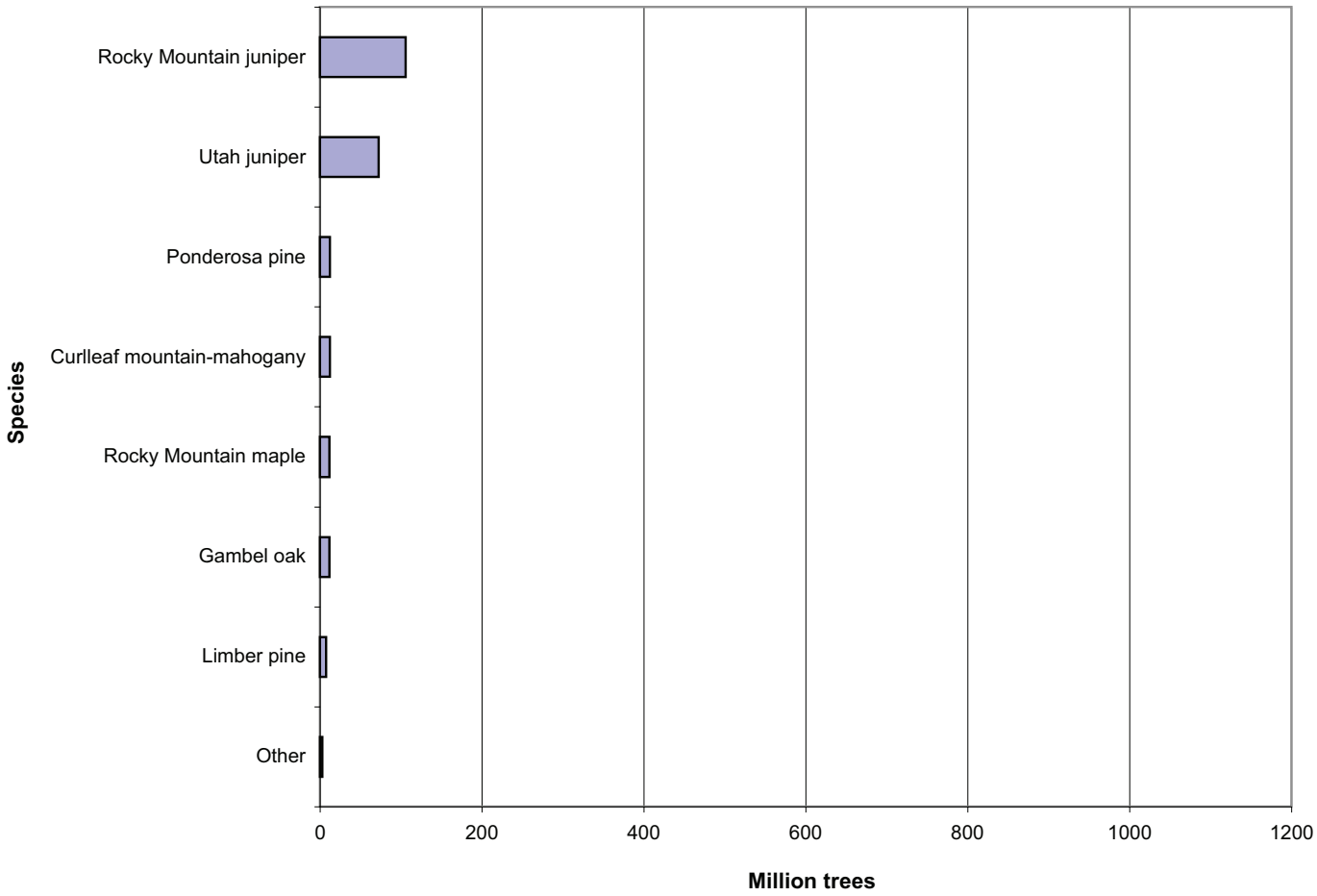

Figure 17—Number of live trees by species on woodland, Wyoming, 2002.

Figure 18 illustrates the distribution of numbers of live trees on timberland and woodland by diameter class (includes d.b.h. and d.r.c.). Sixty-one percent of all live trees on forest land are less than 5 inches in diameter. Less than one percent of all live trees are larger than 22 inches in diameter.

Dead trees, often referred to as snags, are a significant component of forest ecosystems, contributing to habitat for many species of wildlife and soil nutrients. Snags also play an important role in fire-related analysis because of their contribution to fuel sources. The most recent inventory of Wyoming forests recorded slightly less than 1 billion standing dead trees, and 45 percent were greater than 5.0 inches in diameter. Lodgepole pine accounted for the majority (39 percent) of standing dead trees in Wyoming and subalpine fir was second in abundance (21 percent). The mean number of standing dead trees 5.0 inches in diameter and larger averages 38 trees per acre on forest land, 42 on timberland, and 9 on woodland. These averages represent total forest land area and do not account for the uneven distribution of standing dead trees caused by fire, disease, and insect outbreaks. For example, there are significant numbers of standing dead trees in Yellowstone National Park as a result of the large scale fires that occurred in 1988. The average number of standing dead trees 5.0 inches in diameter and larger on National Park land in Wyoming is nearly 89 trees per acre.

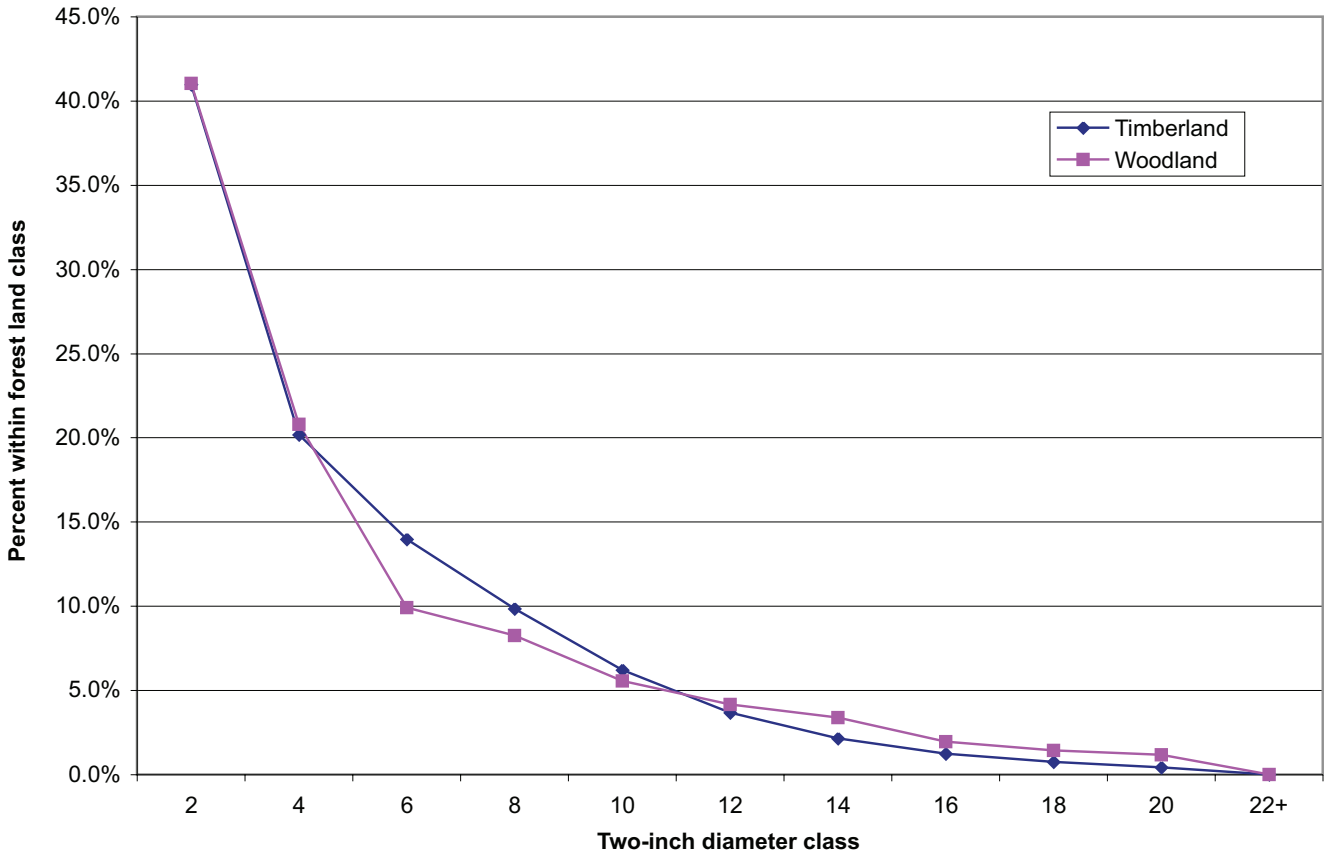

Figure 18—Distribution of live trees by forest land class and two-inch diameter class, Wyoming, 2002.

Biomass and Volume

The total oven-dry biomass of all live trees in Wyoming is 350 million tons. Biomass includes boles, bark, and branches of all live trees. Biomass on timberland totals 345 million tons (fig. 19) and 5 million tons on woodland (fig. 20). Lodgepole pine accounts for 30 percent (105 million tons) of the biomass total in the State. Figure 21 spatially displays oven-dry biomass of live trees in Wyoming.

Net volume of wood in live trees 5.0 inches in diameter and larger in Wyoming totals 19.8 billion cubic feet. Softwoods account for 96 percent of this total volume. Lodgepole pine, Engelmann spruce, and subalpine fir collectively account for 70 percent of the total softwood volume in the State. Aspen accounts for the majority (73 percent) of the hardwood volume total, and plains cottonwood accounts for 15 percent.

Growth and Mortality

Forest growth, for FIA reporting purposes, is an estimate that provides additional information about trends in the population estimate of inventory volume. As time passes, the total volume of live trees in a region or State increases, decreases, or remains the same. These changes can be explained, in part, by examining the dynamics of live tree growth, tree mortality, and trees removed by harvesting practices. Forest growth is a complex estimate for broad-scale inventories. It is not always easy to measure, it is very sensitive to changes in sampling procedures over time, and can be defined in several different ways.

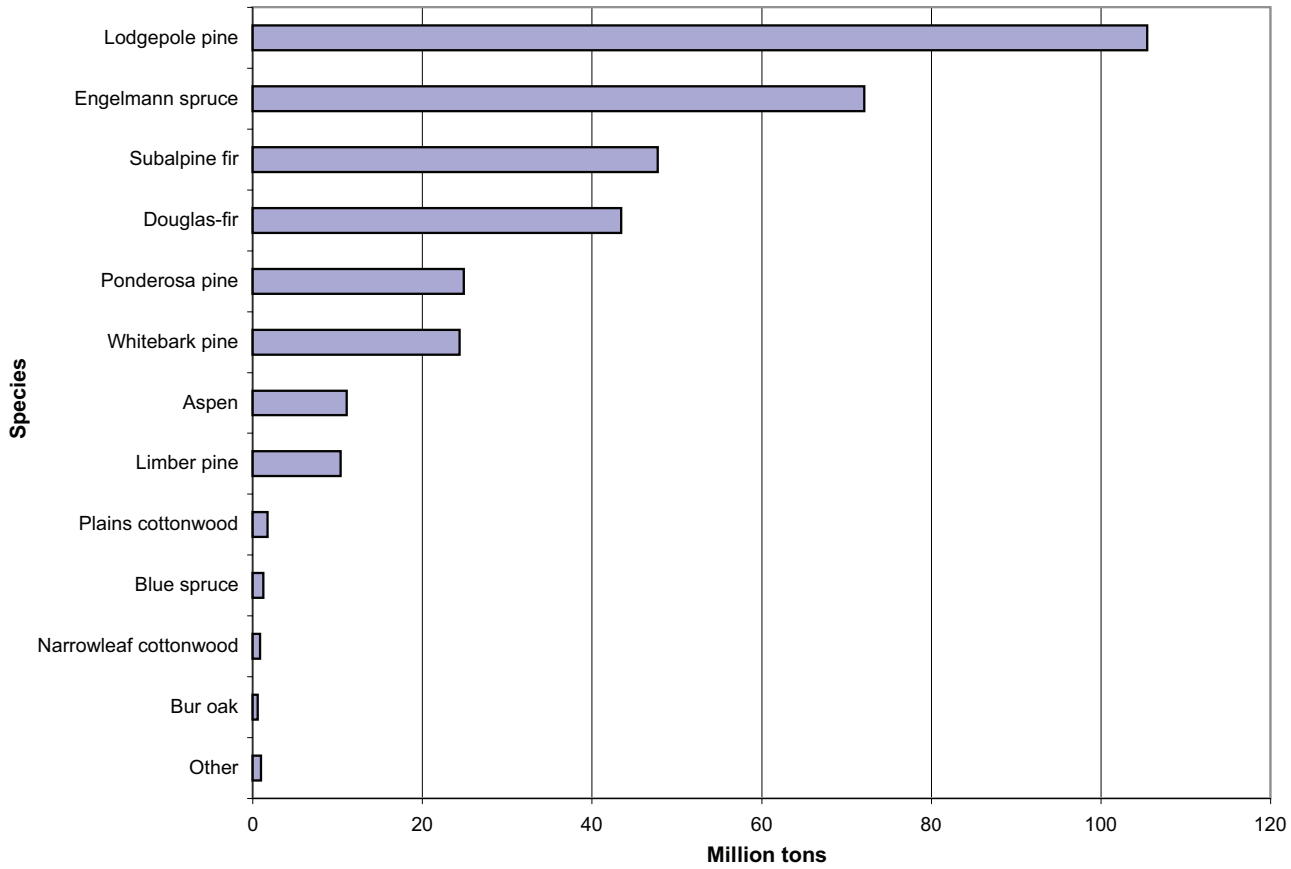

Figure 19—Oven-dry weight of biomass of all live trees by species on timberland, Wyoming, 2002.

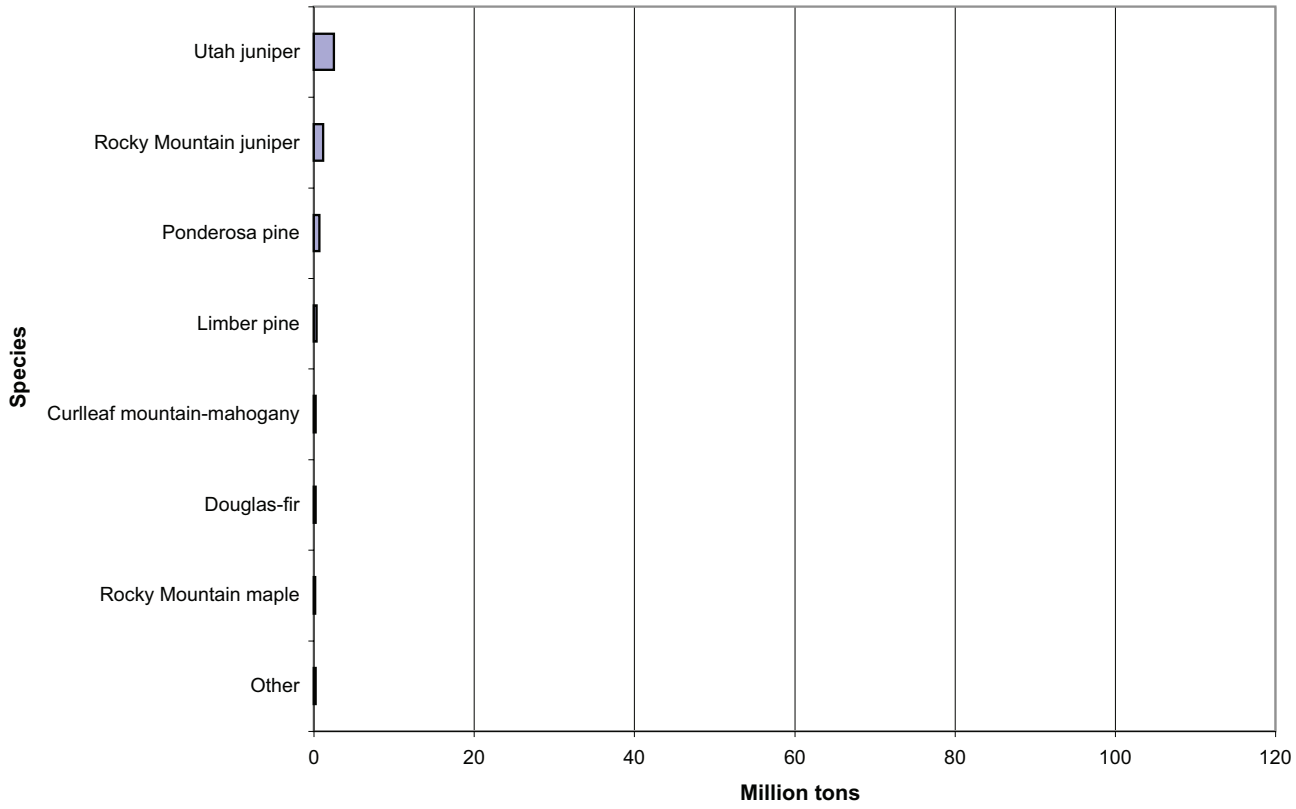

Figure 20—Oven-dry weight of biomass of all live trees by species on woodland, Wyoming, 2002.

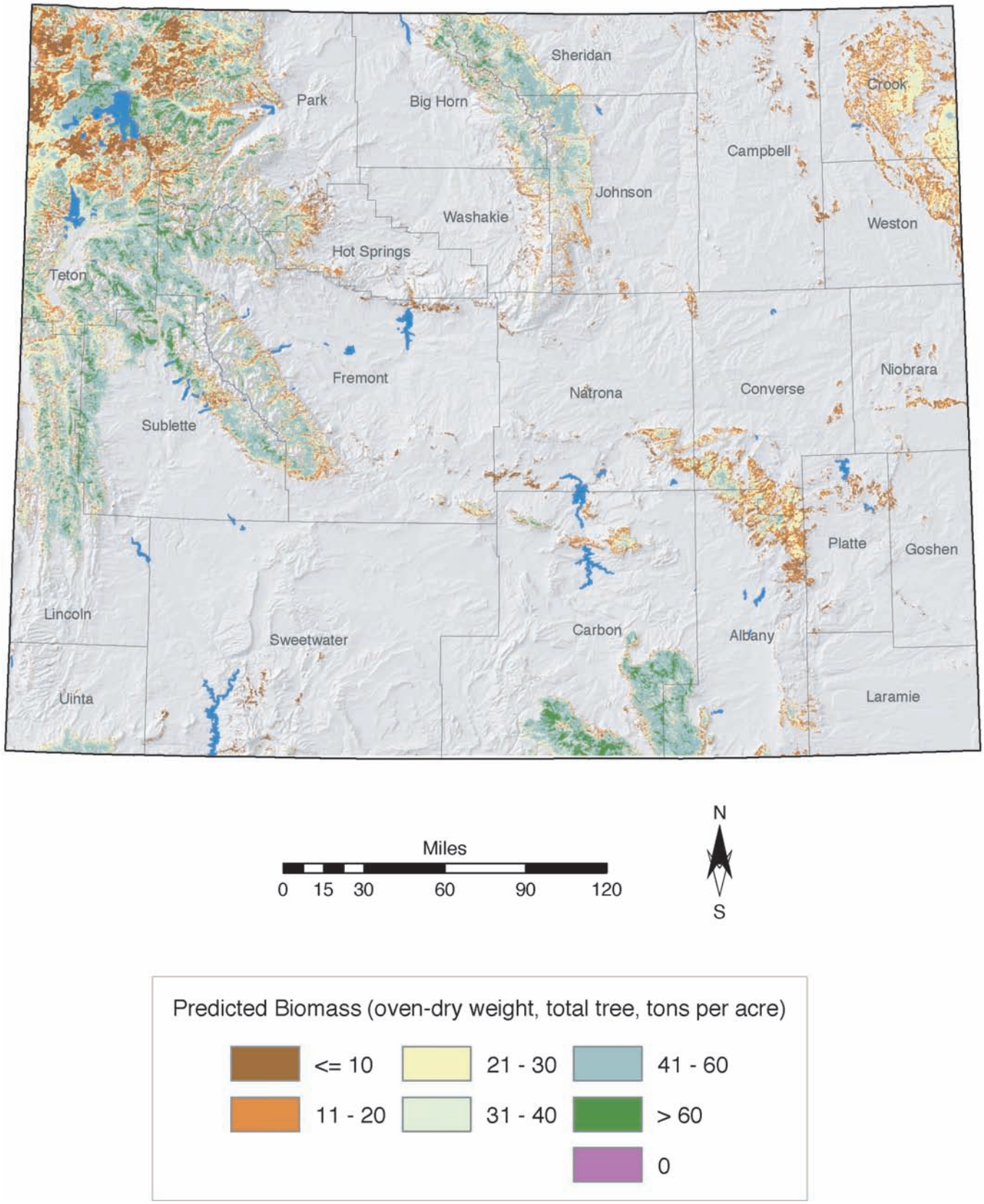

Figure 21—Oven-dry weight of all live tree biomass on forest land, Wyoming, 2002.

For these and related reasons, it is necessary to divide forest growth into component parts to arrive at consistent definitions. All estimates of growth and mortality are for trees 5.0 inches and larger in diameter at the year of inventory. Live tree growth is determined from increment core measurements and is expressed as an annual average over a 10-year period. Survivor growth is the average annual change in volume for trees that are alive in the current inventory and were estimated to be equal to or greater than 5.0 inches in diameter 1 year prior to the current inventory. Ingrowth is the current volume of trees that are alive in the current inventory and were estimated to be below 5.0 inches in diameter 1 year prior to the current inventory. Mortality is the average annual net volume of trees that have died in the 5 years prior to the year of inventory. Removal volume is the average annual net volume of trees that were removed from the inventory as the result of harvesting activity. The estimate of Wyoming's removal volume was obtained from a separate study and is explained in the "Nonreserved Timberland" section. Gross annual growth is the sum of survivor growth, ingrowth, and mortality. Net annual growth is gross annual growth minus annual mortality.

Gross annual growth of all trees on forest land in Wyoming totaled 331 million cubic feet. Gross growth of all trees averaged 327 million cubic feet on timberland and 4 million cubic feet on woodland (figs. 22 and 23). Annual mortality of all trees on forest land in Wyoming averaged 172 million cubic feet. Annual mortality of all trees averaged 171 million cubic feet on timberland and less than 2 million cubic feet on woodland.

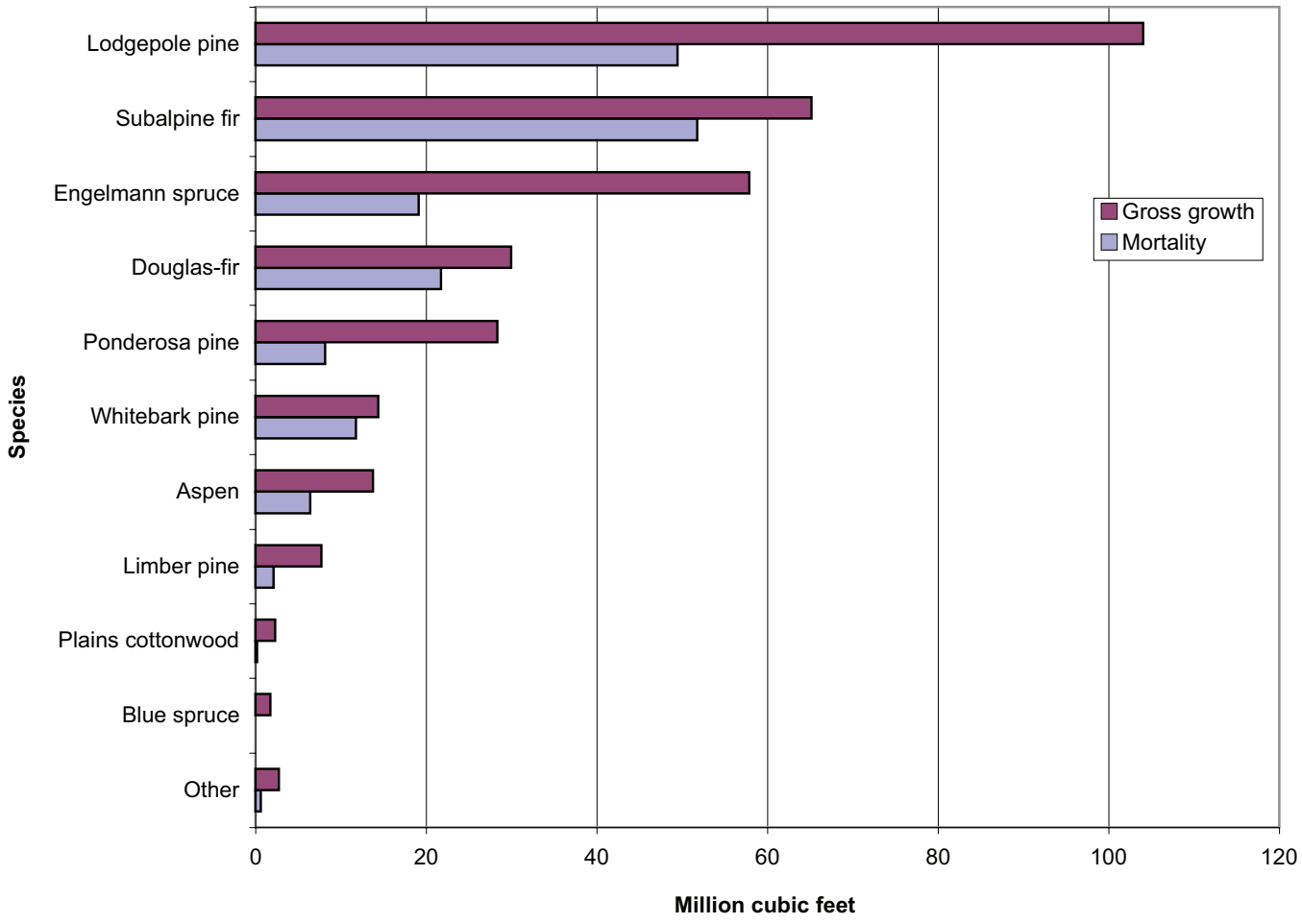

Figure 22—Gross annual growth and annual mortality of all trees by species on timberland, Wyoming, 2002.

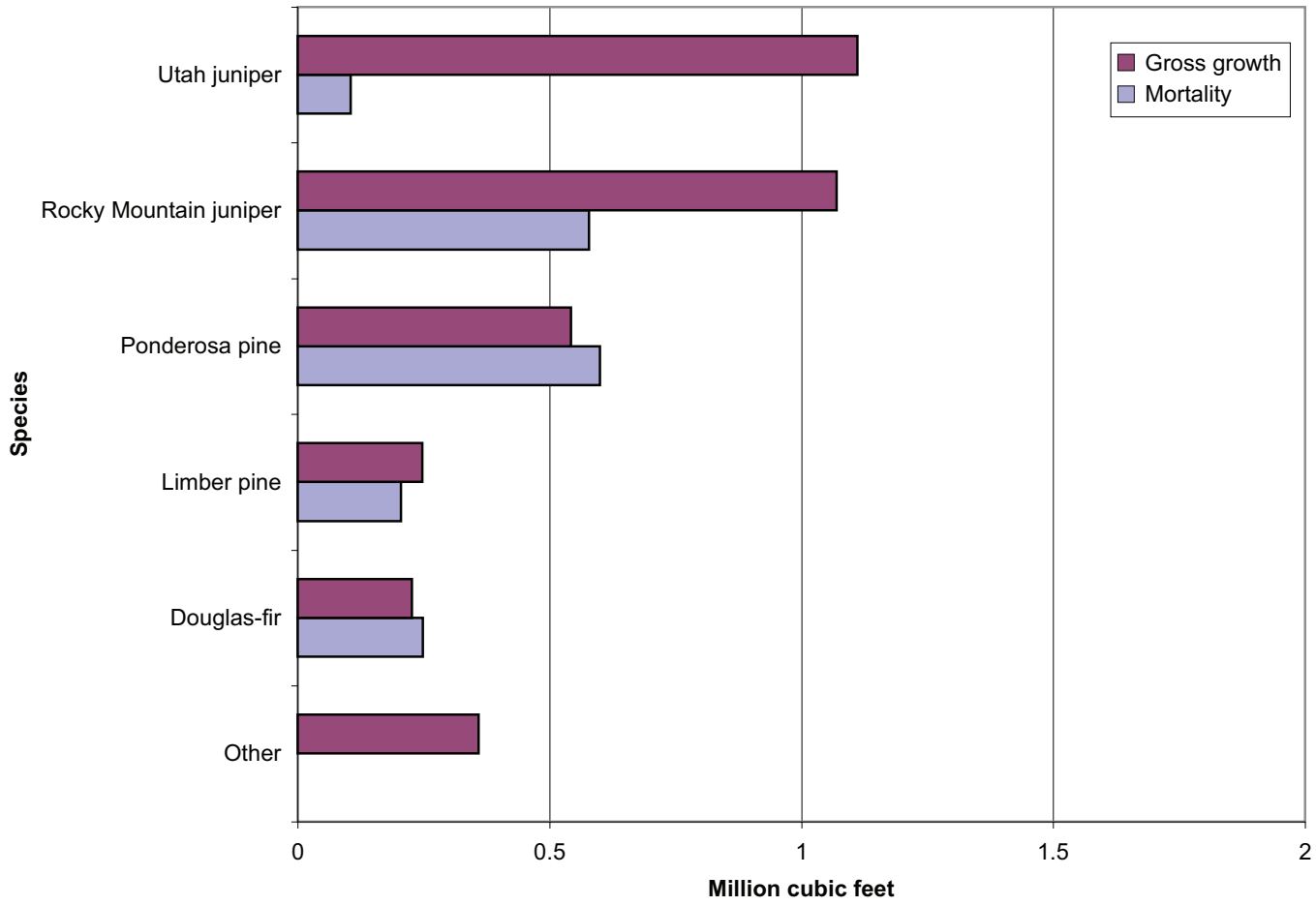

Figure 23—Gross annual growth and annual mortality of trees by species on woodland, Wyoming, 2002.

The relationship between mortality and gross growth can be used to assess overall forest health. High levels of mortality relative to gross growth often indicate deteriorating stand conditions due to stagnation, fire, disease, insects, weather, or a combination of factors. This relationship is usually expressed as a percentage of annual mortality that is deducted from the annual gross growth estimate. Across all forest land, annual mortality reduced gross growth by 52 percent. The amount that annual mortality reduced gross annual growth varied significantly by species (figs. 22 and 23). Of those species occurring on timberland, annual mortality of whitebark pine reduced gross annual growth by 82 percent followed by subalpine fir at 79 percent. Of those species occurring on woodland, annual mortality of ponderosa pine and Douglas-fir reduced gross annual growth by 110 percent.

Highlights of Inventory Results for Nonreserved Timberland

Area and Volume

Wood products are important to local and regional economies, and the majority of these products are obtained from the harvesting activities that occurred on nonreserved timberland. Nonreserved forest land is not withdrawn from management for production of wood products through statute or administrative designation, and the timberland

classification generally refers to forest land comprised of tree species suitable for timber products. Nonreserved timberland in Wyoming totals 57 percent (6.5 million acres) of the total forest area. National Forest lands account for 62 percent (4.0 million acres) of nonreserved timberland; nonindustrial private lands account for 23 percent, and land controlled by other public owners account for the remaining 15 percent of nonreserved timberland in the State.

The total volume of growing stock on nonreserved timberland is over 11.5 billion cubic feet, with 78 percent occurring on National Forest land. Lodgepole pine comprises the greatest percentage (29 percent) of growing-stock volume on nonreserved timberland. The volume of sawtimber on nonreserved timberland totals 37.3 billion board feet (Scribner rule), with 80 percent occurring on National Forest land. Engelmann spruce comprises the greatest percentage (26 percent, or 9.6 billion board feet) of sawtimber volume on nonreserved timberland. Second in abundance, lodgepole pine comprises 23 percent (8.5 billion board feet) of the sawtimber total.

The evaluation of growing-stock volume on a per-acre basis minimizes the effect of differences in the amount of area by ownership class. Across all ownerships, the average net volume per acre on nonreserved timberland is 1,780 cubic feet, and 2,251 cubic feet per acre on National Forest Systems land. In contrast, net volume per acre on other public and nonindustrial private land averages 999 and 1,044 cubic feet, respectively (fig. 24). Sawtimber volume on National Forest land averages 7,442 board feet per acre compared to 2,681 and 3,220 board feet per acre on other public and nonindustrial private land, respectively (fig. 25). Figure 26 spatially illustrates net cubic foot volume per acre of growing-stock trees on forest land in Wyoming.

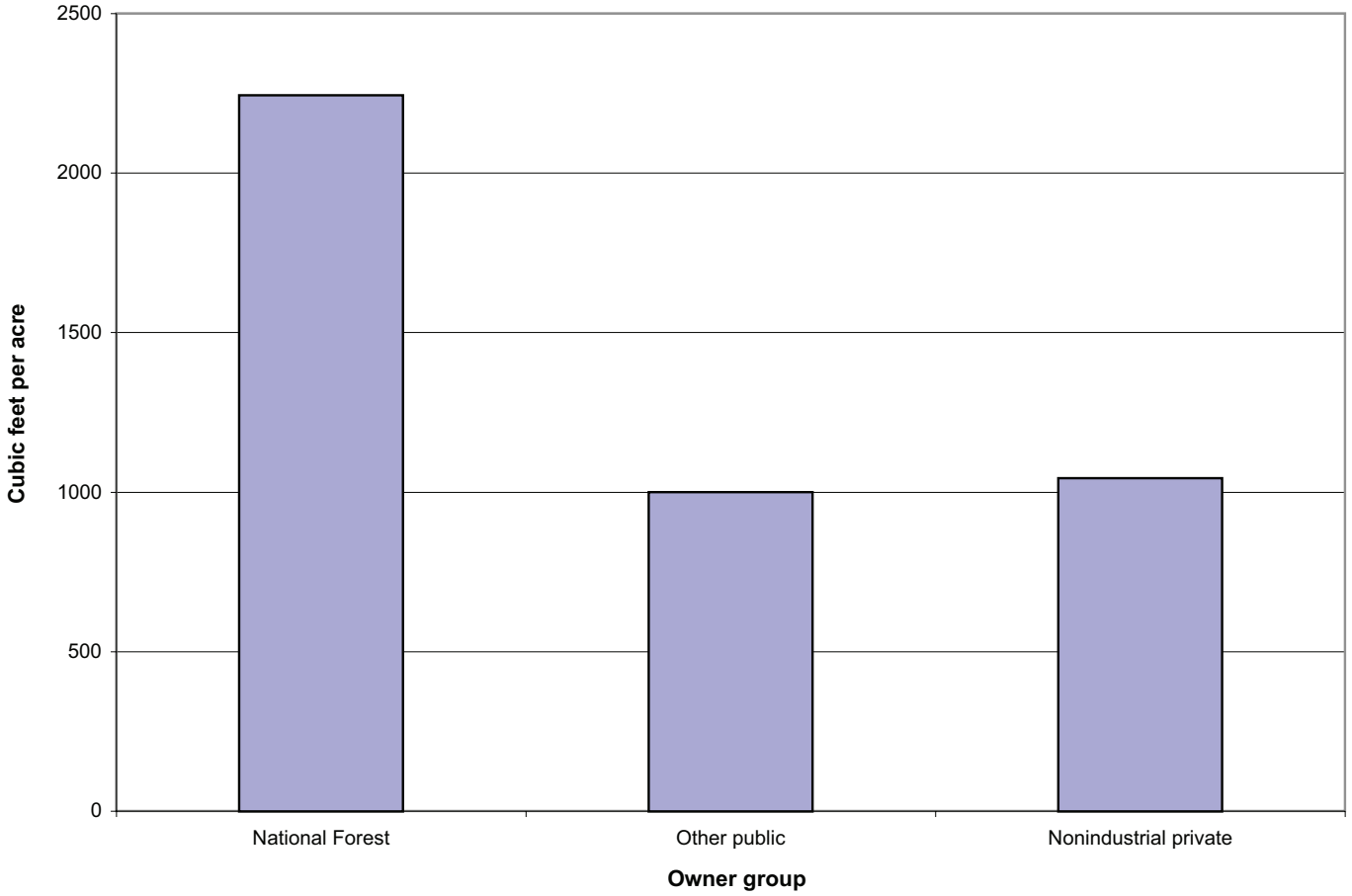

Figure 24—Average net growing-stock volume per acre by owner group on nonreserved timberland, Wyoming, 2002.

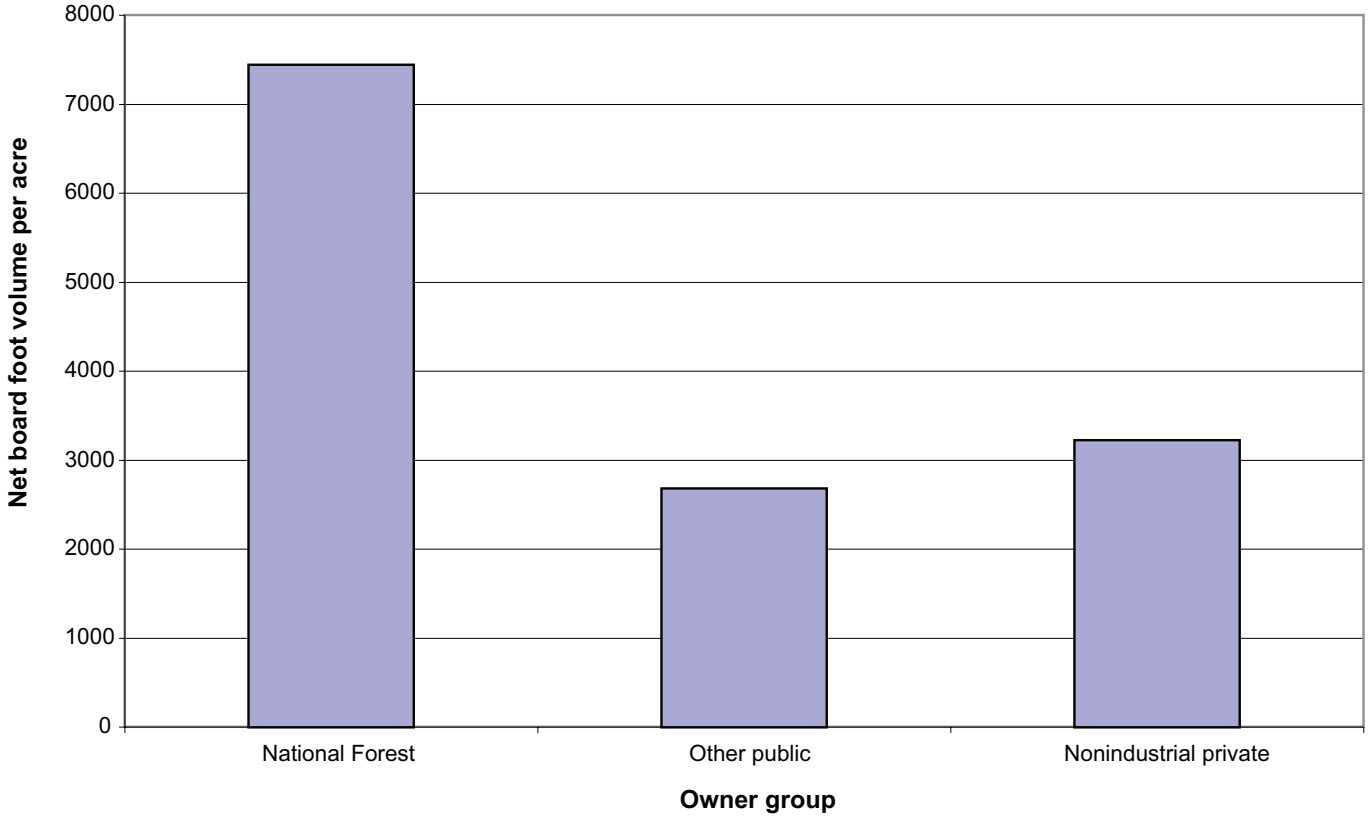

Figure 25—Average net sawtimber volume per acre by owner group on nonreserved timberland, Wyoming, 2002.

Removals for Timber Products

The net volume of growing-stock trees removed from the inventory by harvesting, cultural operations, land clearing, and changes in land use, is known as removals. This section deals with removals for timber products. These removals include both the volume processed in mills and the volume harvested or killed but not used. Removals, as reported here, are based on data from 1 year (2000). More details about Wyoming's primary forest products industry can be found in Morgan and others (2005). Tables 79 through 81 show harvest and removals by product, species, and ownership group in cubic feet for growing stock removals as well as board feet—Scribner and International—for sawtimber removals.

About 15.4 million cubic feet of wood, exclusive of land clearing volume and changes in land use, were removed from growing stock on Wyoming's nonreserved timberland in 2000. Ninety-four percent of the volume was used for wood products, less than 1 percent was used for industrial fuelwood, and 6 percent was left in the woods as logging residues. Sawlogs were the largest component of removals from growing stock, followed by posts, poles, and pilings.

National Forests supplied 19 percent of the volume removed from growing stock, other public landowners, including the Bureau of Land Management and the State of Wyoming, provided about 7 percent, and private landowners supplied the majority (74 percent) (fig. 27).

Removals of sawtimber-size trees, or sawtimber removals, included 66.7 million board feet (Scribner log rule) or 74.7 million board feet expressed in International ¼-inch log

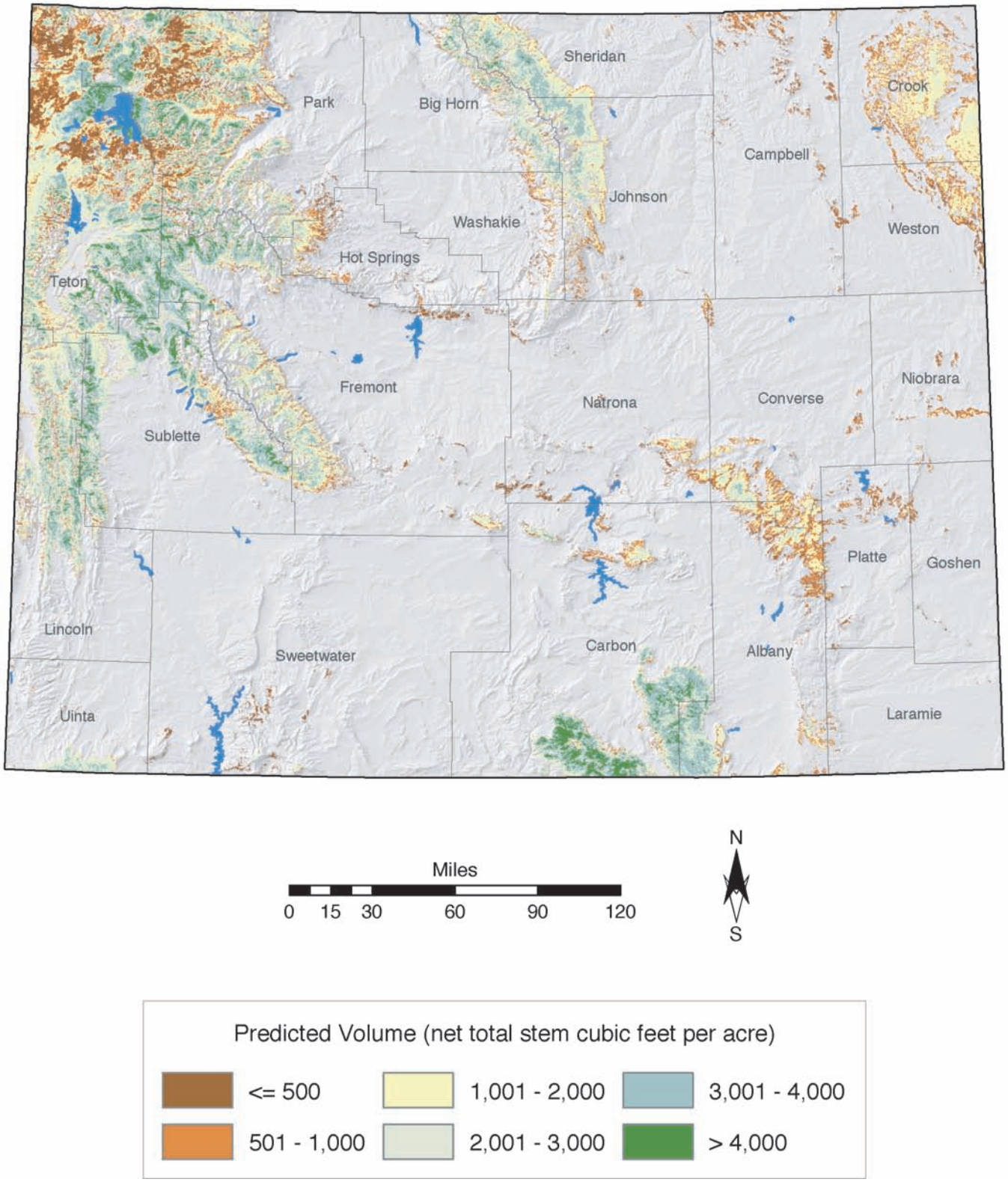

Figure 26—Net cubic foot volume of growing-stock trees on forest land, Wyoming, 2002.

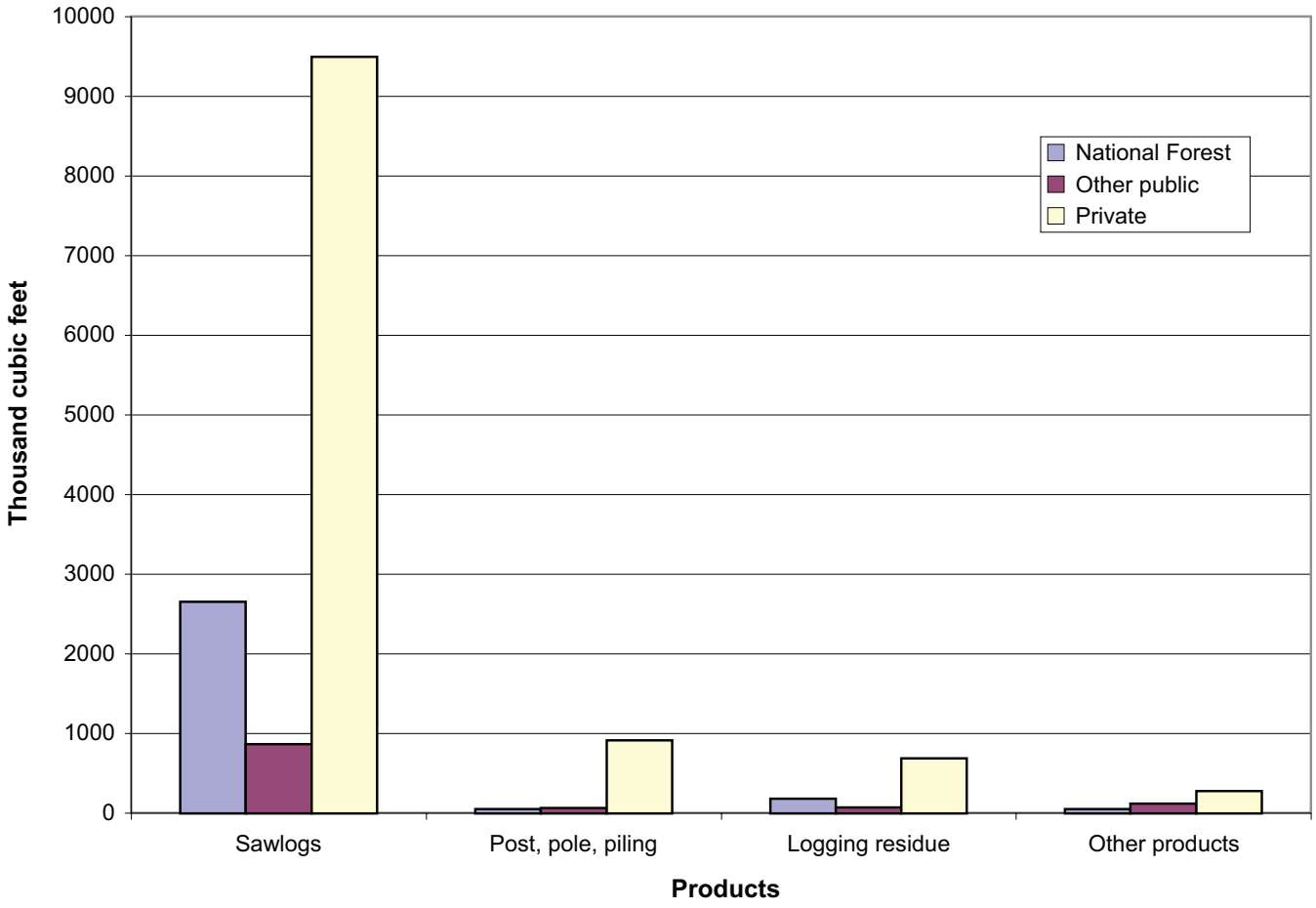

Figure 27—Volume removed from growing-stock inventory, by product and owner group on nonreserved timberland, Wyoming, 2002.

rule. Logs harvested to produce lumber (sawlogs) dominated products harvested from sawtimber, accounting for 95 percent of removals. Logging residues accounted for 1.5 percent of sawtimber removals.

Ponderosa pine was the dominant species harvested, accounting for 62 percent of growing stock removals and 67 percent of sawtimber removals. Lodgepole pine accounted for 25 percent of growing stock removals and 21 percent of sawtimber removals. Douglas-fir, spruces, and true firs accounted for nearly all of the volume of the remaining removals.

Components of Change

Net annual growth is defined as gross annual growth volume minus average annual mortality volume. Net change is defined as net annual growth volume minus the average annual volume removed due to harvesting activity (removals). Positive net change usually indicates an increasing inventory over time whereas negative net change indicates a declining inventory. Figure 28 illustrates the relationship of net growth of growing stock to annual removals for select species groups on nonreserved timberland. Note that the net growth estimate is an annual average based on 10 years for gross annual growth and 5 years for annual mortality, whereas the removals data were collected over a 1-year period. All of the listed species groups indicate that the estimated average an-

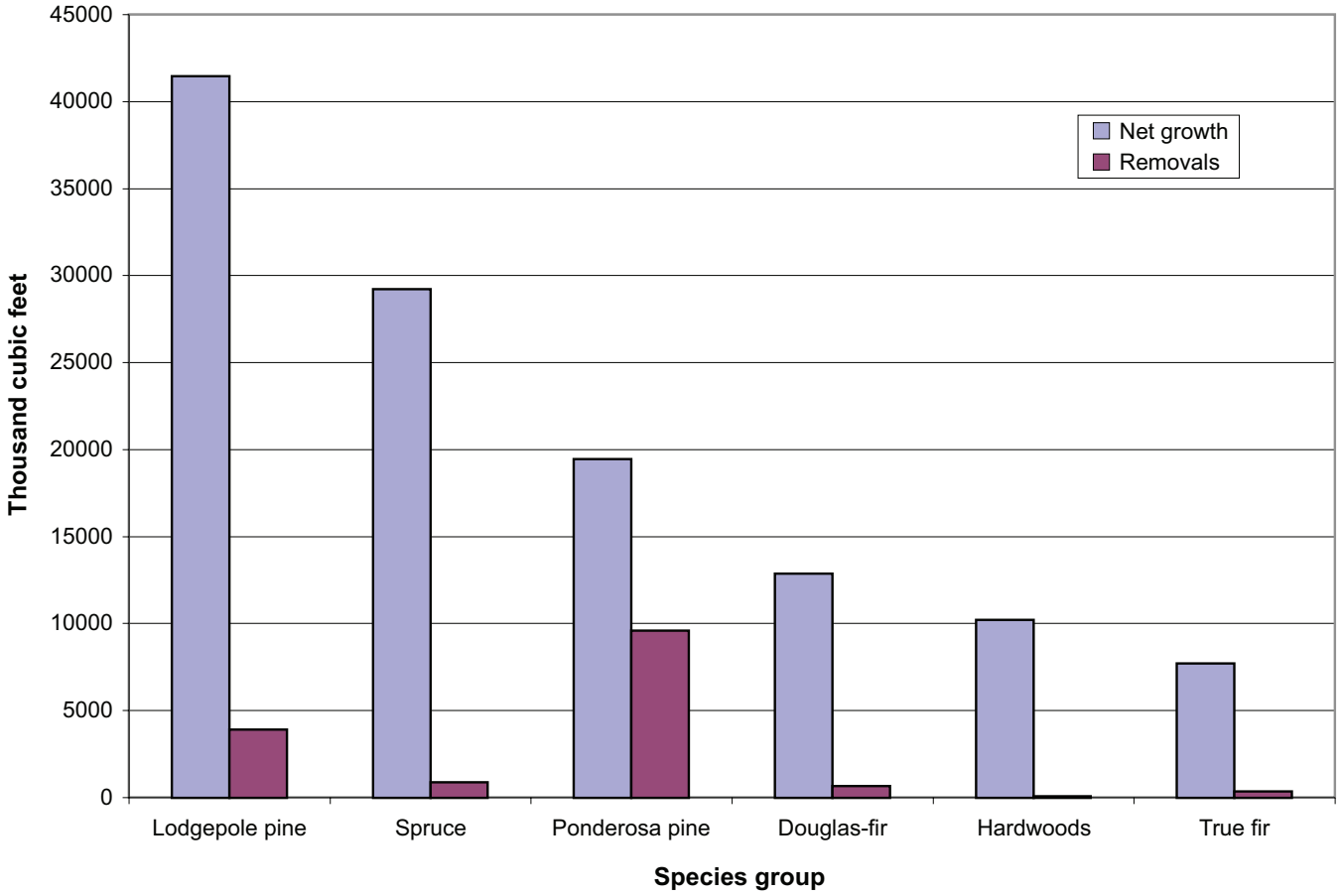

Figure 28—Net annual growth of growing stock compared to removals by species group on nonreserved timberland, Wyoming, 2002.

nual net growth exceeded the amount of wood volume removed for 1 year (fig. 28). When all of the listed species are combined, net growth of growing stock exceeded the growing stock removal estimate by a ratio of 8 to 1. The narrowest margin of growth to removals was indicated by ponderosa pine, where net growth exceeded removals by a margin of 2 to 1.

Wyoming, along with Idaho and Montana, is part of the Northern Rockies. The Northern Rockies is regarded as containing the largest resource for supplying timber products to the wood-using industry in the Interior West. Timber processing capacity is the volume of timber that could be used by existing timber processors if demand for products is firm and sufficient raw material is available. Timber processing capacity for the Northern Rockies has steadily declined over the past 2 decades, largely because of their dependence on National Forest timber. Historically, Federally owned timberland in Wyoming supplied the majority of growing-stock removals for the State. Now, National Forests only supply 19 percent of the growing-stock removals, yet they control 63 percent of the nonreserved timberland in Wyoming. The restricted timber availability on Wyoming's National Forests is the result of numerous constraints, such as appeals and litigation of timber sales, threatened and endangered species protection, and impacts of past harvesting practices on other natural resources, such as water quality and wildlife. The current relationship of growing-stock net growth to growing-stock removals on Wyoming's nonreserved timberland suggests an adequate supply of inventory volume that will increase for the foreseeable future.

Highlights of Inventory Results for Reserved Forest Land

Reserved lands are withdrawn from management for production of wood products through statute or administrative designation. Unlike nonreserved timberland, reserved forest land is usually set aside legislatively for preservation purposes, such as Yellowstone National Park. Reserved forest land totals 3.8 million acres in Wyoming. Nearly all of reserved forest land is classified as timberland. Fifty-two percent of reserved forest land is administered by National Forests and 46 percent is administered by National Parks (fig. 29).

Lodgepole pine is the predominant forest type on reserved forest land (1.4 million acres) (fig. 30). Next in abundance is the spruce-fir type (20 percent), followed by Engelmann spruce at 14 percent of reserved forest land. Whitebark pine accounts for 10 percent of reserved forest land and nonstocked timberland accounts for 9 percent.

Lodgepole pine is the predominant species in terms of biomass and volume on reserved forest land (fig. 31). Oven-dry weight of lodgepole pine biomass is 36 percent (47 million tons) of the reserved biomass total. Second in abundance is Engelmann spruce at 28 percent (37 million tons) of the total. Subalpine fir and whitebark pine account for 13 and 12 percent, respectively.

Two noteworthy differences between reserved forest land and nonreserved forest land occur in the stand age profiles and gross growth/mortality relationships. Reserved forest land is more heavily comprised with older forest stands than nonreserved forest land (fig. 32). Over 33 percent of reserved forest land resides in stands greater than 150 years of age compared to only 16 percent of nonreserved forest land. The annual estimate of gross growth exceeds the annual estimate of mortality on reserved land by 32 percent (fig. 33). In contrast, gross growth exceeds mortality by 143 percent on

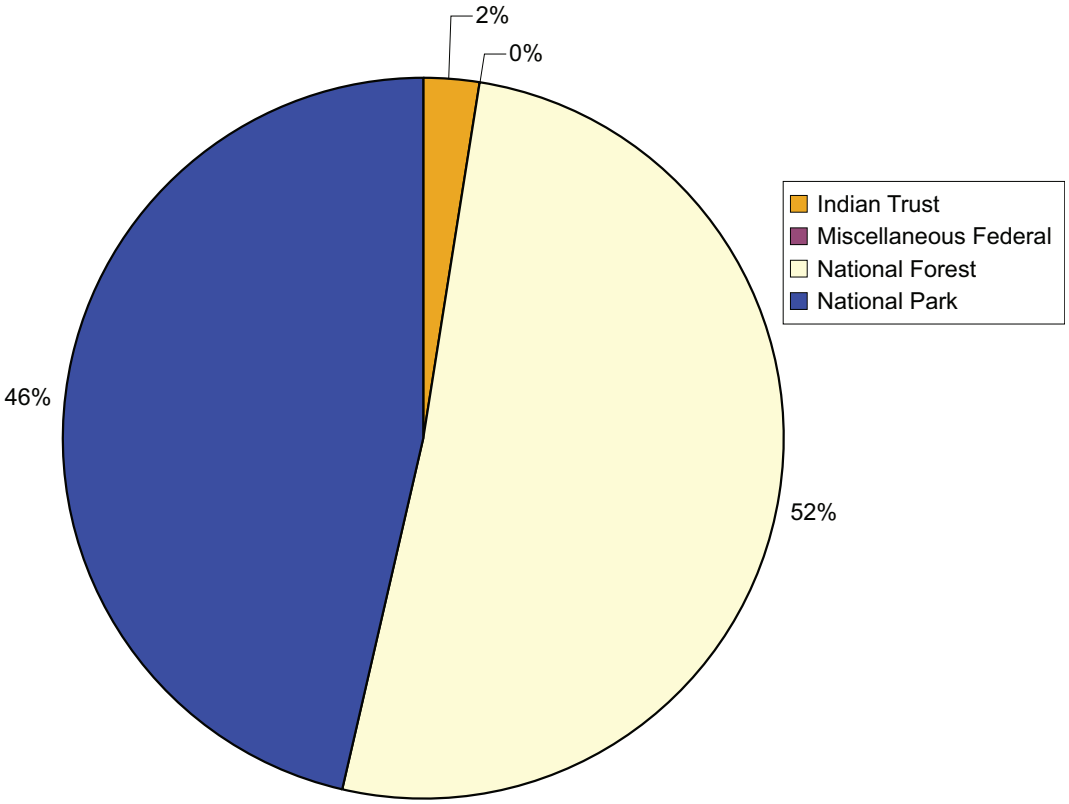

Figure 29—Area of reserved forest land by owner group, Wyoming, 2002.

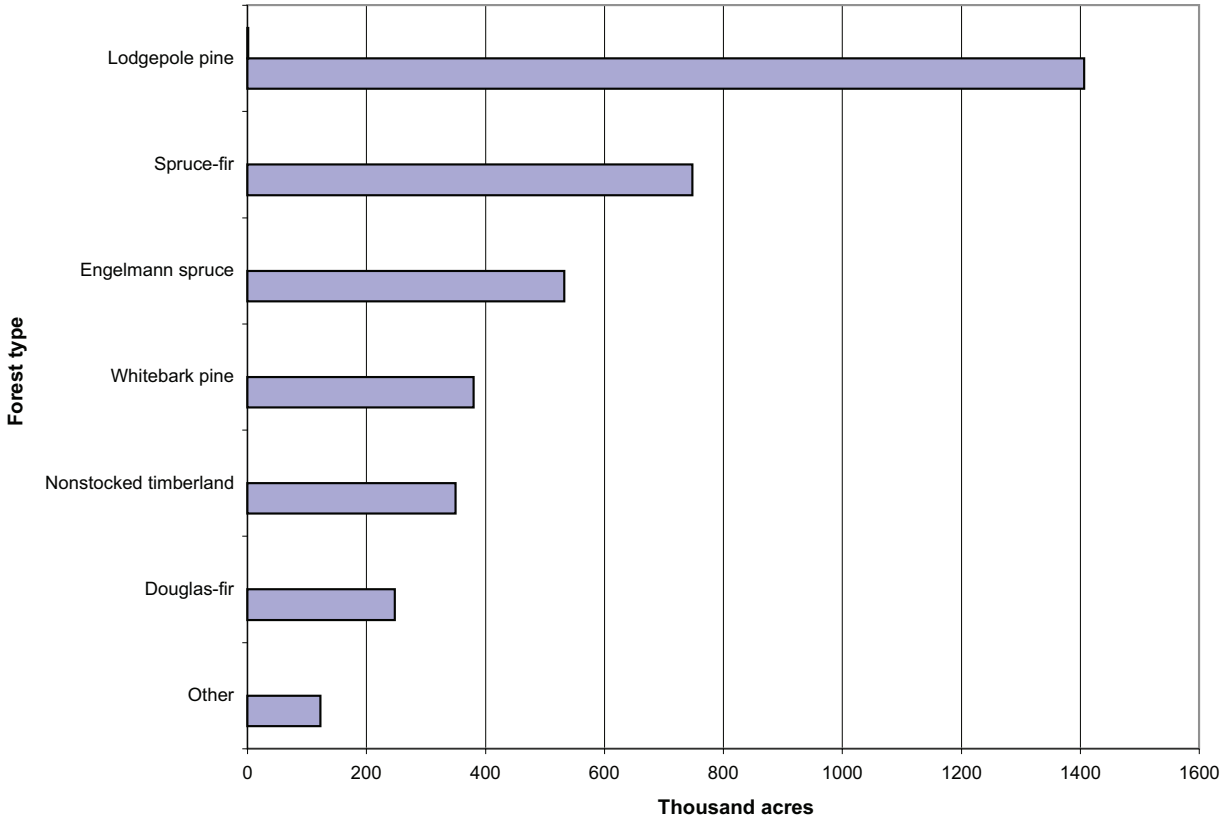

Figure 30—Area of reserved forest land by forest type, Wyoming, 2002.

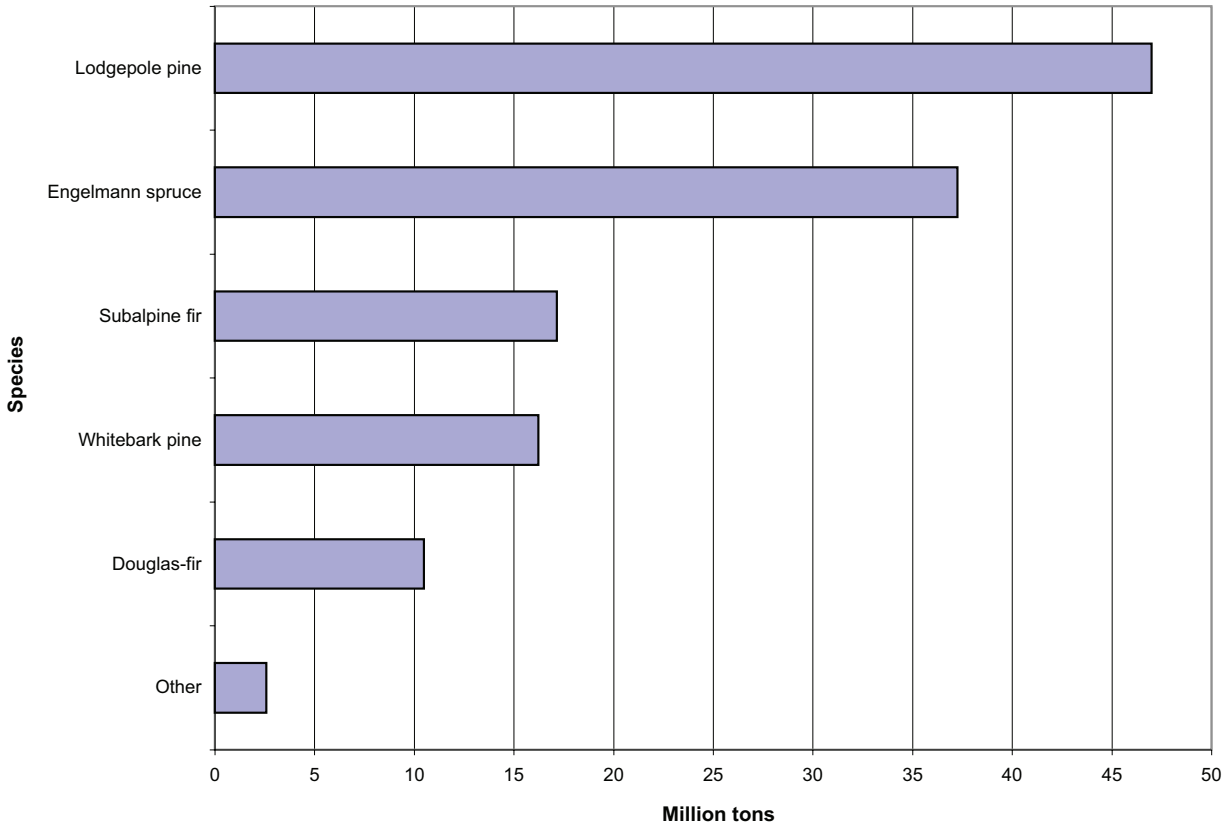

Figure 31—Oven-dry weight of biomass of all live trees by species on reserved forest land, Wyoming, 2002.

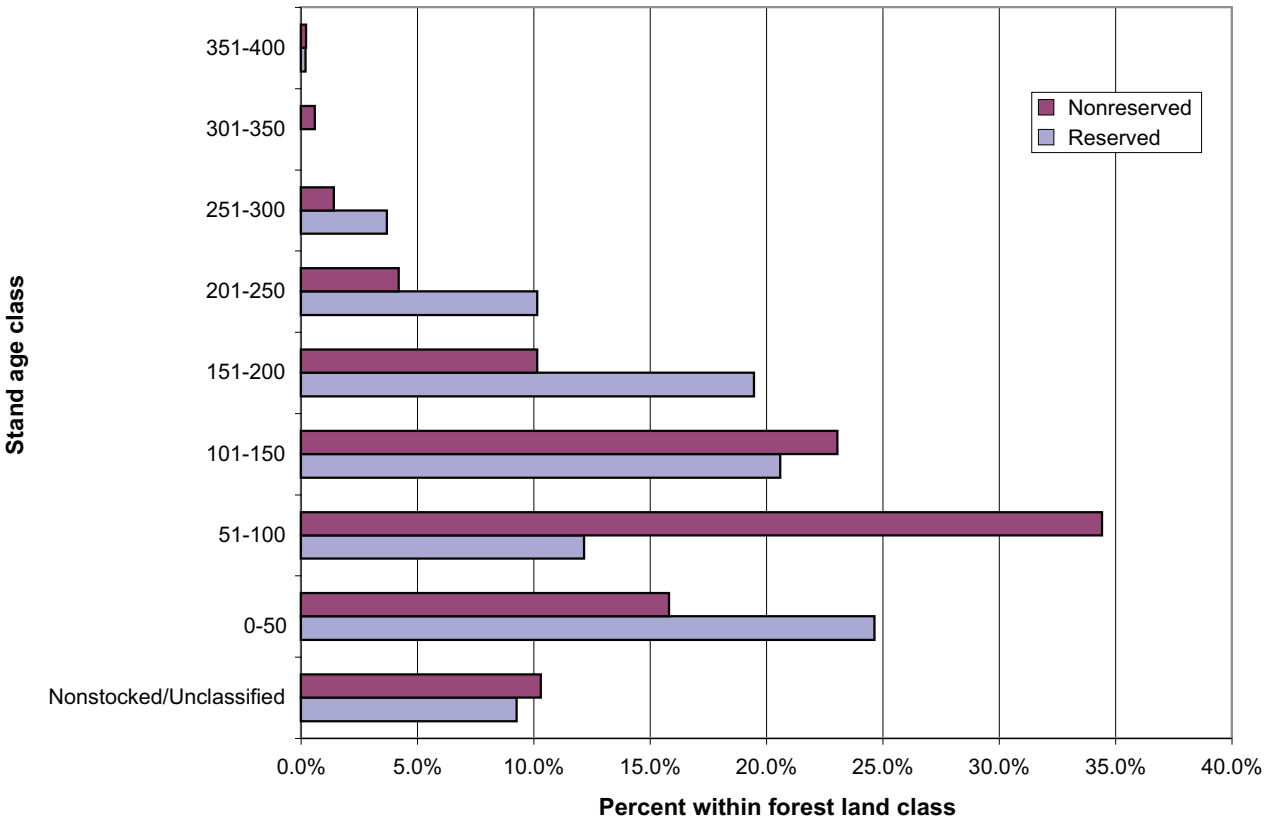

Figure 32—Distribution of reserved and nonreserved forest land by stand-age class, Wyoming, 2002.

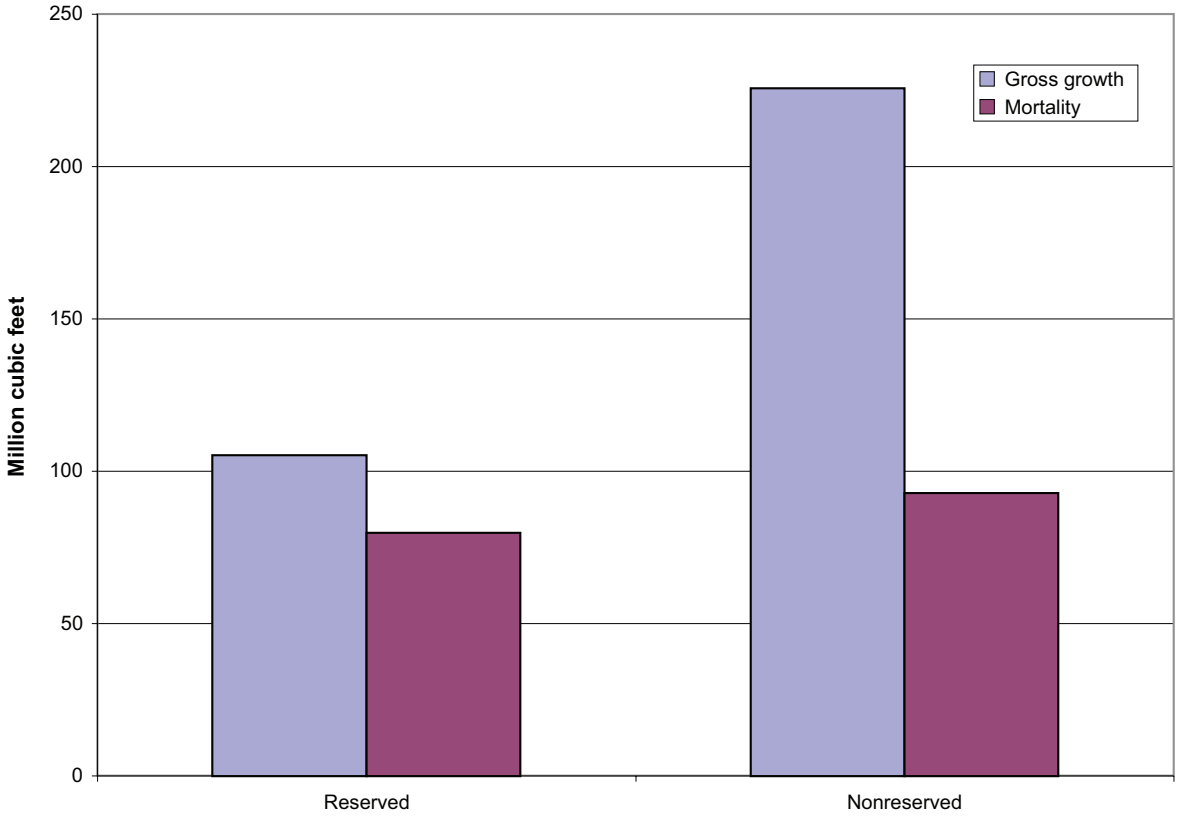

Figure 33—Gross growth and mortality of all live trees by reserved and nonreserved forest land, Wyoming, 2002.

nonreserved forest land. These inventory comparisons indicate that, overall, reserved forest land is comprised of older, slow-growing forest stands with elevated levels of mortality compared to nonreserved forest land. However, significant differences in stand structure exist within the forests classified as reserved. The following chapter on Yellowstone National Park's forests, which are a component of reserved forest land, illustrate some of these differences.

Yellowstone National Park

In 1872, President Ulysses S. Grant signed a law declaring that the area known as Yellowstone would forever be "dedicated and set apart as a public park or pleasuring ground for the benefit and enjoyment of the people." This was the first reservation of wild lands for recreational purposes under the direct management of the Federal government. This country's first national park was considered unique by early explorers for its natural beauty, unique geothermal features (such as Old Faithful geyser), and abundant wildlife. This section describes inventory results for the area of Yellowstone National Park within the State of Wyoming.

The FIA's estimate of total land area of Yellowstone National Park in Wyoming is 1.9 million acres, of which 1.6 million acres (84 percent) is forest land. Figure 34 illustrates the area and distribution of forest and nonforest land in Yellowstone National Park in Wyoming. Nearly all of the forest land in Yellowstone is classified as timberland (fig. 35). Juniper, the only recorded woodland forest type, comprises less than 1 percent of Yellowstone's total forest area. Lodgepole pine is the most predominant forest type in Yellowstone, covering nearly 60 percent (1 million acres) of Yellowstone's forest land (fig. 36). Spruce-fir is the second most abundant forest type with 258 thousand acres (16 percent). Nonstocked timberland accounts for 11 percent of Yellowstone's forest area. Over 36 percent of the forest area is classified as a sapling/seedling stand-size class (fig. 37). The majority (35 percent) of forest stands are estimated to be between 0 and 51 years of age (fig. 38).

Figure 39 displays the distribution of number of live trees on Yellowstone's forest land by species. Lodgepole pine makes up the largest percentage (58 percent) of number of trees; second in abundance is subalpine fir (22 percent), and Engelmann spruce comprises 9 percent of the total. Of particular interest is the status of whitebark pine in Yellowstone National Park. Whitebark pine seeds are a critically important fall food source for the grizzly bear, and whitebark pine is susceptible to significant mortality from white pine blister rust, a nonnative fungus that was introduced to North America from Europe. The current estimate of whitebark pine in Yellowstone is 32 million trees, or 6 percent of total live trees. Figure 40 displays plot locations where at least one whitebark pine 1.0 inch in diameter or larger was measured, and whether or not there was at least one tree present in the overstory.

In the summer of 1988, the driest period in Yellowstone's history, large-scale fires burned over one-third of the park. The fires created a unique forest ecosystem that has been extensively studied over the years to evaluate how forests and wildlife recover from severe disturbance. The most significant outcome is a skewed age-class distribution toward the younger stands that regenerated following the fires (fig. 38). In the 2002 inventory of Wyoming, field crews recorded evidence of fire and the year in which it occurred. The inventory estimate of forest area in Yellowstone National Park, Wyoming, that burned in 1988 is 803,000 acres. Sixty-four percent of this burned area is currently classified as a lodgepole pine forest type, and another 19 percent is nonstocked. Spruce-fir types account for 7 percent of the burned area and the remaining 10 percent is comprised of aspen, Douglas-fir, Engelmann spruce, whitebark pine, and limber pine types. Over 58 percent of the burned area is classified as a sapling/seedling stand-size class, 18 percent

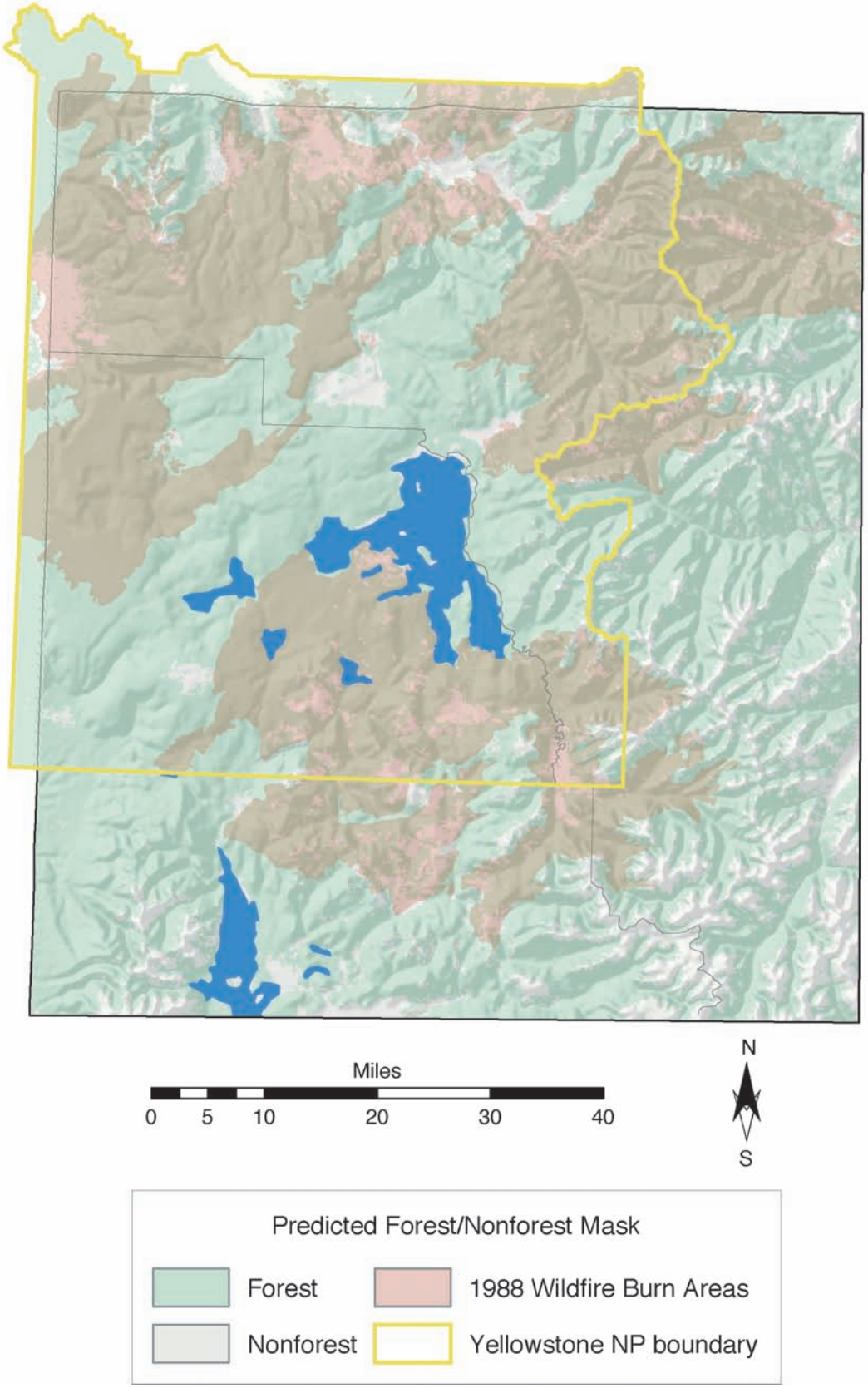

Figure 34—Area of forest and nonforest land overlayed with the areas burned in the 1988 wildfire in Yellowstone National Park, Wyoming, 2002.

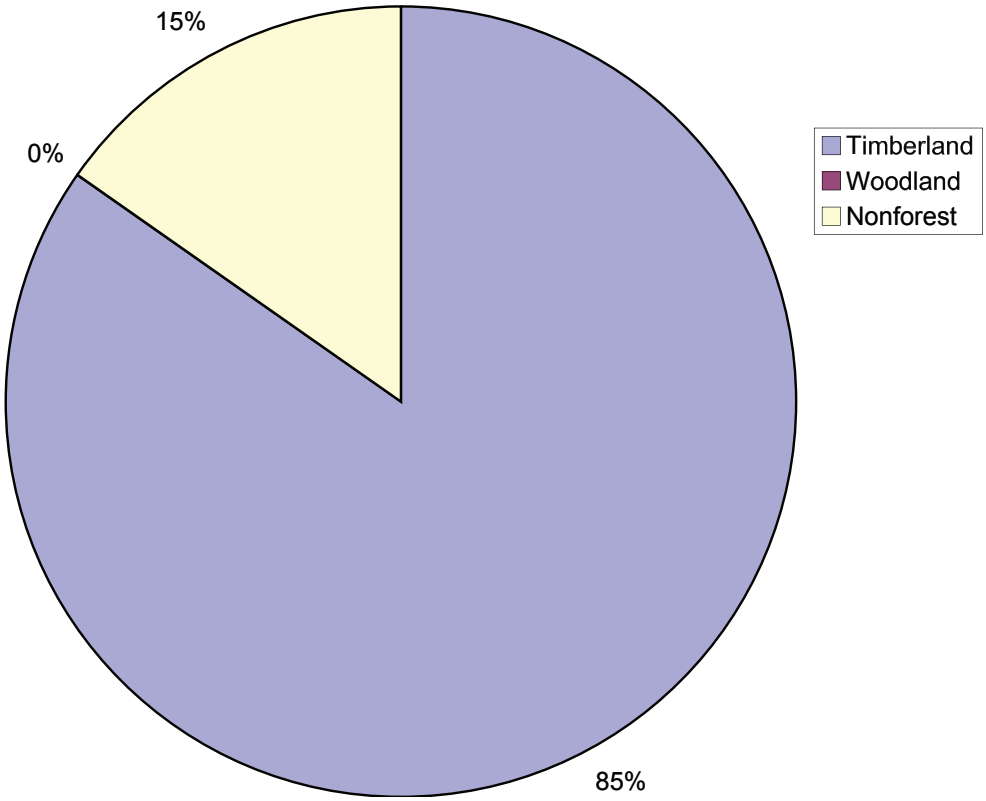

Figure 35—Land area by land class in Yellowstone National Park, Wyoming, 2002.

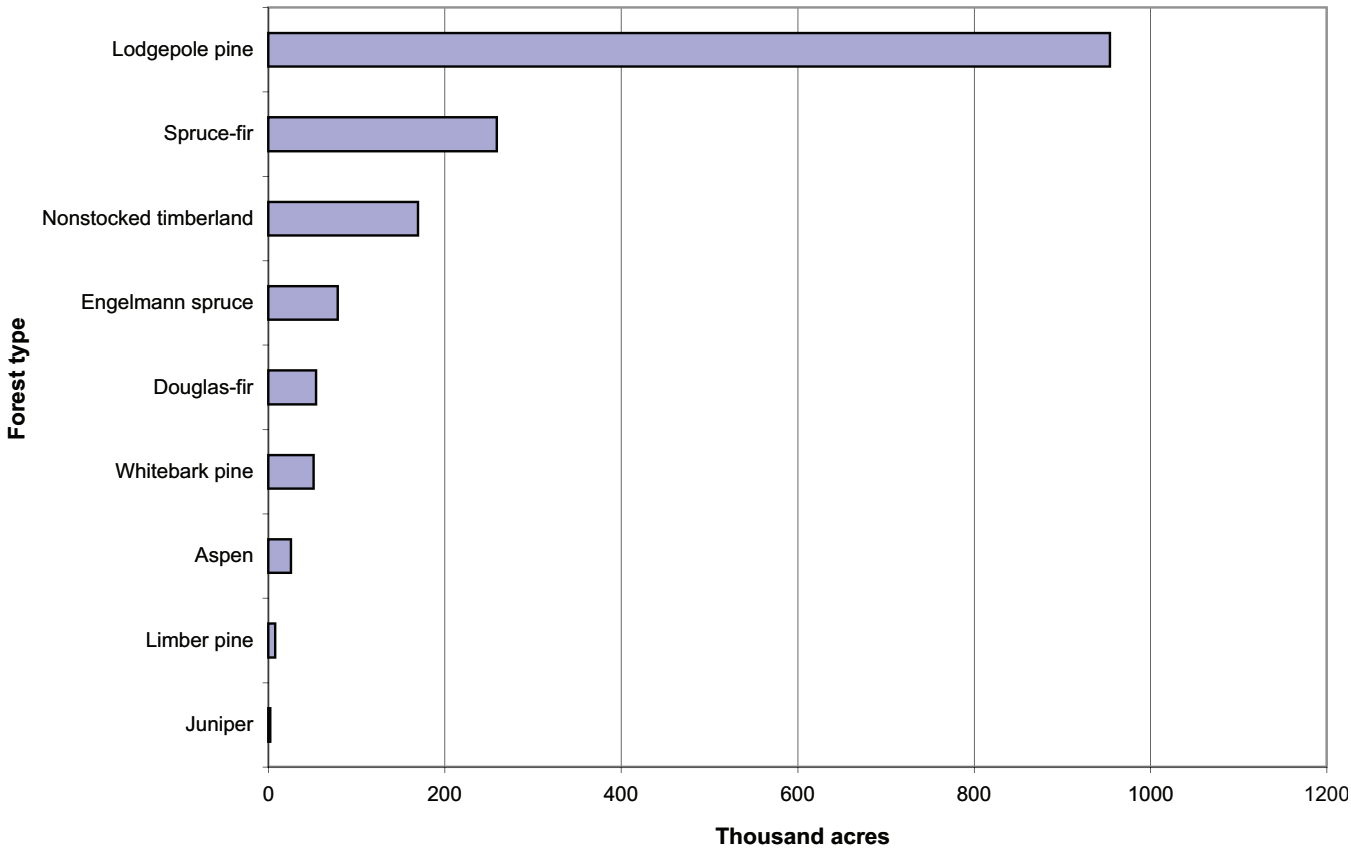

Figure 36—Area of forest land by forest type in Yellowstone National Park, Wyoming, 2002.

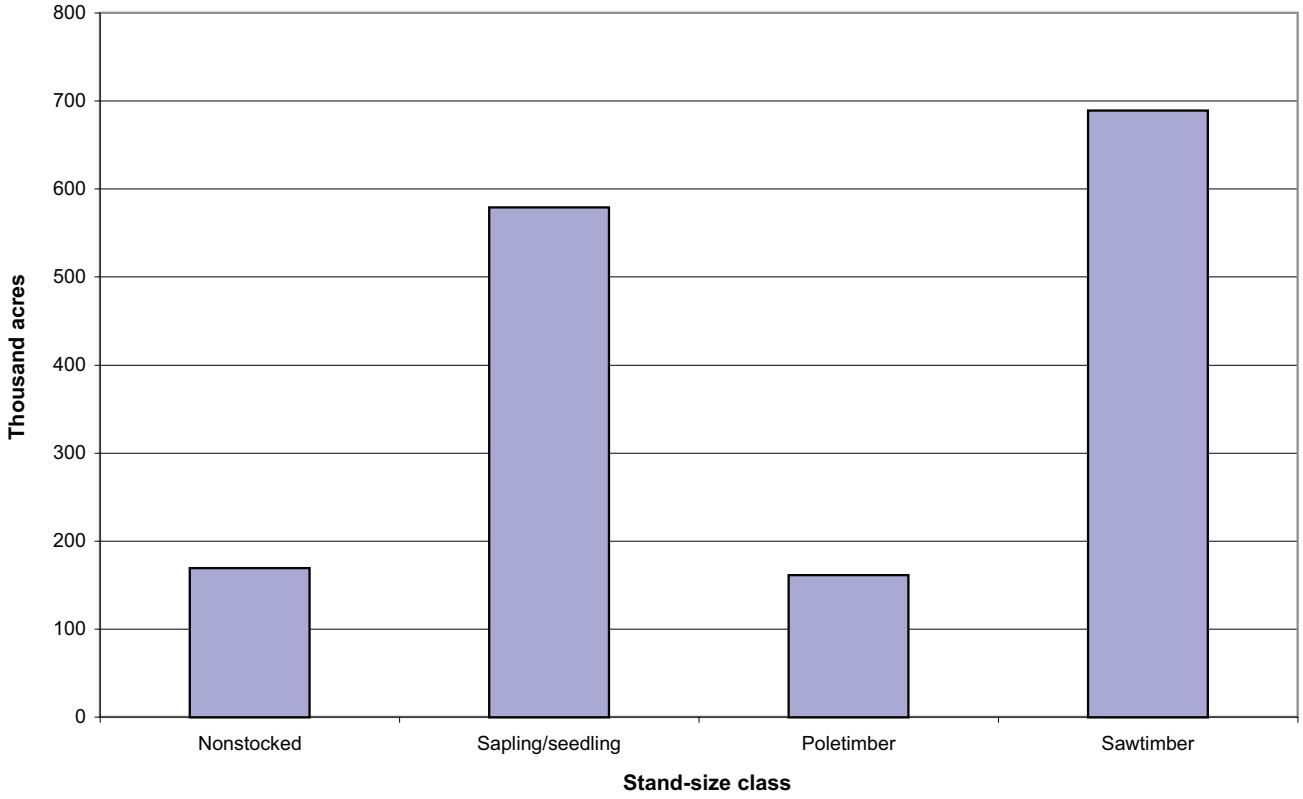

Figure 37—Area of forest land by stand-size class in Yellowstone National Park, Wyoming, 2002.

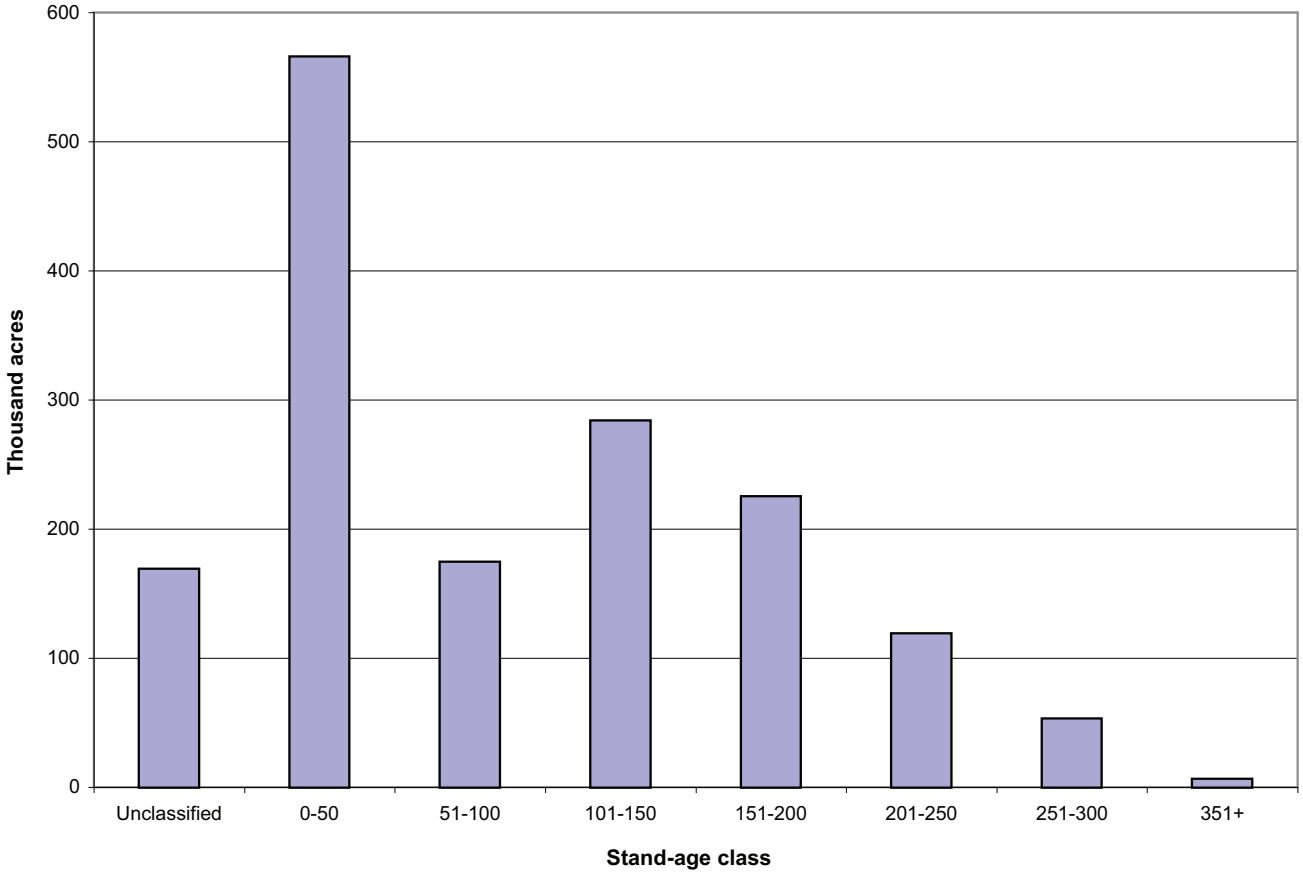

Figure 38—Area of forest land by stand-age class in Yellowstone National Park, Wyoming, 2002.

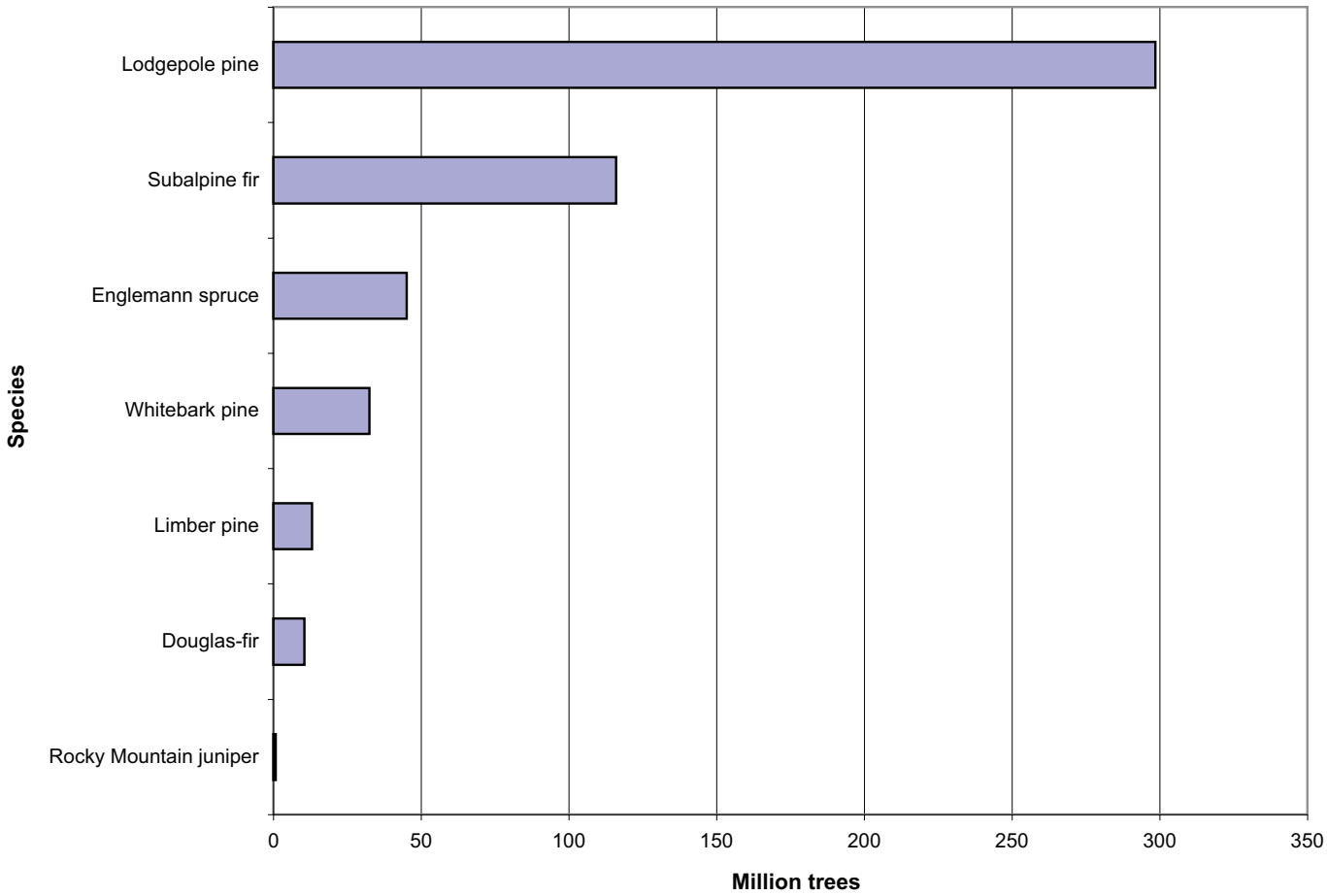

Figure 39—Number of live trees on forest land by species in Yellowstone National Park, Wyoming, 2002.

are sawtimber stands, and 5 percent are poletimber stands. These inventory statistics support what many other studies have concluded: despite the extensive fire-related mortality of large-diameter trees, especially lodgepole pine, most of these stands appear to be adequately stocked with saplings and seedlings that will eventually develop into healthy, mature stands.

Roadless Areas

Roadless areas are lands designated by Federal law that generally limits, with some exceptions, timber harvest and road construction on National Forests and Grasslands across the country. Figure 41 displays those areas currently designated as roadless in Wyoming. The FIA's estimate of roadless areas in Wyoming is 3.1 million acres, and 71 percent (2.2 million acres) is classified as forest land. The lodgepole pine and spruce/fir forest types together comprise 43 percent of roadless area forest land (fig. 42). Douglas-fir accounts for 17 percent and aspen accounts for 10 percent of roadless area forest land. By stand-age class, sawtimber stands comprise 60 percent of forest land, poletimber stands 22 percent, sapling seedling stands 14 percent, and nonstocked stands comprise 4 percent of forest land in roadless areas (fig. 43). By stand-age class, most (56 percent) of the forest area is concentrated in stands between 50 and 151 years old (fig. 44). Less than 15 percent of forest area is in stands 1 to 50 years old and 25 percent is in stands greater than 150 years old.

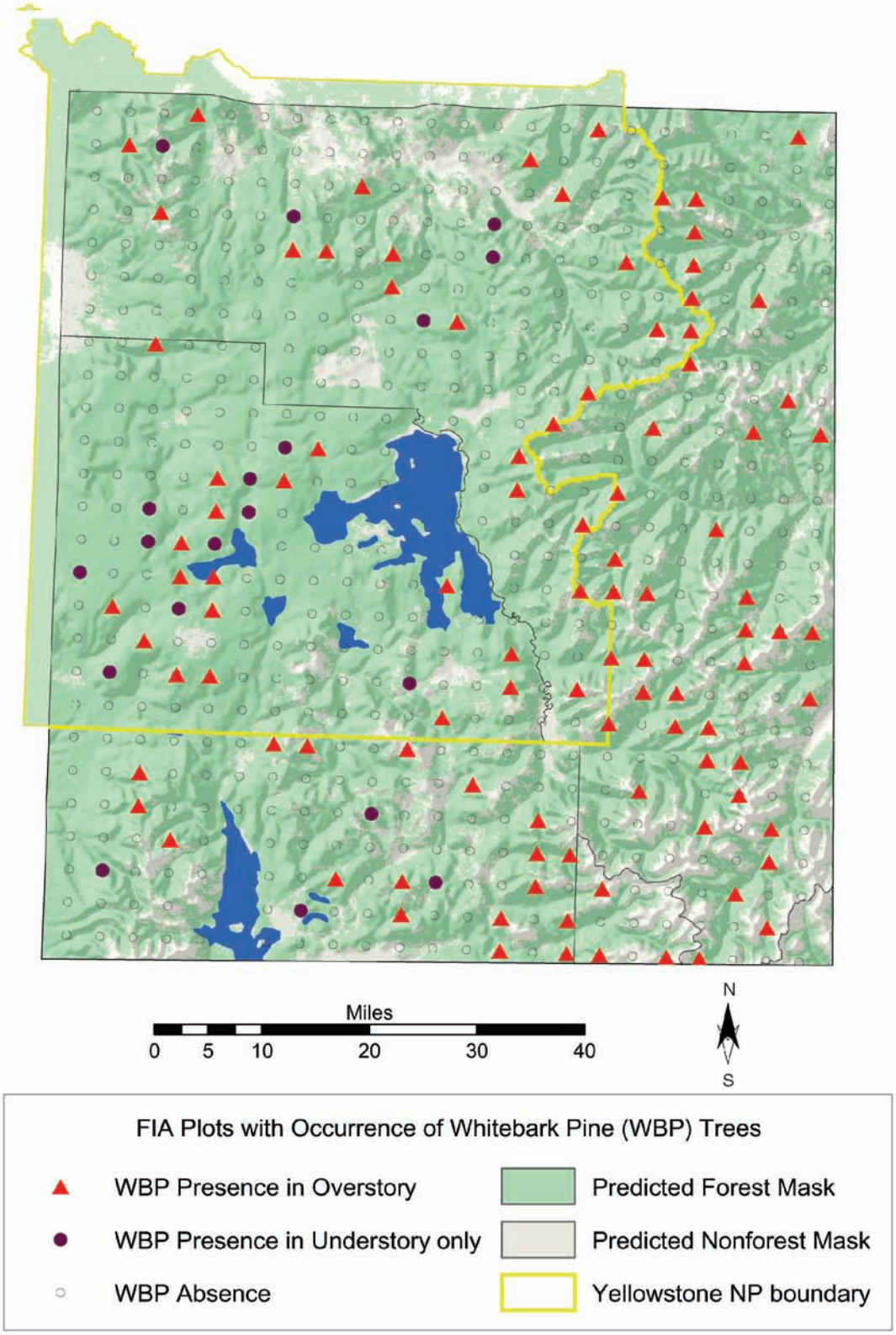

Figure 40—FIA plot locations where at least one live whitebark pine 1.0 inch d.b.h. or larger was measured in Yellowstone National Park, Wyoming, 2002.

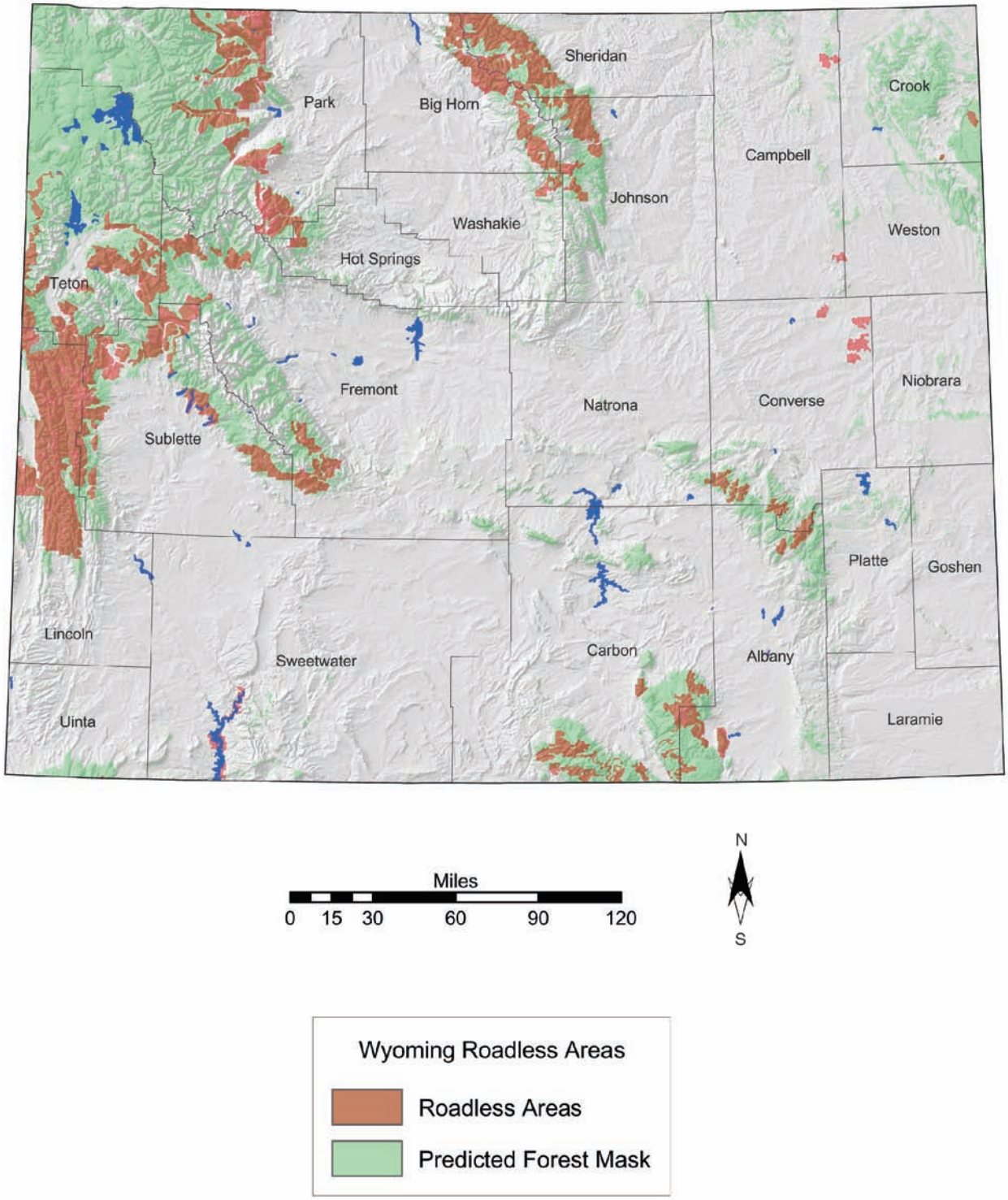

Figure 41—Roadless areas on forest land, Wyoming, 2002.

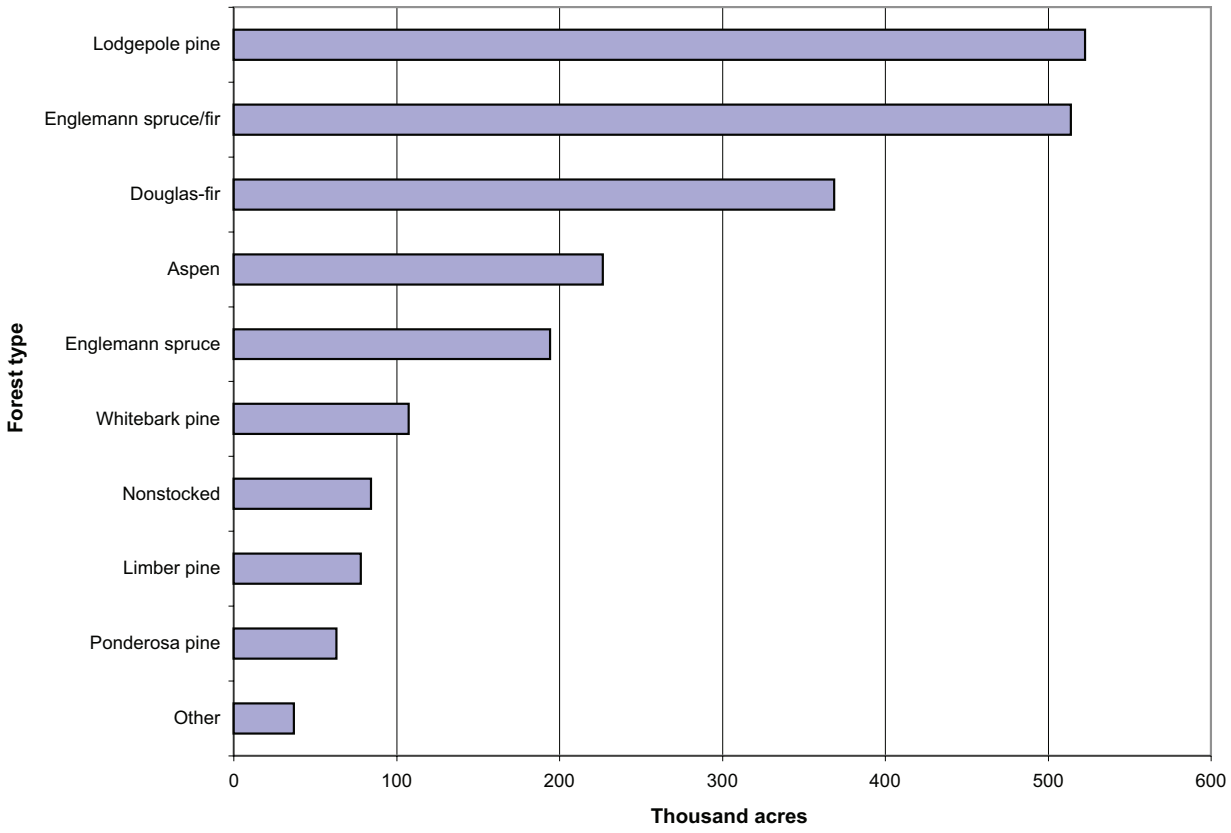

Figure 42—Area of forest land by forest type in roadless areas, Wyoming, 2002.

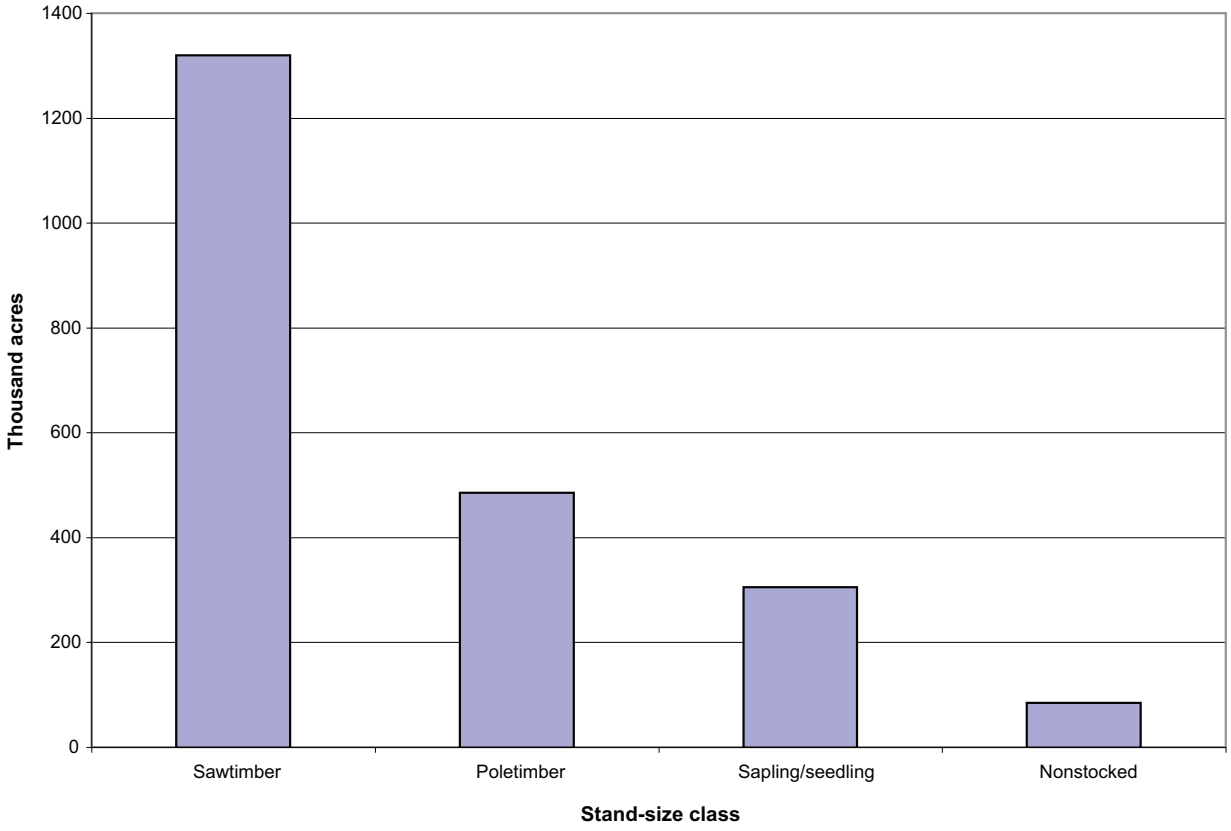

Figure 43—Area of forest land by stand-size class in roadless areas, Wyoming, 2002.

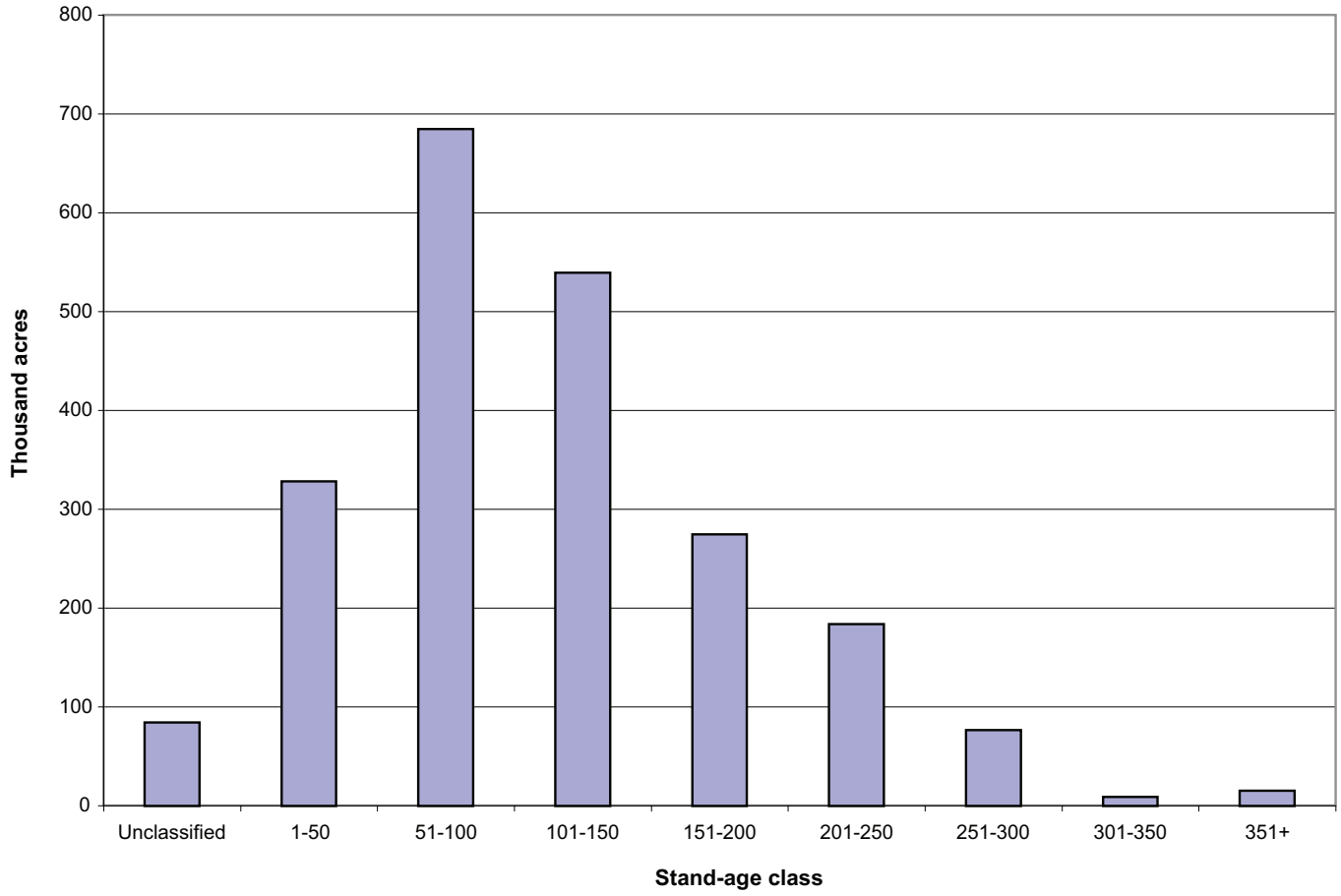

Figure 44—Area of forest land by stand-age class in roadless areas, Wyoming, 2002.

The inventory estimate of live trees on forest land in roadless areas in Wyoming is 892 million trees. Subalpine fir is estimated to make up the highest percentage (32 percent) of number of trees. In continuing order of abundance is lodgepole pine (29 percent); Engelmann spruce (11 percent); Douglas-fir (9 percent); aspen (6 percent); whitebark pine (5 percent); limber pine (3 percent); and ponderosa pine (1 percent) (fig. 45).

The inventory estimate of gross annual growth of all live trees on forest land on roadless areas totals 74.2 million cubic feet and annual mortality totals 35.6 million cubic feet. Annual mortality reduced gross growth by 48 percent. Figure 46 illustrates gross annual growth and annual mortality on roadless areas for the eight most abundant species. The relationships between gross growth and mortality indicate certain species are experiencing elevated levels of mortality and subsequent lower net growth. Annual mortality reduced gross growth 86 percent for subalpine fir and 80 percent for Douglas-fir. In contrast, annual mortality only reduced gross growth by 7 percent for ponderosa pine.

In terms of overall stand structure and composition, roadless areas in Wyoming bear a strong resemblance to reserved land. Elevated levels of mortality compared to gross growth are common to both roadless and reserved forests. The most unique aspect of roadless areas is the amount of area that is located in the subalpine zone of the Southern Rocky Mountain Steppe. This is evidenced by the significant areas occupied by Engelmann spruce, subalpine fir, and Douglas-fir.

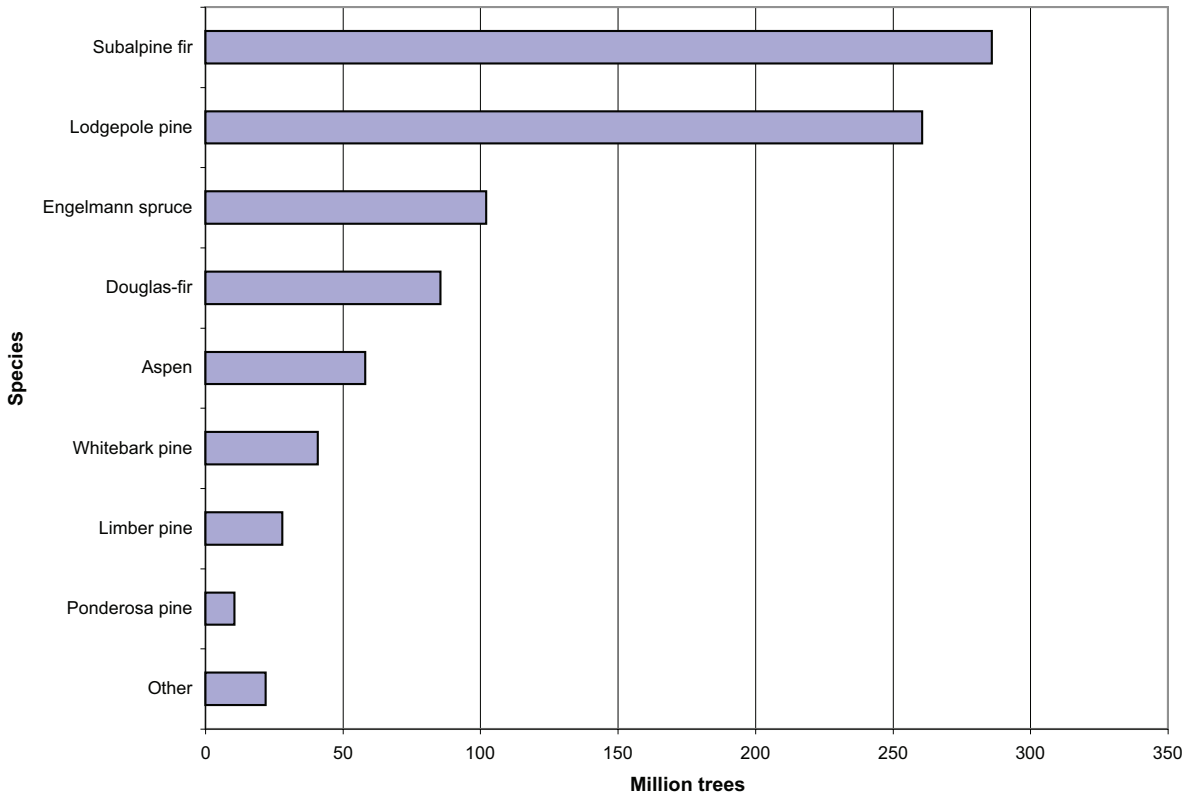

Figure 45—Number of live trees on forest land by species in roadless areas, Wyoming, 2002.

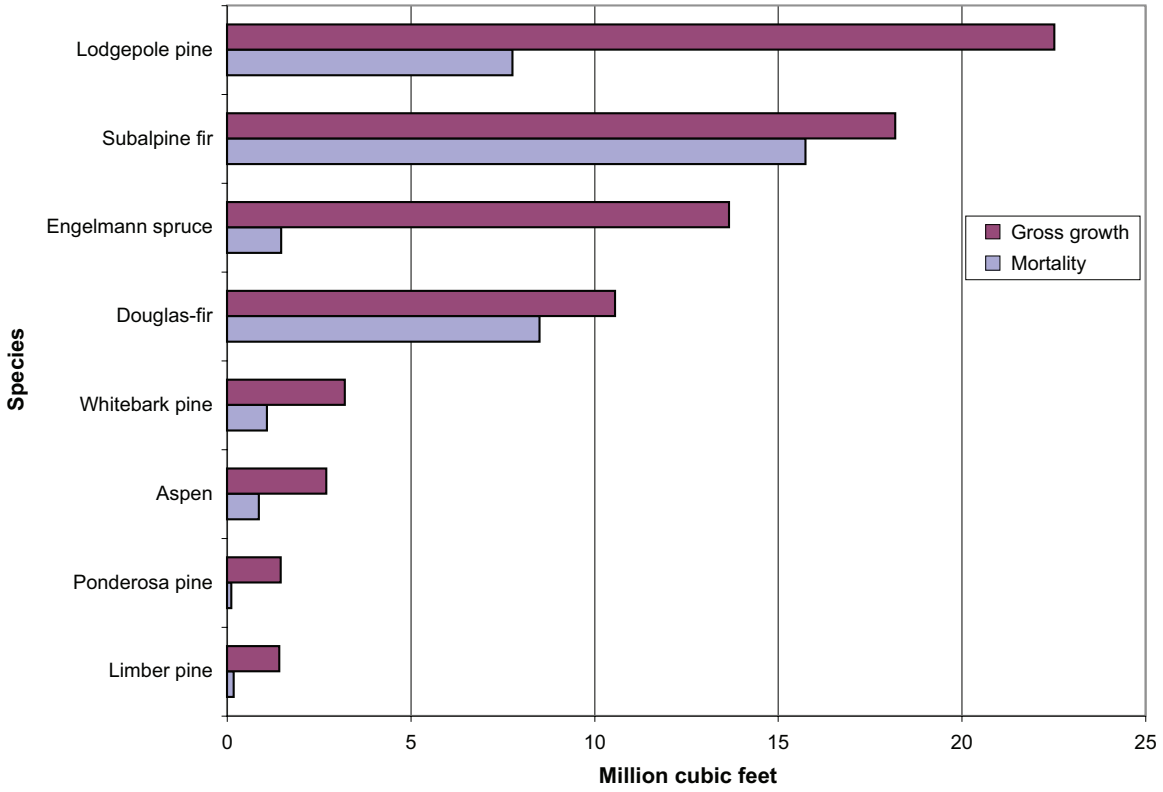

Figure 46—Gross annual growth and annual mortality of live trees by eight most abundant species in roadless areas, Wyoming, 2002.

Summary and Conclusions

At first glance, one might assume that Wyoming's forests are rather homogenous with a predominance of softwood species occurring in mostly mountainous terrain. However, as indicated by the 2002 inventory findings, significant State-wide variability does exist in certain estimates related to species composition and stand structure. Several of the map products underscore these differences. Major differences in species composition and stand structure occur between timberland and woodland. These differences are largely attributable to moisture regimes—woodland typically occurs on very xeric sites whereas timberland progresses from drier sites at lower elevations to the moist, cool environments at the very highest elevations. Reserved forest land is characterized by older, slow-growing forest stands with higher levels of mortality than nonreserved forest land.

Barring significant legislative action, nonreserved timberland will most likely continue to produce timber products at a level well below its potential. The management of Federally owned timberland is far more complicated than it was decades ago because of the diverse demand that today's public puts on natural resources. Every acre of National Forest timberland that is under consideration for a timber sale is subject to intense scrutiny, and any relevant environmental impact must be addressed.

Besides environmental-related restrictions, there are additional restrictions on the timber resource on nonreserved timberland. Figure 47 displays the results of a four-step screening process applied to the total area of nonreserved timberland in Wyoming. The

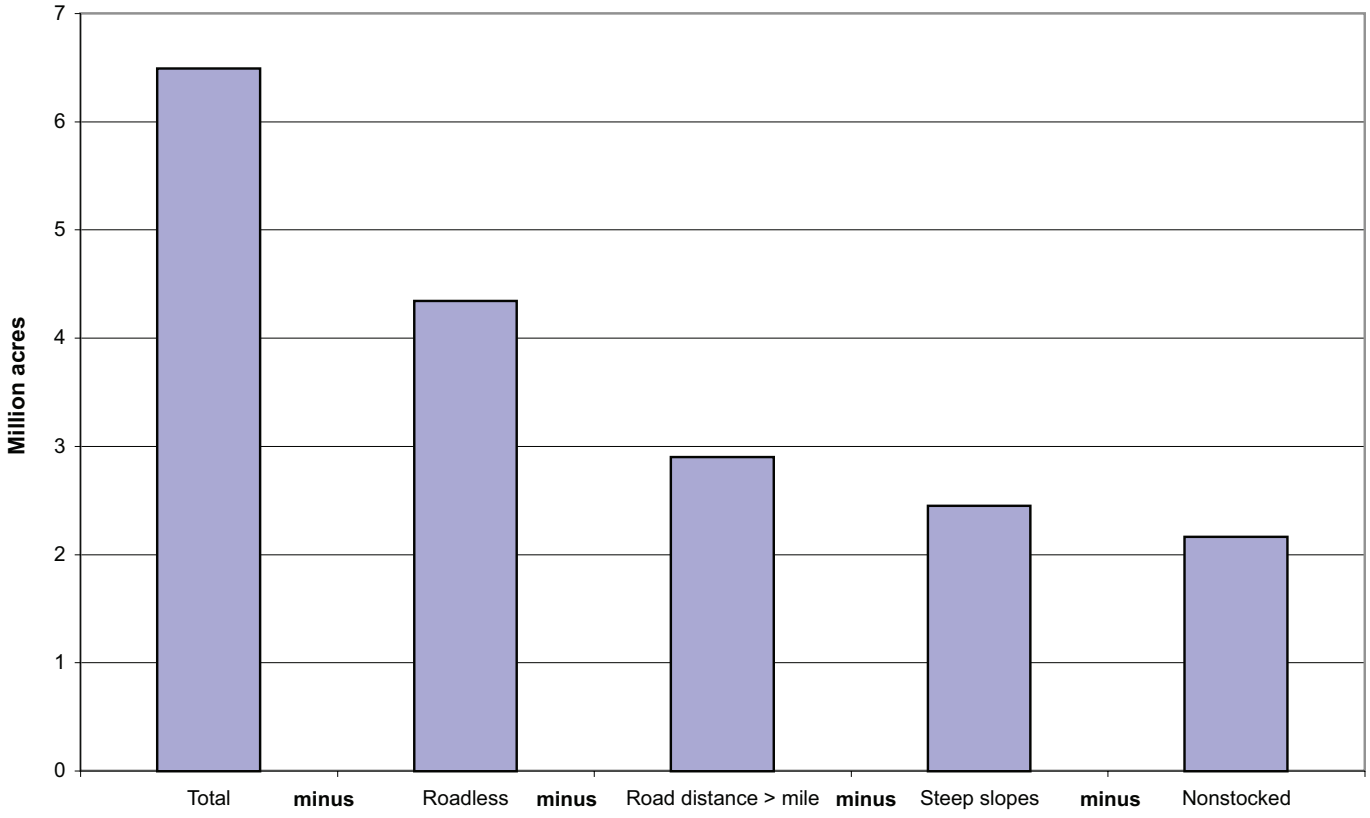

Figure 47—Area of nonreserved timberland discounted for four attributes that may limit timber harvesting, Wyoming, 2002.

purpose of the display is to demonstrate how certain variables collected on FIA plots can be used for arriving at a more realistic estimate of nonreserved timberland area that might be available for timber harvesting. The four screening criteria are (1) roadless areas within nonreserved timberland, (2) areas greater than one mile from a maintained road, (3) slopes greater than 40 percent, and (4) nonstocked conditions. The assumption is that these four criteria present, to a certain degree, a deterrent to logging. After the 6.5 million acres of nonreserved timberland have been deducted using the four criteria, less than 2.2 million acres (34 percent) remain.

Millions of visitors come to enjoy Wyoming's National Parks every year. Yellowstone National Park is internationally famous, and is widely regarded as one of the most unique ecosystems in the world. When the large-scale fires struck in 1988, there was understandable concern about the impacts on the Park's ecosystem. Although unprecedented in the 125-year history of the Park, the scientists reviewing the effects of the 1988 fires reminded the public that fires of such scale burned elsewhere in similar ecosystems during this century, and earlier in the landscape's history. Much of the severely burned forest area naturally regenerated to extremely dense, young lodgepole pine stands. However, lodgepole pine is regarded as a fire-maintained subclimax species, and fire is critical for perpetuating the lodgepole pine ecosystem. The 2002 inventory statistics, especially the stand-age profile, support the conclusion that most of the Park's landscape will evolve into what Yellowstone National Park resembled over 100 years ago.

The information in this report points to several opportunities for further analysis, investigation, and studies. There are significant differences in the stand-age distribution between reserved and nonreserved forest land. Analysis of where these old stands are located, what their species composition is, and evaluating their sustainability could help to address some of the old growth issues. The relationship between gross growth and mortality should be examined in more detail with emphasis on how the relationship differs on each of the National Forests. Gross growth and mortality are often used to explain why the live-tree inventory is increasing or decreasing, and can also indicate a state of forest health. Supply-related studies that examine how much of the live inventory is available for harvest, where this available inventory is located geographically, and what opportunities exist for harvesting this material would be of interest to the forest products industry. The per-acre analysis of growing-stock volume and sawtimber volume indicates that National Forest lands support significantly higher levels of live inventory compared to other ownership groups in Wyoming. The large-scale fires that occurred in 1988 in Yellowstone National Park provided unique opportunities for evaluating how ecosystems respond to fire. The inventory data collected in Yellowstone between 1998 and 2003 could be used for a broad-scale assessment of current stand conditions for those plots that showed evidence of fire-related disturbance in 1988.

Standard Forest Inventory and Analysis Terminology

Note: For a more complete glossary, please go to: http://www.fs.fed.us/rm/ogden/state_report/state_reports.html

Basal area (BA)—The cross-sectional area of a tree stem/bole (trunk) at the point where diameter is measured, inclusive of bark; BA is 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.).

Biomass—The quantity of wood fiber, for trees 1.0 inch in diameter and larger, expressed in terms of oven-dry weight. Includes aboveground portions of trees: bole/stem (trunk), bark, and branches. Biomass estimates can be computed for live and/or dead trees.

Bole—A trunk or main stem of a tree; seedlings and saplings are specified as having stems rather than boles. Woodland trees are also referenced as having stems.

Condition—Generally defined as an area of relatively uniform ground cover, such as homogeneous vegetative cover, meeting minimum size requirements.

Cubic-foot volume (merchantable)—See "Volume."

Diameter at breast height (d.b.h.)—For timber species: the diameter of a tree bole/stem (trunk) measured at breast height (4.5 feet above ground); measured outside the bark. The point of diameter measurement may vary for abnormally formed trees.

Diameter at root collar (d.r.c.)—For woodland trees: the diameter of a tree stem(s) measured at root collar or at the point nearest the ground line (whichever is higher) that represents the basal area of the tree; measured outside the bark. For multi-stemmed woodland trees, d.r.c. is calculated from an equation that incorporates the individual stem diameter measurements. The point of diameter measurement may vary for woodland trees with stems that are abnormally formed. With the exception of seedlings, woodland stems qualifying for measurement must be at least 1.0 inch in diameter or larger and at least 1.0 foot in length.

Diameter class—A grouping of tree diameters (d.b.h. or d.r.c.) into classes of a specified range. For some diameter classes, the number referenced (for example, 4, 6, 8 inches) is designated as the midpoint of an individual class range. For example, if 2-inch classes are specified (the range for an individual class) and even numbers are referenced, the 6-inch class would include trees 5.0 to 6.9 inches in diameter.

Field/plot location—A reference to the sample site or plot—an area containing the field location center (LC) and all sample points. The mapped-plot design field location consists of four subplots and four microplots distributed over approximately 2.5 acres.

- **Subplot**–A 1/24-acre fixed-radius area (24-foot horizontal radius) used to sample trees 5.0-inches d.b.h./d.r.c. and larger and understory vegetation.
- **Microplot**–A 1/300-acre fixed-radius plot (6.8-foot radius), located at the center of each subplot, and used to inventory seedlings and saplings.

Fixed-radius plot—A circular sample plot of a specified horizontal radius: 1/300 acre = 6.8-foot radius (microplot); 1/24 acre = 24.0-foot radius (subplot).

Forest industry lands—See "Private lands."

Forest land—Land that is at least 10 percent stocked with live tally tree species (timber or woodland species), including land that formerly had such stocking and that may be regenerated naturally or artificially. The minimum area for classification of forest land is 1 acre and 120 feet wide. Unimproved roads, trails, streams, and openings in forest areas are classified as forest land if they are less than 120 feet wide or 1 acre in size. For field use, sufficient tree crown cover (5 percent cover of tally tree species) or the presence of sufficient reproduction (40 tally tree species seedlings/saplings per acre) is used to represent 10 percent forest land stocking.

- **Timberland**—A subset of forest land, where the designated forest type is derived from timber species.
- **Woodland**—A subset of forest land, where the designated forest type is derived from woodland species.
- **Nonstocked forest land**—Formerly stocked forest land that currently has less than 10 percent stocking but has the potential to again become 10 percent stocked. Examples include recently harvested, burned, or windthrow-damaged areas.

Forest type (historic IW-FIA method)—A classification of forest land based on and named for the tree species presently forming a plurality of live-tree stocking. Stocking is an expression of the extent to which growing space is effectively utilized by live trees. Some exceptions to the single predominant species concept used for classifying forest type apply to sites where (1) hardwoods and softwoods occur together in a stand, or (2) when Engelmann spruce and subalpine fir occur together in a stand, and in combination they compose the predominant live-tree stocking. When hardwoods (for example, maple, oak, or aspen trees) and softwoods (for example, Douglas-fir or ponderosa pine trees) occur together within a stand, forest type is determined as follows: First, the stocking percents of all softwoods are summed as a group, and then again for hardwoods, in order to determine which of the two overall groups has the most live-tree stocking. Next, the individual tree species from the group with the majority of stocking is selected as the forest type. When Engelmann spruce and subalpine fir (or corkbark fir) occur together in a stand, and in combination they constitute the predominant live-tree stocking, forest type is computed using the following criteria: First, all stocking percents are adjusted from an absolute base to a relative base, where the sum of all percents are equal to 100 percent maximum. Next, a stand is classified as an Engelmann spruce type if Engelmann spruce individually is greater than or equal to 20 percent relative stocking, and subalpine fir is less than 20 percent relative stocking. For all other stands where subalpine fir and Engelmann spruce together have plurality, the stand is classified as the spruce-fir type.

Growing stock—A term often used in cubic foot volume tables to describe which trees are included in the net volume, annual growth, and annual mortality estimates. Includes growing-stock trees 5.0 inches d.b.h. and greater (excludes woodland species).

Growing-stock tree—See "Tree class – Sound tree."

Growth—

- **Gross annual growth**—The average annual increase in the volume of live trees (less deductions for cull volume).
- **Net annual growth**—Gross annual growth minus average annual mortality volume.

Hardwood trees—Trees that are usually broad leaved and deciduous (leaves that fall off or shed at specific seasons).

Indian Trust lands—See "Private lands."

Industrial wood—See "Logging residue/products."

Large trees (Sawtimber trees)—See "Tree-size class."

Logging residue/products—

- **Industrial wood**—All commercial roundwood products, excluding fuelwood.
  - **Logging residue**—The unused portions within the merchantable sections of sound (growing-stock) trees cut or killed during logging operations.
  - **Primary wood-processing plants**—An industrial plant that processes roundwood products, such as sawlogs, pulpwood bolts, or veneer logs.
  - **Pulpwood**—Roundwood, whole-tree chips, or wood residues that are used for the production of wood pulp.
- **Roundwood**—Logs, bolts, or other round sections cut from trees.

Mapped-plot design—A sampling technique that identifies (maps) and separately classifies distinct "conditions" on the field location sample area. Each condition must meet minimum size requirements. At the most basic level, condition class delineations include forest land, nonforest land, and water. Forest land conditions can be further subdivided into separate condition classes if there are distinct variations in forest type, stand-size, stand origin, and stand density, given that each distinct area meets minimum size requirements.

Medium trees (Poletimber trees)—See "Tree-size class."

Microplot—See "Field/plot location."

Mortality tree—A standing or downed dead tree, 1.0 inch d.b.h./d.r.c. and larger, that was alive within the past 5 years.

National Forest System (NFS) lands—See "Public lands."

National Park System (NPS) lands—See "Public lands."

Net annual growth—See "Growth."

Nonforest land—For the FIA mapped-plot design baseline inventory, nonforest land includes three main categories: (1) nontree land, (2) nonsampled tree land, and (3) other tree land.

- **Nontree land**—This is land that (1) has never supported tree cover/stocking sufficient for classification as forest land (for example, barren, alpine tundra), or (2) was formerly tree land, but has been converted to a nontree land status (for example, cropland, improved pasture). Other examples of nontree land are improved roads of any width, graded or otherwise regularly maintained for long-term use, and rights-of-way of all powerlines, pipelines, other transmission lines, and operating railroads. If intermingled in forest areas, unimproved roads and nonforest strips must be at least 120 feet wide and 1 acre in size to qualify as nontree land. This category also includes formerly stocked woodland areas if they are currently nonstocked due to a treatment (such as chaining, other land clearing). These areas are treated to eliminate woodland trees for the purpose of enhancing or providing for nonwood commodities or uses (such as increasing herbage production).
- Nonsampled tree land—This is land that currently meets the cover or stocking requirements for forest land, but human activity on the site will preclude the natural succession of the stand (areas that might be included in this category are golf courses, cemeteries, picnic grounds, orchards, Christmas tree plantations, and home yards with mowed lawns).
- **Other tree land**—Land that is 10 percent stocked with trees defined as "other tree species" (nontally tree species) but has less than 10 percent stocking or 5 percent cover in tally tree species. Examples would include land stocked with tree species such as paloverde, tamerisk, or Russian olive. See "Other tree species."

Nonindustrial private lands—See "Private lands."

Nonreserved forest land—Forest land not withdrawn from management for production of wood products through statute or administrative designation.

Nonstocked forest land—See "Forest land."

Other private lands—See "Private lands."

Other public lands—See "Public lands."

Other tree species (nontally species)—All species classified as trees (Little 1979) that have not at this time been designated nationally by FIA as tally tree species. For the purposes of classifying forest land, only tally tree species are used to determine if minimal stocking requirements have been met. Other tree species include turbinella oak, Russian olive, acacia, etc. See "Nonforest land – Other tree land."

Poletimber-size trees (Medium trees)—See "Tree-size class."

Poletimber stands (Medium tree stands)—See "Stand-size class."

Primary wood-processing plants—See "Logging residue/products."

Private lands—

- **Forest industry**—Land owned by a company or an individual(s) operating a primary wood-processing plant.
- **Indian Trust**—American Indian lands held in fee, or trust, by the Federal Government, but administered for tribal groups or as individual trust allotments.
- **Nonindustrial private**—All private ownerships except forest industry.
- **Other private**—Privately owned lands other than forest industry or Indian Trust.

Productivity—Developed for timber species, the potential yield capability of a stand calculated as a function of site index (expressed in terms of cubic-foot growth per acre per year at age of culmination of MAI). Productivity values for forest land provide an indication of biological potential. Timberland stands are classified by the potential net annual growth attainable in fully stocked natural stands. Woodland stands are given a default value of 10 cubic feet per acre per year. For FIA reporting, **Productivity Class** is a variable that groups stand productivity values into categories of a specified range. Productivity is sometimes referred to as "Yield" or "Mean annual increment (MAI)."

Public lands—

- **Miscellaneous Federal**—Public lands administered by Federal agencies other than the Forest Service, U.S. Department of Agriculture, or the Bureau of Land Management, U.S. Department of the Interior.
- **National Forest System (NFS)**—Public lands administered by the Forest Service, U.S. Department of Agriculture, such as National Forests, National Grasslands, and some National Recreation Areas.
- **National Park**—Public lands administered by the Park Service, U.S. Department of the Interior, such as National Parks, National Monuments, National Historic Sites (such as National Memorials and National Battlefields), and some National Recreation Areas.
- **Other public**—Public lands administered by agencies other than the Forest Service, U.S. Department of Agriculture. Includes lands administered by other Federal, State, county, and local government agencies, including lands leased by these agencies for more than 50 years.

Pulpwood—See "Logging residue/products."

Removals—The net volume of growing stock removed from the inventory by harvesting or other cultural operations (such as timber-stand improvement), by land clearing, or

by changes in land use (such as a shift to wilderness).

Reserved land—Land withdrawn from management for production of wood products through statute or administrative designation. Examples include Wilderness areas and National Parks and Monuments.

Sapling and seedling stands—See "Stand-size class."

Saplings—See "Tree-size class."

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

Sawtimber—A term often used in board-foot-volume tables to describe which trees are included in net volume, annual growth, and annual mortality estimates. Includes growing-stock trees 9.0 inches d.b.h. and greater for softwoods, and 11.0 inches d.b.h. and greater for hardwoods.

Sawtimber-size trees (Large trees)—See "Tree-size class."

Sawtimber stands (Large tree stands)—See "Stand-size class."

Seedlings—See "Tree-size class."

Site index—A measure of forest productivity for a timberland tree/stand. Expressed in terms of the expected height (in feet) of site trees at an index age of 50 (or 80 for aspen and cottonwood). Calculated from height-to-age equations.

Site productivity—See "Productivity."

Site tree—A timber species tree used to provide an index of site quality. Timber species selected for site index calculations must meet specified criteria with regards to age, diameter, crown class, and damage (for example, no broken or dead top damage).

Snag—A standing dead tree. See "Tree class – Hard dead tree and Soft dead tree."

Softwood trees—Coniferous trees that are usually evergreen (retain leaves year-round), and having needlelike or scalelike leaves.

Stand—A community of trees that can be distinguished from adjacent communities due to similarities and uniformity in tree and site characteristics, such as age-class distribution, species composition, spatial arrangement, structure, and so forth.

Stand density—A relative measure that quantifies the relationship between trees per acre, stand basal area, average stand diameter, and stocking of a forested stand. **Stand density index (SDI)**, a widely used measure developed by Reineke (1933), is an index that expresses relative stand density based on a comparison of measured stand values with some standard condition. For FIA reporting, the SDI for a site is usually presented as a percentage of the maximum SDI for the forest type. Site SDI values are sometimes grouped into SDI classes of a specified percentage range. Maximum SDI values vary by species and region.

Standard error—An expression that denotes the precision of an estimate, obtained by statistical sampling methods.

Stand-size class—A classification of forest land based on the predominant diameter size of live trees presently forming the majority of live-tree stocking. Classes are defined as follows:

- **Sawtimber stand (Large-tree stand)**—A stand at least 10 percent stocked with live trees, in which half or more of the total stocking is from live trees 5.0 inches or larger in diameter, and with sawtimber (large tree) stocking equal to or greater

than poletimber (medium tree) stocking.

- **Poletimber stand (Medium-tree stand)**—A stand at least 10 percent stocked with live trees, in which half or more of the total stocking is from live trees 5.0 inches or larger in diameter, and with poletimber (medium tree) stocking exceeding sawtimber (large tree) stocking.
- **Sapling/seedling stand**—A stand at least 10 percent stocked with live trees, in which half or more of the total stocking is from live trees less than 5.0 inches in diameter.
- **Nonstocked stand**—A formerly stocked stand that currently has less than 10 percent stocking, but has the potential to again become 10 percent stocked. For example, recently harvested, burned, or windthrow-damaged areas.

Stocking—An expression of the extent to which growing space is effectively utilized by live trees.

Stocking condition (class)—A classification of forest land used to provide an indication of the extent to which a site is being utilized by live trees (including live cull trees).

- **Overstocked**—Sites at least 100 percent stocked.
- **Fully stocked**—Sites that are 60 to percent stocked.
- **Medium to fully stocked**—Sites that are 35 to 60 percent stocked.
- **Poorly stocked**—Sites that are 10 to 35 percent stocked.
- **Nonstocked**—Sites with a stocking value less than 10.

Subplot—See "Field/plot location."

Tally trees—Tree species that have been selected to be included in the field inventory/sample because they occur in a tree growth form throughout much of their range (Little 1979). Tally tree species are categorized as "timber" or "woodland" trees. Tally trees are evaluated for a variety of items (such as crown class, crown ratio, damage, rotten/missing material, form defect) and measurements (such as diameter, height) are taken on each tally tree. This information is used to obtain estimates of volume, growth, and mortality for the sample location. Tally tree data can also be used to obtain estimates for other site variables, such as site quality and health.

Timber species—Tree species traditionally used for industrial wood products. These include all species of conifers, except pinyon and juniper. Hardwoods included are aspen, box elder, cottonwood, and paper birch. Timber species are measured for diameter at breast height.

Timberland—See "Forest land."

Tree class—A classification system based on a tree's physical characteristics.

- Live trees are classified for Tree Class as follows:
  - **Sound tree (Growing-stock tree)**—A live timber species, 5.0 inches d.b.h. or larger, with less than two-thirds (67 percent) of the merchantable volume cull, and containing at least one solid 8-foot section, reasonably free of form defect, on the merchantable portion of the tree. A live timber species sapling (1.0 to 4.9 inches d.b.h.) is also included in this category if it is expected to become a sound live tree, 5.0 inches d.b.h. or larger, with good form and vigor.
  - **Rough tree**—A live timber species, 5.0 inches d.b.h. and larger, with two-

thirds (67 percent) or more of the merchantable volume cull, and more than half of this cull is due to sound dead wood volume loss, or severe form-defect volume loss (such as severe sweep, crook, forks). Also, a live timber species sapling (1.0 to 4.9 inches d.b.h.) that is not expected to become a sound (growing-stock) tree due to defect, or a timber species (5.0 inches d.b.h. and larger) that does not now, or prospectively, have at least one solid 8-foot section, reasonably free of form defect, on the merchantable portion.

  - **Rotten tree**—A live timber species, 5.0 inches d.b.h. and larger, with two-thirds (67 percent) or more of the merchantable volume cull, and more than half of this cull is due to rotten and/or missing material.
  - **Live woodland tree**—A live tree of any woodland species.

- Dead trees (timber or woodland species) are classified for Tree Class as follows:
  - **Hard dead tree (Salvable dead tree)**—A standing dead tally tree, 1.0 inch d.b.h./d.r.c. or larger, that has a minimum of one-third of the original merchantable volume sound (less than two-thirds rotten and/or missing material). Also, a down-dead tally tree, 1.0 inch d.b.h./d.r.c. or larger, with a minimum of one-third of the original merchantable volume sound and intact. See "Downed tree" and "Standing tree."
  - **Soft dead tree (Nonsalvable dead tree)**—A standing dead tree, 1.0 inch d.b.h./d.r.c. or larger, that has less than one-third of the original merchantable volume sound (more than two-thirds rotten/missing material). Also, a down-dead tree, 1.0 inch d.b.h./d.r.c. or larger, with less than one-third of the original merchantable bole sound and intact. See "Downed tree" and "Standing tree."

Tree-size class—A classification of trees based on d.b.h. for timber species and d.r.c. for woodland species. For woodland trees, with the exception of seedlings, stems qualifying for measurement must be at least 1.0 inch in diameter or larger and at least 1.0 foot in length:

- **Seedling**—An established tree smaller than 1.0 inch d.b.h. for timber species or 1.0 inch d.r.c. for woodland trees, and at least 4 inches tall for softwoods and 12.0 inches tall for hardwoods.
- **Sapling**—A timber species 1.0 to 4.9 inches d.b.h.; also, a single-stemmed woodland tree 1.0 to 4.9 inches d.r.c., or a multistemmed woodland tree with a cumulative d.r.c. of 1.0 to 4.9 inches.
- **Poletimber-size tree or medium tree**—A timber species at least 5.0 inches d.b.h., but smaller than 9.0 inches d.b.h. for a softwood, and smaller than 11.0 inches d.b.h. for a hardwood. A woodland tree 5.0 to 8.9 inches d.r.c. (single stem measurement or computed multistem measurement) is also included in this category.
- **Sawtimber-size tree or large tree**—A timber species that is at least 9.0 inches d.b.h. for a softwood, and at least 11.0 inches d.b.h. for a hardwood. A woodland tree 9.0 inches d.r.c. and larger (single stem measurement or computed multistem measurement) is also included in this category.

Volume for Timber Species—

- **Annual mortality volume**—The net volume contained in timber species (standing or down) that have died over a 1-year period. This estimate is based on a

5-year average. Mortality volume for timber species can be calculated in terms of cubic feet or board feet. See "Mortality tree."

- **Board-foot volume**—A board-foot is a unit of measure indicating the amount of wood contained in an unfinished board 1-foot wide, 1-foot long, and 1-inch thick. Board-foot volume is computed for the sawlog portion of a sawtimber-size tree; the sawlog portion includes the part of the bole on sawtimber-size tree from a 1-foot stump to a minimum sawlog top of 7 inches diameter outside bark (d.o.b.) for softwoods, or 9 inches d.o.b. for hardwoods. **Net board-foot volume** is calculated as the gross board-foot volume in the sawlog portion of a sawtimber-size tree, less deductions for cull (limited to rotten/missing material and form defect cull deductions, referred to as the **board-foot merchantability factor**). Board-foot volume estimates are computed in both Scribner and International ¼-inch rule, and can be calculated for live and/or dead (standing or down) trees.
- **Cubic-foot volume (merchantable)**—A cubic foot is a unit of measure indicating the amount of wood contained in a cube 1 by 1 by 1 foot. Cubic-foot volume is computed for the merchantable portion of a timber species tree; the merchantable portion includes that part of a bole from a 1-foot stump to a minimum 4-inch top, d.o.b. **Net cubic-foot volume** is calculated as the gross cubic-foot volume in the merchantable portion of a tree, less deductions for cull (limited to rotten/missing cull deductions, referred to as the **cubic-foot merchantability factor**). Merchantable cubic-foot volume estimates can be calculated for live and/or dead (standing or down) trees.

Volume for Woodland Trees—

- **Annual mortality volume**—The net volume contained in woodland trees (standing or down) that have died over a 1-year period. This estimate is based on a 5-year average. Mortality volume for woodland trees is calculated in cubic feet. See "Mortality tree."
- **Cubic-foot volume**—A cubic-foot is a unit of measure indicating the amount of wood contained in a cube 1 by 1 by 1 foot. Woodland cubic-foot volume is computed for trees 5.0 inches and larger in diameter.
  - **Dead volume**—For dead woodland trees, this volume is equal to gross cubic-foot volume. For live woodland trees, dead volume is calculated as gross cubic-foot volume times the field crew estimate of percent sound dead volume loss. Cull deductions are limited to the merchantable portion of a tree.
  - **Net volume**—The gross cubic-foot volume of live woodland trees, less deductions for rotten and missing material. This estimate includes volume for dead material on live trees. Cull deductions are limited to the merchantable portion of a tree.

Water—In terms of Ground Cover Classification, water includes streams, sloughs, estuaries, and canals more than 30 feet in width; and, lakes, reservoirs, and ponds more than 1 acre in size. Ephemeral and intermittent streams are classified as land. Water is further classified as "census water" or "noncensus" water as follows:

- **Census water**—Rivers, streams, sloughs, estuaries, and canals, more than 200 feet wide and 4.5 acres and larger in size; only portions of rivers and streams meeting the definition criteria are considered census water. Other census water includes lakes, reservoirs, and ponds more than 4.5 acres and larger in size. Portions of braided streams meeting the census water definition criteria and more than 50 percent water at normal high-water level are also considered census water.

- **Noncensus water**—Portions of rivers, streams, sloughs, estuaries, and canals that are 30 to 200 feet wide and at least 1 acre in size; and lakes, reservoirs, and ponds 1 to 4.5 acres in size. Portions of rivers and streams not meeting the criteria for census water, but at least 30 feet wide and 1 acre in size, are considered noncensus water. Portions of braided streams not meeting the criteria for census water, but at least 30 feet in width and 1 acre in size, and more than 50 percent water at normal high-water level are also considered noncensus water.

Wilderness—An area of undeveloped land currently included in the Wilderness System, managed to preserve its natural conditions and retain its primeval character and influence.

Woodland—See "Forest land."

Woodland species—Tree species that are not usually converted into industrial wood products. Common uses of woodland trees are fuelwood, fenceposts, and Christmas trees. These species include pinyon, juniper (except western juniper), mesquite, locust, mountain-mahogany, Rocky Mountain maple, bigtooth maple, desert ironwood, and most oaks (chinkapin oak is classified as a timber species). Because woodland trees are extremely variable in form, diameter is measured at the root collar.

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Appendix A: Common Name, Scientific Name, and Timberland (T) or Woodland (W) Designation for Trees

Tree Species

Aspen (*Populus tremuloides*) T

Bigtooth maple (*Acer grandidentatum*) W

Black cottonwood (*Populus balsamifera*) T

Blue spruce (*Picea pungens*) T

Boxelder (*Acer negundo*) T

Bur oak (*Quercus macrocarpa*) T

Common or twoneedle pinyon (*Pinus edulis*) T

Curlleaf mountain-mahogany (*Cercocarpus ledifolius*) W

Chinkapin oak (*Quercus muehlenbergii*) W

Douglas-fir (*Pseudotsuga menziesii*) T

Engelmann spruce (*Picea engelmannii*) T

Gambel oak (*Quercus gambelii*) W

Green ash (*Fraxinus pennsylvanica*) T

Limber pine (*Pinus flexilis*) T

Lodgepole pine (*Pinus contorta*) T

Narrowleaf cottonwood (*Populus angustifolia*) T

Paper birch (*Betula papyrifera*) T

Plains cottonwood (*Populus deltoides*) T

Ponderosa pine (*Pinus ponderosa*) T

Rocky Mountain juniper (*Juniperus scopulorum*) W

Rocky Mountain maple (*Acer glabrum*) W

Subalpine fir (*Abies lasiocarpa*) T

Utah juniper (*Juniperus osteosperma*) W

Appendix B: Volume and Biomass Equation Sources

Volume

Chojnacky (1985) was used for pinyon pine, Rocky Mountain juniper, and curlleaf mountain-mahogany maple volume estimation.

Chojnacky (1992) was used for oak volume estimation.

Edminster and others (1980) was used for western Wyoming ponderosa pine volume estimation.

Edminster and others (1982) was used for aspen volume estimation.

Kemp (1958) was used for cottonwood volume estimation.

Myers (1964) was used for eastern Wyoming ponderosa pine volume estimation.

Myers and Edminster (1972) was used for Douglas-fir, subalpine fir, and Engelmann spruce volume estimation.

Myers (1964) was used for lodgepole pine and limber volume estimation.

Biomass

Chojnacky (1984) was used for mountain mahogany biomass estimation.

Chojnacky (1992). was used for oak and maple biomass estimation.

Chojnacky and Moisen (1993) was used for pinyon and juniper biomass estimation.

Van Hooser and Chojnacky (1983) was used for all timber species biomass estimation.

Forest Inventory and Analysis Tables

Total Forest Land

Table 1--Total area by ownership class and land class, Wyoming, 2002

	Land class												
	Nonreserved				Reserved				Total				
Ownership class	Forest	Nonforest	Noncensus Water	Total	Forest	Nonforest	Noncensus Water	Total	Forest	Nonforest	Noncensus Water	Census Water	Total
	Acres												
Land													
Public													
National Forest	4,090,563	1,995,959	9,226	6,095,748	1,937,291	1,156,869	17,072	3,111,232	6,027,854	3,152,828	26,299		9,206,980
Bureau of Land Management	1,290,164	17,022,200	9,193	18,321,556	--	--	--	--	1,290,164	17,022,200	9,193		18,321,556
National Park	--	--	--	--	1,750,908	475,474	9,417	2,235,799	1,750,908	475,474	9,417		2,235,799
Miscellaneous Federal	9,435	190,552	2,525	202,512	5,724	65,741	--	71,465	15,159	256,293	2,525		273,977
State	418,649	3,407,469	3,080	3,829,198	--	--	--	--	418,649	3,407,469	3,080		3,829,198
County and municipal	--	20,219	--	20,219	--	--	--	--	--	20,219	--		20,219
Total public	5,808,810	22,636,400	24,024	28,469,234	3,693,923	1,698,083	26,490	5,418,496	9,502,733	24,334,483	50,514		33,887,730
Private													
Indian Trust	196,733	1,415,671	1,798	1,614,202	90,194	88,390	1,804	180,387	286,927	1,504,061	3,601		1,794,589
Other private	1,655,235	24,753,507	55,845	26,464,587	--	--	--	--	1,655,235	24,753,507	55,845		26,464,587
Total private	1,851,968	26,169,178	57,643	28,078,789	90,194	88,390	1,804	180,387	1,942,162	26,257,568	59,447		28,259,176
Total land area	7,660,778	48,805,578	81,667	56,548,023	3,784,117	1,786,473	28,293	5,598,883	11,444,895	50,592,051	109,961		62,146,906
Census water[a]												456,678	456,678
Total land and water[a]	7,660,778	48,805,578	81,667	56,548,023	3,784,117	1,786,473	28,293	5,598,883	11,444,895	50,592,051	109,961	456,678	62,603,584

[a]Source: U.S. Bureau of the Census, 1991.

Table 2---Percent standard error for area, volume, growth, and mortality on forest land, Wyoming

Land class	Attribute	Area (acres)	Volume (thousand)	Percent standard error
Forest land[a]	Area, 2002	11,444,895		±1.30
	Net volume, all live trees (cubic feet), 2002		19,811,769	±2.32
	Net annual growth, all tree classes (cubic feet), 2001		158,335	±9.74
	Annual mortality, all tree classes (cubic feet), 2001		172,508	±8.51
Nonreserved forest land:				
Timberland	Area, 2002	6,490,826		±1.78
	Net volume, 2002:			
	Growing stock (cubic feet)		11,553,568	±2.77
	Sawtimber - International ¼-inch rule (board feet)		43,581,828	±3.48
	Sawtimber - Scribner rule (board feet)		37,347,882	±3.52
	Net annual growth, 2001:			
	Growing stock (cubic feet)		128,692	±8.47
	Sawtimber - International ¼-inch rule (board feet)		790,348	±8.16
	Sawtimber - Scribner rule (board feet)		639,288	±8.62
	Annual mortality, 2001:			
	Growing stock (cubic feet)		88,427	±11.04
	Sawtimber - International ¼-inch rule (board feet)		366,155	±13.87
	Sawtimber - Scribner rule (board feet)		312,777	±13.90
Woodland	Area, 2002	1,169,952		±6.97
	Net volume, all live trees (cubic feet), 2002		343,010	±11.12
	Net annual growth, all tree classes (cubic feet), 2001		1,782	±49.32
	Annual mortality, all tree classes (cubic feet), 2001		1,731	±47.61
Reserved forest land:				
Timberland	Area, 2002	3,773,510		±1.72
	Net volume, Growing stock (cubic feet), 2002		7,534,110	±4.33
	Net annual growth, Growing stock (cubic feet), 2001		25,797	±41.54
	Annual mortality, Growing stock (cubic feet), 2001		76,867	±14.00
Woodland	Area, 2002	10,610		±69.50
	Net volume, all live trees (cubic feet), 2002		4,260	±68.06
	Net annual growth, all tree classes (cubic feet), 2001		0	±0.00
	Annual mortality, all tree classes (cubic feet), 2001		0	±0.00

[a]Includes cull volume on timberland and woodland that is not reported in growing stock numbers.

Table 3--Area of forest land by forest type, owner group, and land class, Wyoming, 2002

Forest type	Owner group											
	National Forest			Other public			Nonindustrial private			Total		
	Nonreserved	Reserved	Total	Nonreserved	Reserved	Total	Nonreserved	Reserved	Total	Nonreserved	Reserved	Total
	Acres											
Aspen	388,603	29,981	418,584	116,546	37,194	153,740	120,305	--	120,305	625,454	67,175	692,629
Blue spruce	18,521	--	18,521	--	--	--	4,652	--	4,652	23,172	--	23,172
Bur oak	29,319	--	29,319	13,066	--	13,066	53,797	--	53,797	96,182	--	96,182
Cercocarpus woodland	2,088	--	2,088	14,923	--	14,923	--	--	--	17,011	--	17,011
Cottonwood	--	5,620	5,620	6,260	--	6,260	84,952	--	84,952	91,212	5,620	96,832
Deciduous woodland oak	8,075	--	8,075	--	--	--	--	--	--	8,075	--	8,075
Douglas-fir	517,101	193,798	710,899	71,371	53,425	124,796	84,222	--	84,222	672,693	247,223	919,916
Engelmann spruce	345,278	426,628	771,906	18,773	90,794	109,567	21,019	14,431	35,450	385,070	531,854	916,923
Green ash	--	--	--	6,470	--	6,470	4,874	--	4,874	11,344	--	11,344
Juniper	30,077	--	30,077	542,356	3,730	546,086	282,308	--	282,308	854,741	3,730	858,471
Limber pine	102,017	31,363	133,380	201,399	7,208	208,607	118,413	--	118,413	421,829	38,572	460,400
Lodgepole pine	1,094,224	330,497	1,424,721	100,080	1,039,454	1,139,535	72,856	36,077	108,933	1,267,160	1,406,029	2,673,189
Maple woodland	26,459	6,880	33,339	6,350	--	6,350	7,528	--	7,528	40,337	6,880	47,217
Paper birch	6,670	--	6,670	--	--	--	--	--	--	6,670	--	6,670
Pinyon-juniper	--	--	--	10,927	--	10,927	--	--	--	10,927	--	10,927
Ponderosa pine	229,830	--	229,830	197,265	--	197,265	637,306	--	637,306	1,064,400	--	1,064,400
Spruce-fir	992,084	442,678	1,434,761	78,646	304,805	383,452	31,117	--	31,117	1,101,847	747,483	1,849,330
Whitebark pine	142,049	289,432	431,482	11,465	50,815	62,280	20,950	39,685	60,635	174,464	379,932	554,397
Nonstocked timberland	155,287	180,413	335,700	161,518	169,206	330,725	232,523	--	232,523	549,329	349,619	898,948
Nonstocked woodland	2,883	--	2,883	160,833	--	160,833	75,145	--	75,145	238,860	--	238,860
All types[a]	4,090,563	1,937,291	6,027,854	1,718,247	1,756,632	3,474,880	1,851,968	90,194	1,942,162	7,660,778	3,784,117	11,444,895

[a]On this and all subsequent tables, totals may vary due to rounding.

Table 4--Area of forest land by forest type, stand-size class, and productivity class, Wyoming, 2002

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 4 (Con.)

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 5--Area of National Forest System forest land by forest type, stand-size class, and productivity class, Wyoming, 2002

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 5 (Con.)

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 6--Area of other publicly owned forest land by forest type, stand-size class, and productivity class, Wyoming, 2002

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 6 (Con.)

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	Acres				
Limber pine					
Sawtimbe	--	--	37,603	30,240	67,843
Poletimber	--	--	35,392	7,323	42,716
Sapling/seedling	--	--	17,357	80,692	98,049
Nonstocked	--	--	--	--	--
Total	--	--	90,352	118,255	208,607
Lodgepole pine					
Sawtimber	--	58,662	355,032	--	413,695
Poletimber	--	12,876	193,892	--	206,768
Sapling/seedling	--	--	468,327	50,744	519,072
Nonstocked	--	--	--	--	--
Total	--	71,539	1,017,252	50,744	1,139,535
Maple woodland					
Sawtimber	--	--	--	--	--
Poletimber	--	--	--	--	--
Sapling/seedling	--	--	--	6,350	6,350
Nonstocked	--	--	--	--	--
Total	--	--	--	6,350	6,350
Paper birch					
Sawtimber	--	--	--	--	--
Poletimber	--	--	--	--	--
Sapling/seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	--	--	--	--
Pinyon-juniper					
Sawtimber	--	--	--	10,927	10,927
Poletimber	--	--	--	--	--
Sapling/seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	--	--	10,927	10,927
Ponderosa pine					
Sawtimber	--	--	175,506	--	175,506
Poletimber	--	--	21,759	--	21,759
Sapling/seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	--	197,265	--	197,265
Spruce-fir					
Sawtimber	--	69,775	192,559	--	262,333
Poletimber	--	8,573	56,448	--	65,022
Sapling/seedling	--	9,330	46,767	--	56,097
Nonstocked	--	--	--	--	--
Total	--	87,678	295,774	--	383,452
Whitebark pine					
Sawtimber	--	--	47,202	--	47,202
Poletimber	--	--	5,748	--	5,748
Sapling/seedling	--	--	6,438	2,892	9,330
Nonstocked	--	--	--	--	--
Total	--	--	59,388	2,892	62,280
Nonstocked timberland					
Sawtimber	--	--	--	--	--
Poletimber	--	--	--	--	--
Sapling/seedling	--	--	--	--	--
Nonstocked	--	20,097	257,413	53,214	330,725
Total	--	20,097	257,413	53,214	330,725
Nonstocked woodland					
Sawtimber	--	--	--	--	--
Poletimber	--	--	--	--	--
Sapling/seedling	--	--	--	--	--
Nonstocked	--	--	--	160,833	160,833
Total	--	--	--	160,833	160,833
All types					
Sawtimber	--	176,551	946,694	565,204	1,688,449
Poletimber	--	32,665	406,404	22,861	461,930
Sapling/seedling	--	18,987	611,888	202,068	832,943
Nonstocked	--	20,097	257,413	214,047	491,557
Total	--	248,300	2,222,400	1,004,180	3,474,880

Table 7--Area of nonindustrial private forest land by forest type, stand-size class, and productivity class, Wyoming, 2002

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 7 (Con.)

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 8--Area of forest land by stand volume and owner group, Wyoming, 2002

Stand volume per acre[a]	Owner group: National Forest	Other public	Nonindustrial private	Total
	Acres			
Less than 1,500 board feet	1,678,130	2,009,561	1,162,188	4,849,879
1,500 to 4,999 board feet	1,284,641	556,328	394,183	2,235,152
5,000 to 9,999 board feet	1,186,427	408,237	268,261	1,862,925
10,000 board feet or more	1,878,656	500,753	117,529	2,496,939
Total	6,027,854	3,474,880	1,942,162	11,444,895

[a]International ¼-inch rule.

Table 9--Area of forest land by forest type and stocking condition, Wyoming, 2002

Forest type	Stocking condition: Overstocked timberland	Fully stocked timberland	Medium to fully stocked timberland	Poorly stocked timberland	Nonstocked timberland	Woodland	Total
	Acres						
Aspen	76,276	259,210	229,932	127,210	--	--	692,629
Blue spruce	2,883	4,635	9,889	5,766	--	--	23,172
Bur oak	11,712	21,662	47,251	15,557	--	--	96,182
Cercocarpus woodland	--	--	--	--	--	17,011	17,011
Cottonwood	8,202	33,338	36,852	18,440	--	--	96,832
Deciduous woodland oak	--	--	--	--	--	8,075	8,075
Douglas-fir	34,153	207,560	344,600	333,604	--	--	919,916
Engelmann spruce	35,987	404,772	302,095	174,069	--	--	916,923
Green ash	--	--	4,874	6,470	--	--	11,344
Juniper	--	--	--	--	--	858,471	858,471
Limber pine	15,209	77,149	61,122	306,920	--	--	460,400
Lodgepole pine	87,298	764,779	1,093,905	727,207	--	--	2,673,189
Maple woodland	--	--	--	--	--	47,217	47,217
Paper birch	--	5,336	1,334	--	--	--	6,670
Pinyon-juniper	--	--	--	--	--	10,927	10,927
Ponderosa pine	3,507	73,803	327,386	659,704	--	--	1,064,400
Spruce-fir	60,261	649,688	742,563	396,819	--	--	1,849,330
Whitebark pine	15,311	201,339	163,498	174,248	--	--	554,397
Nonstocked timberland	--	--	--	--	898,948	--	898,948
Nonstocked woodland	--	--	--	--	--	238,860	238,860
All types	350,799	2,703,270	3,365,300	2,946,015	898,948	1,180,562	11,444,895

Table 10--Basal area of forest land by forest type and basal area class, Wyoming, 2002

Forest type	Basal area class												Total
	0	1-25	26-50	51-75	76-100	101-150	151-200	201-250	251-300	301-350	351-400	401+	
	Acres												
Aspen	58,406	140,211	177,149	79,127	63,509	82,430	58,896	28,803	2,789	1,309	--	--	692,629
Blue spruce	--	--	4,652	--	5,766	9,872	--	--	--	--	2,883	--	23,172
Bur oak	--	18,792	24,008	15,942	12,022	19,408	6,011	--	--	--	--	--	96,182
Cercocarpus woodland	--	--	6,350	2,088	8,573	--	--	--	--	--	--	--	17,011
Cottonwood	4,664	23,964	16,390	8,077	--	34,605	5,762	--	--	--	--	3,370	96,832
Deciduous woodland oak	--	--	4,147	--	3,928	--	--	--	--	--	--	--	8,075
Douglas-fir	14,570	40,924	118,137	123,986	154,317	274,139	128,794	33,045	23,614	7,202	--	1,187	919,916
Engelmann spruce	16,588	75,067	48,078	68,217	71,157	196,062	215,896	144,699	51,047	26,888	--	3,223	916,923
Green ash	--	--	6,470	4,874	--	--	--	--	--	--	--	--	11,344
Juniper	255	52,791	257,240	182,595	95,943	157,035	68,568	19,625	10,038	14,380	--	--	858,471
Limber pine	12,057	171,015	122,789	38,011	7,763	55,364	21,927	23,638	7,835	--	--	--	460,400
Lodgepole pine	324,184	272,662	154,298	270,395	351,658	659,359	464,533	155,540	18,437	1,720	402	--	2,673,189
Maple woodland	1,441	24,780	8,350	6,880	5,766	--	--	--	--	--	--	--	47,217
Paper birch	--	1,334	5,336	--	--	--	--	--	--	--	--	--	6,670
Pinyon-juniper	--	--	--	--	--	4,683	6,244	--	--	--	--	--	10,927
Ponderosa pine	2,969	64,799	293,424	332,816	144,328	192,902	31,281	1,882	--	--	--	--	1,064,400
Spruce-fir	20,489	107,209	131,713	193,240	233,224	579,805	376,994	103,261	73,293	29,099	1,003	--	1,849,330
Whitebark pine	10,032	43,616	30,164	117,366	47,720	88,568	115,663	77,713	11,992	8,490	3,073	--	554,397
Nonstocked timberland	401,822	497,126	--	--	--	--	--	--	--	--	--	--	898,948
Nonstocked woodland	81,413	157,448	--	--	--	--	--	--	--	--	--	--	238,860
All types	948,891	1,691,738	1,408,696	1,443,613	1,205,674	2,354,234	1,500,569	588,206	199,045	89,089	7,360	7,780	11,444,895

Table 11--Area of forest land by forest type and stand-age class, Wyoming, 2002

Forest type	Stand-age class									All classes
	Nonstocked/ Unclassified	1-50	51-100	101-150	151-200	201-250	251-300	301-350	351-400	
	Acres									
Aspen	--	295,543	332,487	57,046	7,552	--	--	--	--	692,629
Blue spruce	--	4,652	9,872	8,648	--	--	--	--	--	23,172
Bur oak	--	33,829	56,343	6,011	--	--	--	--	--	96,182
Cercocarpus woodland	--	14,923	2,088	--	--	--	--	--	--	17,011
Cottonwood	--	26,578	29,113	24,644	13,775	2,722	--	--	--	96,832
Deciduous woodland oak	--	3,928	4,147	--	--	--	--	--	--	8,075
Douglas-fir	--	85,528	278,342	227,059	173,719	103,650	33,875	9,007	8,736	919,916
Engelmann spruce	--	134,956	75,835	195,462	263,496	174,929	64,870	7,375	--	916,923
Green ash	--	--	6,470	4,874	--	--	--	--	--	11,344
Juniper	--	101,563	391,209	189,891	133,176	30,038	6,244	6,350	--	858,471
Limber pine	--	160,253	136,861	70,458	67,571	11,127	8,139	--	5,991	460,400
Lodgepole pine	--	804,563	736,905	671,097	268,953	145,961	38,574	7,136	--	2,673,189
Maple woodland	--	31,987	6,880	8,350	--	--	--	--	--	47,217
Paper birch	--	6,670	--	--	--	--	--	--	--	6,670
Pinyon-juniper	--	--	6,244	4,683	--	--	--	--	--	10,927
Ponderosa pine	--	98,238	549,546	350,735	35,566	24,668	--	5,646	--	1,064,400
Spruce-fir	--	250,340	419,043	634,361	365,594	123,863	40,638	8,355	7,136	1,849,330
Whitebark pine	--	87,232	53,693	89,533	183,132	87,248	53,559	--	--	554,397
Nonstocked timberland	898,948	--	--	--	--	--	--	--	--	898,948
Nonstocked woodland	238,860	--	--	--	--	--	--	--	--	238,860
All types	1,137,808	2,140,785	3,095,076	2,542,854	1,512,534	704,207	245,899	43,869	21,863	11,444,895

Table 12--Area of forest land by forest type and percent stand density index, Wyoming, 2002

Forest type	Percent of maximum stand density index (SDI)						Total
	< 10	10.0-24.9	25.0-34.9	35.0-49.9	50.0-59.9	60+	
	Acres						
Aspen	180,031	190,358	83,903	91,850	35,682	110,805	692,629
Blue spruce	--	15,655	4,635	--	--	2,883	23,172
Bur oak	9,409	33,391	17,879	14,592	8,523	12,387	96,182
Cercocarpus woodland	--	--	8,438	8,573	--	--	17,011
Cottonwood	28,628	22,584	1,882	40,367	--	3,370	96,832
Deciduous woodland oak	--	4,147	--	--	--	3,928	8,075
Douglas-fir	81,531	232,457	211,928	221,807	84,935	87,257	919,916
Engelmann spruce	115,134	161,908	219,313	255,570	99,325	65,674	916,923
Green ash	--	11,344	--	--	--	--	11,344
Juniper	20,067	253,655	186,155	151,501	64,568	182,526	858,471
Limber pine	164,246	161,113	23,967	31,821	26,389	52,864	460,400
Lodgepole pine	624,227	597,025	485,536	627,813	202,280	136,308	2,673,189
Maple woodland	13,557	27,895	--	5,766	--	--	47,217
Paper birch	1,334	5,336	--	--	--	--	6,670
Pinyon-juniper	--	--	--	4,683	6,244	--	10,927
Ponderosa pine	71,617	433,445	231,454	195,337	61,255	71,292	1,064,400
Spruce-fir	175,635	401,412	411,704	519,514	171,118	169,948	1,849,330
Whitebark pine	27,995	111,840	82,844	83,483	86,160	162,075	554,397
Nonstocked timberland	898,948	--	--	--	--	--	898,948
Nonstocked woodland	238,860	--	--	--	--	--	238,860
All types	2,651,220	2,663,564	1,969,637	2,252,678	846,479	1,061,317	11,444,895

Table 13--Area of forest land by habitat type series and forest type, Wyoming, 2002

Habitat type series	Forest type											
	Aspen	Blue spruce	Bur oak	Cercocarpus woodland	Cottonwood	Deciduous woodland oak	Douglas-fir	Engelmann spruce	Green ash	Juniper	Limber pine	Lodgepole pine
	Acres											
White fir - Douglas-fir	--	--	--	--	--	--	--	--	--	--	--	--
Subalpine fir	245,199	13,886	--	--	5,620	--	292,754	540,456	--	--	47,873	1,291,336
Subalpine fir-Engelmann spurce	1,402	--	--	--	--	--	11,347	60,496	--	--	11,497	177,156
Engelmann spruce	23,447	4,635	--	--	4,802	--	67,979	315,971	--	--	7,825	168,769
Blue spruce	--	4,652	--	--	--	--	--	--	--	--	--	--
Lodgepole pine	32,519	--	--	--	--	--	6,880	--	--	--	5,136	779,799
Limber pine	43,687	--	--	6,350	--	--	19,535	--	--	51,836	355,425	19,703
Ponderosa pine	23,668	--	73,969	--	--	--	--	--	--	120,356	--	12,095
Douglas-fir	46,709	--	--	8,573	--	--	516,711	--	--	16,973	32,644	111,815
Whitebark pine	6,281	--	--	--	--	--	4,711	--	--	--	--	108,827
Aspen	269,716	--	--	--	--	--	--	--	--	--	--	--
Conifer	--	--	--	--	--	--	--	--	--	--	--	3,688
Utah juniper	--	--	--	--	--	--	--	--	--	397,560	--	--
Rocky Mountain juniper	--	--	--	--	--	--	--	--	--	271,746	--	--
Narrowleaf cottonwood	--	--	--	--	44,881	--	--	--	--	--	--	--
Curlleaf mountain-mahogany	--	--	--	2,088	--	--	--	--	--	--	--	--
Boxelder	--	--	--	--	--	--	--	--	6,470	--	--	--
Eastern cottonwood	--	--	--	--	41,530	--	--	--	--	--	--	--
Bur oak	--	--	16,877	--	--	--	--	--	--	--	--	--
Green ash - American elm	--	--	--	--	--	--	--	--	4,874	--	--	--
Paper birch	--	--	5,336	--	--	--	--	--	--	--	--	--
Gambel oak	--	--	--	--	--	8,075	--	--	--	--	--	--
All types	692,629	23,172	96,182	17,011	96,832	8,075	919,916	916,923	11,344	858,471	460,400	2,673,189

(con.)

Table 13 (Con.)

Habitat type series	Forest type								
	Maple woodland	Paper birch	Pinyon-juniper	Ponderosa pine	Spruce-fir	Whitebark pine	Nonstocked timberland	Nonstocked woodland	Total
	Acres								
White fir - Douglas-fir	--	--	--	--	--	--	--	--	--
Subalpine fir	19,881	--	--	5,900	1,623,618	295,908	256,630	--	4,639,062
Subalpine fir-Engelmann spurce	--	--	--	--	210,127	--	7,051	--	479,076
Engelmann spruce	--	--	--	--	12,317	118,888	58,931	--	783,563
Blue spruce	--	--	--	--	--	--	--	--	4,652
Lodgepole pine	--	--	--	--	--	--	56,762	--	881,097
Limber pine	6,350	--	--	6,195	--	--	171,577	6,350	687,008
Ponderosa pine	7,528	--	--	1,014,546	--	--	218,574	33,027	1,503,764
Douglas-fir	6,578	--	--	37,759	--	--	94,391	8,667	880,819
Whitebark pine	--	--	--	--	3,269	139,601	14,923	--	277,612
Aspen	6,880	--	--	--	--	--	5,352	--	281,948
Conifer	--	--	--	--	--	--	--	--	3,688
Utah juniper	--	--	10,927	--	--	--	--	102,487	510,973
Rocky Mountain juniper	--	--	--	--	--	--	--	61,699	333,445
Narrowleaf cottonwood	--	--	--	--	--	--	11,990	--	56,870
Curlleaf mountain-mahogany	--	--	--	--	--	--	--	26,631	28,719
Boxelder	--	--	--	--	--	--	--	--	6,470
Eastern cottonwood	--	--	--	--	--	--	1,511	--	43,041
Bur oak	--	--	--	--	--	--	1,256	--	18,133
Green ash - American elm	--	--	--	--	--	--	--	--	4,874
Paper birch	--	6,670	--	--	--	--	--	--	12,005
Gambel oak	--	--	--	--	--	--	--	--	8,075
All types	47,217	6,670	10,927	1,064,400	1,849,330	554,397	898,948	238,860	11,444,895

Table 14--Number of live trees on forest land by species and diameter class, Wyoming, 2002

Species	Diameter class (inches) 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+	All classes
	Thousand trees															
Blue spruce	432	--	487	280	406	304	187	439	37	63	32	--	66	69	69	2,871
Common or twoneedle pinyon[a]	--	--	75	--	--	38	--	--	--	--	--	--	--	--	--	113
Douglas-fir	85,864	47,624	36,600	29,410	23,420	14,849	10,367	6,618	4,749	2,660	1,628	872	851	521	582	266,615
Engelmann spruce	169,376	87,712	61,570	43,057	34,830	23,990	17,395	12,455	9,821	7,281	4,507	3,224	1,677	1,316	1,842	480,053
Limber pine	58,015	40,279	23,801	15,781	10,279	5,627	3,644	1,600	1,055	359	292	175	234	97	174	161,412
Lodgepole pine	388,601	247,340	203,926	157,334	95,420	49,190	24,329	11,587	5,394	2,053	1,027	457	107	88	74	1,186,926
Ponderosa pine	80,928	68,399	36,235	28,785	19,690	15,341	9,155	5,623	2,779	1,461	447	493	187	147	--	269,670
Rocky Mountain juniper[a]	70,363	33,975	17,863	13,079	7,883	4,476	3,598	2,561	1,158	757	471	199	116	41	123	156,663
Subalpine fir	581,850	220,653	123,889	69,317	36,622	22,073	12,410	6,937	3,802	1,487	852	449	199	83	45	1,080,671
Utah juniper	18,208	12,188	7,040	7,469	6,548	5,671	4,272	2,231	2,247	2,040	1,343	944	569	363	1,267	72,401
Whitebark pine	84,137	44,955	36,829	28,300	18,081	11,679	7,925	4,806	2,752	1,444	884	467	521	304	515	243,599
Softwood total	1,537,775	803,126	548,314	392,812	253,181	153,238	93,281	54,858	33,793	19,605	11,484	7,278	4,528	3,029	4,692	3,920,994
Aspen	168,816	57,766	43,673	29,867	14,900	7,050	2,578	744	271	114	--	--	--	--	--	325,779
Bigtooth maple[a]	10,545	3,756	104	69	--	--	--	--	--	--	--	--	--	--	--	14,474
Black cottonwood	--	465	75	37	--	37	--	--	--	--	--	37	--	--	--	652
Boxelder	--	--	343	36	78	78	73	--	--	--	--	--	--	--	--	608
Bur oak	19,636	11,874	6,574	2,555	976	459	32	39	--	--	--	--	--	--	--	42,146
Curlleaf mountain-mahogany[a]	4,618	4,572	1,059	798	481	199	102	--	45	--	--	--	--	--	--	11,873
Gambel oak[a]	9,816	785	252	32	--	--	--	--	--	--	--	--	--	--	--	10,885
Green ash	453	451	256	572	416	310	78	36	--	--	--	--	--	--	--	2,573
Narrowleaf cottonwood	2,579	516	475	378	229	75	284	233	312	39	39	33	156	--	39	5,388
Paper birch	4,800	400	803	193	--	--	--	--	--	--	--	--	--	--	--	6,195
Plains cottonwood	--	--	392	481	295	133	95	48	74	41	223	82	115	109	296	2,383
Rocky Mountain maple[a]	36,385	2,593	128	50	--	--	--	--	--	--	50	--	--	--	55	39,262
Hardwood total	257,646	83,177	54,134	35,068	17,376	8,341	3,242	1,101	702	194	312	152	271	109	391	462,216
All species	1,795,422	886,304	602,448	427,879	270,557	161,579	96,523	55,959	34,495	19,799	11,796	7,431	4,798	3,138	5,082	4,383,210

[a]Diameter taken at root collar rather than at breast height.

Table 15--Number of standing dead trees on forest land by species and diameter class, Wyoming, 2002

Species	Diameter class (inches) 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+	All classes
	Thousand trees															
Blue spruce	--	--	37	--	69	43	--	--	--	--	35	--	35	--	--	219
Common or twoneedle pinyon[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Douglas-fir	19,531	10,126	9,197	5,686	3,637	3,404	2,265	1,549	1,126	755	683	536	262	190	320	59,267
Engelmann spruce	26,723	4,689	7,737	7,625	5,024	5,062	3,596	2,935	2,404	1,569	1,409	918	299	216	764	70,969
Limber pine	14,507	11,083	7,190	5,343	3,962	2,235	969	676	256	150	197	37	36	--	84	46,723
Lodgepole pine	107,106	86,106	60,763	50,484	38,078	22,813	12,101	6,770	2,934	1,321	526	279	199	--	72	389,552
Ponderosa pine	5,701	1,791	1,938	1,276	1,194	485	707	723	322	192	84	69	81	36	--	14,598
Rocky Mountain juniper[a]	8,962	5,136	2,193	1,529	1,384	971	335	194	118	--	78	--	--	--	--	20,899
Subalpine fir	79,037	43,043	32,031	21,962	14,561	7,742	3,657	1,884	1,354	724	479	193	113	87	--	206,868
Utah juniper[a]	936	1,378	1,208	1,528	1,034	556	313	264	296	114	38	--	75	--	38	7,777
Whitebark pine	9,186	10,346	6,155	6,274	4,604	2,137	1,986	710	957	528	266	153	76	--	117	43,494
Softwood total	271,689	173,696	128,450	101,707	73,546	45,445	25,929	15,706	9,767	5,353	3,796	2,185	1,175	528	1,395	860,366
Aspen	47,554	29,101	13,180	5,792	2,499	1,031	435	189	--	--	--	--	--	--	--	99,782
Bigtooth maple[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black cottonwood	465	930	--	--	--	--	--	--	--	--	--	--	--	--	--	1,395
Boxelder	1,940	--	114	78	--	--	--	--	--	--	--	--	--	--	--	2,132
Bur oak	4,508	2,664	512	118	75	--	--	36	--	--	--	--	--	--	--	7,913
Curlleaf mountain-mahogany[a]	1,904	--	85	135	50	85	--	--	--	--	--	--	--	--	--	2,260
Gambel oak[a]	393	--	32	--	--	--	--	--	--	--	--	--	--	--	--	424
Green ash	--	--	--	--	78	--	--	--	--	--	--	--	--	--	--	78
Narrowleaf cottonwood	--	516	71	41	84	130	--	76	38	39	39	--	--	--	--	1,034
Paper birch	400	400	96	--	--	--	--	--	--	--	--	--	--	--	--	896
Plains cottonwood	974	487	87	--	41	--	--	--	--	--	--	--	--	--	36	1,626
Rocky Mountain maple[a]	10,921	--	69	--	--	--	--	--	--	--	--	--	--	--	--	10,990
Hardwood total	69,060	34,098	14,246	6,164	2,828	1,246	435	301	38	39	39	--	--	--	36	128,530
All species	340,748	207,793	142,696	107,870	76,374	46,691	26,364	16,006	9,805	5,392	3,835	2,185	1,175	528	1,431	988,895

[a]Diameter taken at root collar rather than at breast height.

Table 16--Total oven-dry weight of biomass of all live trees on forest land by species and diameter class, Wyoming, 2002

Species	Diameter class (inches) 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+	All classes
	Thousand tons															
Blue spruce	2	--	17	26	70	77	69	239	25	60	29	--	126	162	338	1,241
Common or twoneedle pinyon[a]	--	--	([b])	--	--	2	--	--	--	--	--	--	--	--	--	2
Douglas-fir	472	1,167	1,916	3,445	5,025	5,151	5,222	4,619	4,553	3,034	2,342	1,560	1,752	1,224	2,094	43,576
Engelmann spruce	1,016	1,886	2,544	4,121	6,177	6,589	7,158	7,291	7,558	7,126	5,457	4,669	2,909	2,512	5,027	72,040
Limber pine	290	866	975	1,199	1,518	1,419	1,384	769	648	277	315	151	347	136	362	10,656
Lodgepole pine	1,943	4,947	12,936	19,400	21,013	17,220	11,960	7,159	4,360	2,069	1,260	611	195	162	193	105,427
Ponderosa pine	405	1,368	1,618	2,410	3,015	3,934	3,574	3,245	2,342	1,484	564	784	392	330	--	25,462
Rocky Mountain juniper[a]	43	116	133	191	198	172	198	177	111	85	61	51	26	9	39	1,608
Subalpine fir	3,200	4,744	5,316	6,675	6,473	6,148	5,055	3,891	2,861	1,360	948	587	296	161	125	47,842
Utah juniper[a]	6	23	31	70	117	166	180	136	198	231	201	159	131	99	705	2,453
Whitebark pine	421	967	1,674	2,494	2,958	3,196	3,156	2,461	1,872	1,259	880	573	770	528	1,164	24,373
Softwood total	7,798	16,083	27,161	40,032	46,563	44,073	37,955	29,986	24,527	16,985	12,058	9,144	6,945	5,323	10,048	334,680
Aspen	338	549	1,360	2,556	2,554	1,984	1,080	376	184	96	--	--	--	--	--	11,075
Bigtooth maple[a]	19	37	5	6	--	--	--	--	--	--	--	--	--	--	--	68
Black cottonwood	--	4	2	2	--	7	--	--	--	--	--	39	--	--	--	55
Boxelder	--	--	6	2	8	13	16	--	--	--	--	--	--	--	--	45
Bur oak	39	113	98	119	90	79	9	12	--	--	--	--	--	--	--	559
Curlleaf mountain-mahogany[a]	11	36	24	44	47	33	25	--	25	--	--	--	--	--	--	246
Gambel oak[a]	30	5	11	3	--	--	--	--	--	--	--	--	--	--	--	49
Green ash	1	4	4	26	41	50	13	12	--	--	--	--	--	--	--	151
Narrowleaf cottonwood	5	5	10	24	34	17	92	110	188	31	31	24	169	--	78	817
Paper birch	10	4	28	15	--	--	--	--	--	--	--	--	--	--	--	56
Plains cottonwood	--	--	7	27	31	32	35	23	31	27	176	73	107	189	974	1,732
Rocky Mountain maple[a]	44	18	4	1	--	--	--	--	--	--	25	--	--	--	55	146
Hardwood total	497	775	1,559	2,826	2,805	2,214	1,269	533	427	154	231	136	276	189	1,107	14,998
All species	8,295	16,859	28,719	42,858	49,368	46,287	39,223	30,519	24,954	17,139	12,289	9,280	7,221	5,512	11,155	349,678

[a]Diameter taken at root collar rather than at breast height.
[b]Less than 500 tons.

Table 17--Net volume of all live trees on forest land by forest type and stand-size class, Wyoming, 2002

Forest type	Stand-size class: Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	All classes
	Thousand cubic feet				
Aspen	172,065	492,584	56,906	--	721,554
Blue spruce	85,677	--	5,144	--	90,820
Bur oak	23,441	42,661	11,218	--	77,319
Cercocarpus woodland	3,238	--	161	--	3,398
Cottonwood	170,120	4,110	4,556	--	178,786
Deciduous woodland oak	--	530	157	--	687
Douglas-fir	1,894,959	141,301	17,856	--	2,054,116
Engelmann spruce	3,117,523	73,109	36,668	--	3,227,300
Green ash	2,701	1,959	--	--	4,660
Juniper	293,952	5,592	9,524	--	309,068
Limber pine	340,272	42,984	12,279	--	395,535
Lodgepole pine	3,584,781	1,647,419	185,924	--	5,418,124
Maple woodland	5,729	--	14,281	--	20,010
Paper birch	--	--	1,953	--	1,953
Pinyon-juniper	6,473	--	--	--	6,473
Ponderosa pine	1,000,246	108,443	18,734	--	1,127,423
Spruce-fir	4,265,786	536,511	90,893	--	4,893,190
Whitebark pine	1,142,134	54,332	23,232	--	1,219,698
Nonstocked timberland	--	--	--	54,017	54,017
Nonstocked woodland	--	--	--	7,638	7,638
All types	16,109,095	3,151,537	489,483	61,655	19,811,769

Table 18--Net volume of all live trees on forest land by species and owner group, Wyoming, 2002

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand cubic feet			
Blue spruce	82,148	--	5,144	87,292
Common or twoneedle pinyon[a]	--	192	--	192
Douglas-fir	1,656,268	282,634	194,896	2,133,797
Engelmann spruce	3,934,459	614,853	152,867	4,702,179
Limber pine	339,523	103,154	83,105	525,783
Lodgepole pine	3,793,525	2,056,020	265,663	6,115,208
Ponderosa pine	331,587	242,057	632,036	1,205,680
Rocky Mountain juniper[a]	14,676	60,533	52,537	127,746
Subalpine fir	2,058,880	463,200	47,156	2,569,236
Utah juniper[a]	781	154,083	42,804	197,668
Whitebark pine	1,103,294	153,925	91,574	1,348,793
Softwood total	13,315,141	4,130,651	1,567,781	19,013,573
Aspen	353,628	116,978	108,906	579,512
Bigtooth maple[a]	465	--	--	465
Black cottonwood	--	--	3,474	3,474
Boxelder	--	747	941	1,688
Bur oak	1,467	5,820	14,969	22,256
Curlleaf mountain-mahogany[a]	1,460	2,104	--	3,564
Gambel oak[a]	405	--	--	405
Green ash	303	--	7,359	7,662
Narrowleaf cottonwood	845	995	48,613	50,453
Paper birch	2,166	--	--	2,166
Plains cottonwood	--	395	122,118	122,513
Rocky Mountain maple[a]	4,039	--	--	4,039
Hardwood total	364,778	127,039	306,378	798,196
All species	13,679,920	4,257,690	1,874,160	19,811,769

[a]Diameter taken at root collar rather than at breast height.

Table 19--Net volume of all live trees on forest land by species and diameter class, Wyoming, 2002

Species	Diameter class (inches) 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													
Blue spruce	769	1,520	4,410	5,058	4,616	16,183	1,745	4,269	1,998	--	9,355	12,114	25,255	87,292
Common or twoneedle pinyon[a]	36	--	--	157	--	--	--	--	--	--	--	--	--	192
Douglas-fir	76,013	157,751	245,534	261,283	269,129	242,670	242,796	160,701	122,528	83,425	93,868	64,550	113,550	2,133,797
Engelmann spruce	121,270	241,635	394,183	435,856	488,665	511,625	534,643	508,627	386,499	336,198	208,571	178,427	355,982	4,702,179
Limber pine	31,316	63,749	88,327	81,928	82,156	46,625	39,184	17,001	19,261	3,874	21,997	8,233	22,132	525,783
Lodgepole pine	628,138	1,216,698	1,366,512	1,105,449	760,443	462,148	284,002	135,290	81,122	39,534	13,033	9,840	13,001	6,115,208
Ponderosa pine	53,532	121,357	161,204	210,644	188,473	169,642	123,422	75,081	28,285	38,370	19,740	15,931	--	1,205,680
Rocky Mountain juniper[a]	13,455	18,242	18,196	15,259	17,039	15,044	9,078	6,831	4,867	4,072	2,029	679	2,953	127,746
Subalpine fir	265,911	400,655	420,000	415,119	346,802	272,608	204,538	96,464	66,326	38,234	21,231	11,848	9,499	2,569,236
Utah juniper[a]	3,331	7,122	11,221	15,307	15,902	11,632	16,191	18,695	15,939	12,686	10,107	7,621	51,913	197,668
Whitebark pine	61,784	141,247	178,042	191,321	190,200	151,602	114,325	78,579	54,497	32,789	48,827	33,708	71,873	1,348,793
Softwood total	1,255,554	2,369,975	2,887,629	2,737,382	2,363,426	1,899,777	1,569,924	1,101,537	781,322	589,181	448,758	342,950	666,158	19,013,573
Aspen	77,733	149,232	147,003	110,563	59,310	19,684	10,937	5,050	--	--	--	--	--	579,512
Bigtooth maple[a]	218	247	--	--	--	--	--	--	--	--	--	--	--	465
Black cottonwood	107	152	--	433	--	--	--	--	--	2,782	--	--	--	3,474
Boxelder	343	102	150	362	731	--	--	--	--	--	--	--	--	1,688
Bur oak	5,017	6,687	4,993	4,588	437	534	--	--	--	--	--	--	--	22,256
Curlleaf mountain-mahogany[a]	312	885	871	698	401	--	397	--	--	--	--	--	--	3,564
Gambel oak[a]	326	80	--	--	--	--	--	--	--	--	--	--	--	405
Green ash	244	1,395	2,265	2,453	606	698	--	--	--	--	--	--	--	7,662
Narrowleaf cottonwood	527	1,384	2,152	1,026	4,935	5,953	11,619	2,019	2,088	1,306	11,740	--	5,702	50,453
Paper birch	1,422	744	--	--	--	--	--	--	--	--	--	--	--	2,166
Plains cottonwood	400	1,599	1,928	1,928	2,162	1,502	1,012	1,725	11,302	4,663	7,242	13,957	73,093	122,513
Rocky Mountain maple[a]	137	44	--	--	--	--	--	--	1,188	--	--	--	2,670	4,039
Hardwood total	86,786	162,552	159,363	122,052	68,582	28,372	23,965	8,793	14,577	8,751	18,981	13,957	81,465	798,196
All species	1,342,340	2,532,527	3,046,992	2,859,434	2,432,008	1,928,149	1,593,889	1,110,331	795,899	597,931	467,740	356,906	747,623	19,811,769

[a]Diameter taken at root collar rather than at breast height.

Table 20--Net volume of all live trees on forest land by species and forest type, Wyoming, 2002

Species	Forest type												
	Aspen	Blue spruce	Bur oak	Cercocarpus woodland	Cottonwood	Deciduous woodland oak	Douglas-fir	Engelmann spruce	Green ash	Juniper	Limber pine	Lodgepole pine	Maple woodland
	Thousand cubic feet												
Blue spruce	352	79,996	--	--	--	--	374	94	--	--	--	1,056	--
Common or twoneedle pinyon[a]	--	--	--	--	--	--	--	--	--	--	--	--	--
Douglas-fir	23,769	906	--	708	--	--	1,640,233	93,475	--	389	29,948	69,802	7,560
Engelmann spruce	28,592	152	--	--	4,375	--	110,066	2,435,999	--	--	29,771	207,963	--
Limber pine	13,021	--	--	61	--	--	77,261	30,625	--	12,762	279,729	30,588	22
Lodgepole pine	115,981	1,608	--	--	--	--	132,807	324,551	--	--	21,217	4,794,041	--
Ponderosa pine	6,132	--	55,513	--	--	--	4,143	2,330	1,212	22,935	8,470	4,803	1,265
Rocky Mountain juniper[a]	234	--	--	217	94	--	10,128	82	--	85,703	3,529	439	21
Subalpine fir	72,954	4,734	--	--	--	--	66,195	172,179	--	--	21,356	214,134	6,776
Utah juniper[a]	--	--	--	--	80	--	999	--	--	186,714	--	--	--
Whitebark pine	2,517	--	--	--	--	--	5,190	161,013	--	--	--	59,872	--
Softwood total	263,552	87,396	55,513	986	4,549	--	2,047,396	3,220,347	1,212	308,503	394,020	5,382,699	15,643
Aspen	454,529	3,425	1,206	--	104	125	5,632	6,953	--	407	1,515	35,424	--
Bigtooth maple[a]	--	--	--	--	--	--	--	--	--	--	--	--	465
Black cottonwood	3,474	--	--	--	--	--	--	--	--	--	--	--	--
Boxelder	--	--	--	--	941	--	--	--	747	--	--	--	--
Bur oak	--	--	16,994	--	257	--	--	--	--	--	--	--	--
Curlleaf mountain-mahogany[a]	--	--	--	2,413	--	--	994	--	--	158	--	--	--
Gambel oak[a]	--	--	--	--	--	405	--	--	--	--	--	--	--
Green ash	--	--	3,234	--	1,163	--	--	--	2,701	--	--	--	--
Narrowleaf cottonwood	--	--	--	--	49,300	157	--	--	--	--	--	--	--
Paper birch	--	--	373	--	--	--	--	--	--	--	--	--	--
Plains cottonwood	--	--	--	--	122,472	--	--	--	--	--	--	--	--
Rocky Mountain maple[a]	--	--	--	--	--	--	94	--	--	--	--	--	3,901
Hardwood total	458,002	3,425	21,806	2,413	174,237	687	6,720	6,953	3,447	565	1,515	35,424	4,366
All species	721,554	90,820	77,319	3,398	178,786	687	2,054,116	3,227,300	4,660	309,068	395,535	5,418,124	20,010

Table 20 (Con.)

Species	Forest type							All types
	Paper birch	Pinyon-juniper	Ponderosa pine	Spruce-fir	Whitebark pine	Nonstocked timberland	Nonstocked woodland	
	Thousand cubic feet							
Blue spruce	--	--	--	5,421	--	--	--	87,292
Common or twoneedle pinyon[a]	--	172	--	--	--	--	21	192
Douglas-fir	--	--	12,382	233,903	8,157	12,399	165	2,133,797
Engelmann spruce	--	--	--	1,746,032	136,397	2,831	--	4,702,179
Limber pine	--	--	6,101	68,846	--	6,766	--	525,783
Lodgepole pine	--	--	1,963	647,233	72,300	3,507	--	6,115,208
Ponderosa pine	956	--	1,074,983	6,199	--	16,434	304	1,205,680
Rocky Mountain juniper[a]	--	--	21,836	--	--	1,889	3,575	127,746
Subalpine fir	--	--	--	1,915,093	91,332	4,484	--	2,569,236
Utah juniper[a]	--	6,302	--	--	--	--	3,573	197,668
Whitebark pine	--	--	--	206,878	909,188	4,135	--	1,348,793
Softwood total	956	6,473	1,117,266	4,829,606	1,217,374	52,444	7,638	19,013,573
Aspen	595	--	2,336	63,541	2,324	1,397	--	579,512
Bigtooth maple[a]	--	--	--	--	--	--	--	465
Black cottonwood	--	--	--	--	--	--	--	3,474
Boxelder	--	--	--	--	--	--	--	1,688
Bur oak	--	--	4,998	--	--	6	--	22,256
Curlleaf mountain-mahogany[a]	--	--	--	--	--	--	--	3,564
Gambel oak[a]	--	--	--	--	--	--	--	405
Green ash	--	--	564	--	--	--	--	7,662
Narrowleaf cottonwood	--	--	867	--	--	129	--	50,453
Paper birch	402	--	1,392	--	--	--	--	2,166
Plains cottonwood	--	--	--	--	--	41	--	122,513
Rocky Mountain maple[a]	--	--	--	43	--	--	--	4,039
Hardwood total	996	--	10,157	63,584	2,324	1,574	--	798,196
All species	1,953	6,473	1,127,423	4,893,190	1,219,698	54,017	7,638	19,811,769

[a]Diameter taken at root collar rather than at breast height.

Table 21--Net annual growth of all live trees on forest land by species and owner group, Wyoming, 2001

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand cubic feet			
Blue spruce	1,454	--	182	1,636
Common or twoneedle pinyon[a]	--	3	--	3
Douglas-fir	5,203	605	2,372	8,180
Engelmann spruce	31,823	5,388	1,534	38,745
Limber pine	3,244	1,465	936	5,645
Lodgepole pine	39,278	14,532	727	54,536
Ponderosa pine	3,514	3,786	12,822	20,121
Rocky Mountain juniper[a]	-9	676	279	946
Subalpine fir	6,964	5,163	1,479	13,606
Utah juniper[a]	4	742	269	1,015
Whitebark pine	2,634	-1,081	1,067	2,620
Softwood total	94,108	31,278	21,668	147,054
Aspen	3,790	2,162	1,396	7,348
Bigtooth maple[a]	10	--	--	10
Black cottonwood	--	--	45	45
Boxelder	--	136	21	157
Bur oak	73	167	527	767
Curlleaf mountain-mahogany[a]	([b])	52	--	52
Gambel oak[a]	32	--	--	32
Green ash	11	--	112	123
Narrowleaf cottonwood	35	38	220	293
Paper birch	262	--	--	262
Plains cottonwood	--	14	2,155	2,169
Rocky Mountain maple[a]	23	--	--	23
Hardwood total	4,234	2,570	4,477	11,281
All species	98,342	33,848	26,145	158,335

[a]Diameter taken at root collar rather than at breast height.
[b]Less than 500 cubic feet.

Table 22--Net annual growth of all live trees on forest land by species and diameter class, Wyoming, 2001

Species	Diameter class (inches) 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													
Blue spruce	52	72	223	197	180	401	53	15	71	--	84	179	110	1,636
Common or twoneedle pinyon[a]	1	--	--	2	--	--	--	--	--	--	--	--	--	3
Douglas-fir	3,716	3,051	3,509	3,326	59	346	72	-496	-1,929	([b])	-2,999	480	-955	8,180
Engelmann spruce	6,827	5,845	7,070	5,763	4,019	4,668	3,115	2,981	-538	-643	-1,184	828	-6	38,745
Limber pine	2,065	1,269	614	854	585	151	114	-360	116	16	94	20	107	5,645
Lodgepole pine	32,376	18,216	8,400	1,270	1,693	-2,064	-2,498	-1,165	-284	-750	75	55	-788	54,536
Ponderosa pine	3,857	3,807	3,815	4,779	2,748	2,181	1,175	1,071	-351	-378	-1,860	-723	--	20,121
Rocky Mountain juniper[a]	662	98	10	24	104	-15	-31	25	24	17	21	2	4	946
Subalpine fir	15,401	4,363	427	-926	-1,310	33	-1,330	-460	-1,679	-449	259	-748	24	13,606
Utah juniper[a]	151	58	88	108	94	70	33	83	61	54	45	23	148	1,015
Whitebark pine	3,117	2,055	1,672	482	-586	256	-1,102	-2,669	-1,224	158	180	128	154	2,620
Softwood total	68,225	38,833	25,828	15,878	7,588	6,027	-399	-974	-5,733	-1,975	-5,285	244	-1,202	147,054
Aspen	3,148	1,712	1,720	601	273	-256	118	33	--	--	--	--	--	7,348
Bigtooth maple[a]	6	5	--	--	--	--	--	--	--	--	--	--	--	10
Black cottonwood	5	7	--	10	--	--	--	--	--	23	--	--	--	45
Boxelder	134	8	4	2	10	--	--	--	--	--	--	--	--	157
Bur oak	317	183	140	110	4	12	--	--	--	--	--	--	--	767
Curlleaf mountain-mahogany[a]	25	10	8	5	3	--	1	--	--	--	--	--	--	52
Gambel oak[a]	30	1	--	--	--	--	--	--	--	--	--	--	--	32
Green ash	28	42	-16	38	13	17	--	--	--	--	--	--	--	123
Narrowleaf cottonwood	31	8	53	-110	63	44	74	8	8	3	99	--	11	293
Paper birch	243	20	--	--	--	--	--	--	--	--	--	--	--	262
Plains cottonwood	27	39	68	-30	31	26	10	25	285	67	136	287	1,198	2,169
Rocky Mountain maple[a]	2	1	--	--	--	--	--	--	15	--	--	--	4	23
Hardwood total	3,995	2,035	1,977	627	396	-157	203	66	308	93	234	287	1,213	11,281
All species	72,220	40,868	27,806	16,505	7,984	5,870	-196	-907	-5,424	-1,882	-5,050	531	11	158,335

[a]Diameter taken at root collar rather than at breast height.
[b]Less than 500 cubic feet.

Table 23--Annual mortality of all trees on forest land by species and owner group, Wyoming, 2001

Species	Owner group: National Forest	Owner group: Other public	Owner group: Nonindustrial private	Total
	Thousand cubic feet			
Blue spruce	21	--	--	21
Common or twoneedle pinyon[a]	--	--	--	--
Douglas-fir	18,305	3,176	455	21,935
Engelmann spruce	15,271	2,691	1,083	19,044
Limber pine	675	968	597	2,240
Lodgepole pine	26,018	18,736	4,682	49,436
Ponderosa pine	3,890	1,570	3,265	8,725
Rocky Mountain juniper[a]	165	67	606	838
Subalpine fir	42,481	8,726	490	51,697
Utah juniper[a]	--	104	--	104
Whitebark pine	8,841	2,863	--	11,704
Softwood total	115,667	38,900	11,177	165,744
Aspen	3,816	1,203	1,360	6,379
Bigtooth maple[a]	--	--	--	--
Black cottonwood	--	--	--	--
Boxelder	--	--	--	--
Bur oak	1	16	23	40
Curlleaf mountain-mahogany[a]	9	--	--	9
Gambel oak[a]	--	--	--	--
Green ash	--	--	65	65
Narrowleaf cottonwood	--	--	168	168
Paper birch	8	--	--	8
Plains cottonwood	--	--	95	95
Rocky Mountain maple[a]	--	--	--	--
Hardwood total	3,834	1,218	1,711	6,763
All species	119,501	40,119	12,888	172,508

[a]Diameter taken at root collar rather than at breast height.

Table 24--Annual mortality of all trees on forest land by species and diameter class, Wyoming, 2001

Species	Diameter class (inches) 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													
Blue spruce	21	--	--	--	--	--	--	--	--	--	--	--	--	21
Common or twoneedle pinyon[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Douglas-fir	321	586	567	803	3,475	2,566	2,887	1,998	2,983	654	3,480	--	1,615	21,935
Engelmann spruce	233	364	722	1,265	2,772	1,138	2,107	1,090	3,008	2,677	2,277	--	1,390	19,044
Limber pine	203	259	761	59	124	227	181	427	--	--	--	--	--	2,240
Lodgepole pine	3,044	6,196	10,943	10,000	4,909	5,664	4,451	1,817	666	921	--	--	823	49,436
Ponderosa pine	353	495	695	251	1,280	620	874	--	603	681	2,043	831	--	8,725
Rocky Mountain juniper[a]	125	156	186	135	39	111	87	--	--	--	--	--	--	838
Subalpine fir	4,339	7,712	9,540	8,766	7,200	4,504	4,144	1,560	2,281	742	--	911	--	51,697
Utah juniper[a]	6	20	13	--	--	--	64	--	--	--	--	--	--	104
Whitebark pine	223	538	620	1,373	1,859	732	1,831	3,057	1,472	--	--	--	--	11,704
Softwood total	8,869	16,328	24,048	22,652	21,658	15,561	16,626	9,948	11,012	5,674	7,800	1,741	3,828	165,744
Aspen	1,483	1,889	1,211	976	388	432	--	--	--	--	--	--	--	6,379
Bigtooth maple[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Boxelder	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bur oak	28	12	--	--	--	--	--	--	--	--	--	--	--	40
Curlleaf mountain-mahogany[a]	9	--	--	--	--	--	--	--	--	--	--	--	--	9
Gambel oak[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Green ash	([b])	--	65	--	--	--	--	--	--	--	--	--	--	65
Narrowleaf cottonwood	--	26	12	130	--	--	--	--	--	--	--	--	--	168
Paper birch	8	--	--	--	--	--	--	--	--	--	--	--	--	8
Plains cottonwood	--	33	--	62	--	--	--	--	--	--	--	--	--	95
Rocky Mountain maple[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwood total	1,527	1,960	1,287	1,169	388	432	--	--	--	--	--	--	--	6,763
All species	10,396	18,287	25,335	23,820	22,046	15,993	16,626	9,948	11,012	5,674	7,800	1,741	3,828	172,508

[a]Diameter taken at root collar rather than at breast height.
[b]Less than 500 cubic feet.

Table 25--Annual mortality of all trees on forest land by species and cause of death, Wyoming, 2001

Species	Cause of death							Total
	Insects	Disease	Fire	Animal	Weather	Suppression	Unknown	
	Thousand cubic feet							
Blue spruce	21	--	--	--	--	--	--	21
Common or twoneedle pinyon[a]	--	--	--	--	--	--	--	--
Douglas-fir	5,300	8,959	4,866	--	1,324	188	1,299	21,935
Engelmann spruce	10,546	3,393	1,286	--	3,086	64	669	19,044
Limber pine	249	574	468	8	563	--	378	2,240
Lodgepole pine	9,611	19,453	6,991	1,307	7,830	398	3,847	49,436
Ponderosa pine	3,250	153	1,149	41	1,495	--	2,638	8,725
Rocky Mountain juniper[a]	--	24	650	--	23	--	141	838
Subalpine fir	13,493	25,690	898	123	7,421	722	3,350	51,697
Utah juniper[a]	--	--	104	--	--	--	--	104
Whitebark pine	6,980	1,019	26	168	3,255	205	51	11,704
Softwood total	49,450	59,265	16,437	1,647	24,996	1,577	12,372	165,744
Aspen	273	4,894	--	41	294	88	790	6,379
Bigtooth maple[a]	--	--	--	--	--	--	--	--
Black cottonwood	--	--	--	--	--	--	--	--
Boxelder	--	--	--	--	--	--	--	--
Bur oak	--	12	--	--	--	--	28	40
Curlleaf mountain-mahogany[a]	--	9	--	--	--	--	--	9
Gambel oak[a]	--	--	--	--	--	--	--	--
Green ash	--	34	--	--	--	--	31	65
Narrowleaf cottonwood	--	61	--	81	--	--	26	168
Paper birch	--	8	--	--	--	--	--	8
Plains cottonwood	--	--	--	--	18	--	77	95
Rocky Mountain maple[a]	--	--	--	--	--	--	--	--
Hardwood total	273	5,017	--	122	311	88	952	6,763
All species	49,723	64,282	16,437	1,769	25,308	1,665	13,324	172,508

[a]Diameter taken at root collar rather than at breast height.

Table 26--Average percent understory vegetation crown canopy cover by lifeform, average percent bare ground, number of different species and most common understory species by forest type, Wyoming, 2002

Forest type	Average shrub cover	Average forb cover	Average graminoid cover	Average bare ground	Total number of different species recorded[a]	Most common understory species recorded[a]
	- -		*Percent*	- -		
Aspen	13.45	15.19	20.56	6.02	182	Mountain snowberry
Blue spruce	8.00	6.00	15.69	1.94	20	Sedge
Bur oak	7.12	8.98	43.21	3.57	53	Kentucky bluegrass
Cercocarpus woodland	11.67	4.78	3.67	6.11	11	Mountain snowberry
Cottonwood	8.87	9.71	37.15	18.42	63	Kentucky bluegrass
Deciduous oak woodland	26.60	9.98	9.17	18.86	11	Mountain snowberry
Douglas-fir	11.61	7.72	7.61	4.12	140	Common juniper
Engelmann spruce	10.86	8.11	8.06	3.09	134	Grouse whortleberry
Green ash	14.86	17.57	14.86	0.00	15	Sandreed
Juniper	9.25	2.31	10.45	21.00	91	Big sagebrush
Limber pine	14.15	5.70	12.20	8.99	87	Big sagebrush
Lodgepole pine	12.42	5.29	10.40	5.05	169	Grouse whortleberry
Maple woodland	11.25	11.48	6.80	12.29	38	Chokecherry
Paper birch	14.00	12.00	7.20	0.20	8	Saskatoon serviceberry
Pinyon-juniper	13.29	0.86	3.43	47.43	3	Alderleaf mountain-mahogany
Ponderosa pine	9.75	5.45	28.32	6.11	157	Common juniper
Spruce-fir	10.44	10.10	8.45	4.11	192	Grouse whortleberry
Whitebark pine	8.59	6.78	6.84	7.83	80	Grouse whortleberry

[a]To be recorded, species had to have 5 percent or greater cover on a subplot.

Table 27—Area, volume, growth, and mortality of live trees on forest land by county, Wyoming

County	Area (2002)	Volume (2002)	Growth (2001)	Mortality (2001)
	- - - - *Acres*- - - -	- - - - - - - - - - - - *Thousand cubic feet*	- - - - - - - - - - - -	
Albany	569,788	830,697	8,230	7,589
Big Horn	283,969	630,899	6,480	1,933
Campbell	231,374	102,232	1,561	212
Carbon	795,676	1,915,489	27,061	11,031
Converse	295,081	253,113	5,603	721
Crook	537,469	604,362	14,183	2,078
Fremont	1,042,305	1,868,144	15,358	10,607
Goshen	39,871	54,221	1,269	--
Hot Springs	212,034	288,803	-2,598	5,654
Johnson	350,121	607,124	10,448	797
Laramie	26,898	20,854	-224	569
Lincoln	796,419	1,650,086	13,863	20,215
Natrona	243,608	101,406	1,687	726
Niobrara	55,559	31,576	559	11
Park	2,043,702	3,816,975	-10,856	58,913
Platte	91,775	36,713	488	236
Sheridan	350,148	697,385	10,312	2,291
Sublette	829,099	1,990,285	12,718	17,560
Sweetwater	284,537	132,797	672	99
Teton	1,922,336	3,826,344	34,646	28,829
Uinta	114,839	140,670	809	1,905
Washakie	96,550	62,014	1,567	139
Weston	231,735	149,582	4,499	394
Total	11,444,895	19,811,769	158,335	172,508

Table 28--Area of nonreserved forest land by forest type, stand-size class, and productivity class, Wyoming, 2002

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	Acres				
Aspen					
Sawtimber	--	32,979	35,212	--	68,191
Poletimber	--	48,278	235,018	41,979	325,275
Sapling/seedling	--	32,049	141,453	58,486	231,988
Nonstocked	--	--	--	--	--
Total	--	113,306	411,683	100,465	625,454
Blue spruce					
Sawtimber	--	18,521	--	--	18,521
Poletimber	--	--	--	--	--
Sapling/seedling	--	4,652	--	--	4,652
Nonstocked	--	--	--	--	--
Total	--	23,172	--	--	23,172
Bur oak					
Sawtimber	--	--	18,032	--	18,032
Poletimber	--	6,533	37,788	--	44,321
Sapling/seedling	--	--	33,829	--	33,829
Nonstocked	--	--	--	--	--
Total	--	6,533	89,649	--	96,182
Cercocarpus woodland					
Sawtimber	--	--	--	10,661	10,661
Poletimber	--	--	--	--	--
Sapling/seedling	--	--	--	6,350	6,350
Nonstocked	--	--	--	--	--
Total	--	--	--	17,011	17,011
Cottonwood					
Sawtimber	3,370	9,734	32,888	13,926	59,919
Poletimber	--	--	7,373	2,963	10,336
Sapling/seedling	--	8,833	12,124	--	20,958
Nonstocked	--	--	--	--	--
Total	3,370	18,567	52,386	16,889	91,212
Deciduous woodland oak					
Sawtimber	--	--	--	--	--
Poletimber	--	--	--	4,147	4,147
Sapling/seedling	--	--	--	3,928	3,928
Nonstocked	--	--	--	--	--
Total	--	--	--	8,075	8,075
Douglas-fir					
Sawtimber	15,124	176,504	339,341	7,225	538,195
Poletimber	--	--	80,209	--	80,209
Sapling/seedling	--	--	54,288	--	54,288
Nonstocked	--	--	--	--	--
Total	15,124	176,504	473,839	7,225	672,693
Engelmann spruce					
Sawtimber	7,911	105,499	193,474	--	306,883
Poletimber	--	14,620	26,631	--	41,251
Sapling/seedling	--	--	36,936	--	36,936
Nonstocked	--	--	--	--	--
Total	7,911	120,119	257,040	--	385,070
Green ash					
Sawtimber	--	--	4,874	--	4,874
Poletimber	--	--	6,470	--	6,470
Sapling/seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	--	11,344	--	11,344
Juniper					
Sawtimber	--	--	--	767,915	767,915
Poletimber	--	--	--	26,308	26,308
Sapling/seedling	--	--	--	60,518	60,518
Nonstocked	--	--	--	--	--
Total	--	--	--	854,741	854,741

(con.)

Table 28 (Con.)

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	Acres				
Limber pine					
Sawtimber	--	--	107,234	68,457	175,691
Poletimber	--	--	53,974	21,352	75,326
Sapling/seedling	--	--	49,675	121,136	170,811
Nonstocked	--	--	--	--	--
Total	--	--	210,883	210,945	421,829
Lodgepole pine					
Sawtimber	--	69,957	449,572	16,542	536,070
Poletimber	--	6,051	478,374	11,467	495,893
Sapling/seedling	--	1,248	224,769	9,181	235,197
Nonstocked	--	--	--	--	--
Total	--	77,256	1,152,714	37,190	1,267,160
Maple woodland					
Sawtimber	--	--	--	8,350	8,350
Poletimber	--	--	--	--	--
Sapling/seedling	--	--	--	31,987	31,987
Nonstocked	--	--	--	--	--
Total	--	--	--	40,337	40,337
Paper birch					
Sawtimber	--	--	--	--	--
Poletimber	--	--	--	--	--
Sapling/seedling	--	--	6,670	--	6,670
Nonstocked	--	--	--	--	--
Total	--	--	6,670	--	6,670
Pinyon-juniper					
Sawtimber	--	--	--	10,927	10,927
Poletimber	--	--	--	--	--
Sapling/seedling	--	--	--	--	--
Nonstocked	--	--	--	--	--
Total	--	--	--	10,927	10,927
Ponderosa pine					
Sawtimber	--	41,950	783,854	13,100	838,903
Poletimber	--	--	138,605	--	138,605
Sapling/seedling	--	--	86,892	--	86,892
Nonstocked	--	--	--	--	--
Total	--	41,950	1,009,351	13,100	1,064,400
Spruce-fir					
Sawtimber	--	341,499	405,585	--	747,085
Poletimber	--	39,638	196,739	--	236,377
Sapling/seedling	--	33,085	78,165	7,136	118,386
Nonstocked	--	--	--	--	--
Total	--	414,223	680,489	7,136	1,101,847
Whitebark pine					
Sawtimber	--	1,570	146,799	5,991	154,360
Poletimber	--	--	10,228	--	10,228
Sapling/seedling	--	--	6,984	2,892	9,876
Nonstocked	--	--	--	--	--
Total	--	1,570	164,011	8,883	174,464
Nonstocked timberland					
Sawtimber	--	--	--	--	--
Poletimber	--	--	--	--	--
Sapling/seedling	--	--	--	--	--
Nonstocked	--	30,802	426,559	91,967	549,329
Total	--	30,802	426,559	91,967	549,329
Nonstocked woodland					
Sawtimber	--	--	--	--	--
Poletimber	--	--	--	--	--
Sapling/seedling	--	--	--	--	--
Nonstocked	--	--	--	238,860	238,860
Total	--	--	--	238,860	238,860
All types					
Sawtimber	26,405	798,212	2,516,866	923,094	4,264,578
Poletimber	--	115,121	1,271,408	108,217	1,494,746
Sapling/seedling	--	79,867	731,785	301,614	1,113,265
Nonstocked	--	30,802	426,559	330,828	788,189
Total	26,405	1,024,002	4,946,618	1,663,753	7,660,778

Table 29--Area of nonreserved forest land by stand volume and owner group, Wyoming, 2002

Stand volume per acre[a]	Owner group: National Forest	Owner group: Other public	Owner group: Nonindustrial private	Total
	Acres			
Less than 1,500 board feet	1,124,681	1,228,857	1,149,561	3,503,100
1,500 to 4,999 board feet	916,319	270,966	358,105	1,545,390
5,000 to 9,999 board feet	790,907	165,095	233,987	1,189,989
10,000 board feet or more	1,258,656	53,330	110,314	1,422,300
Total	4,090,563	1,718,247	1,851,968	7,660,778

[a]International ¼-inch rule.

Table 30--Area of nonreserved forest land by forest type and stocking condition, Wyoming, 2002

Forest type	Stocking condition						Total
	Overstocked timberland	Fully stocked timberland	Medium to fully stocked timberland	Poorly stocked timberland	Nonstocked timberland	Woodland	
	Acres						
Aspen	73,636	243,167	197,282	111,370	--	--	625,454
Blue spruce	2,883	4,635	9,889	5,766	--	--	23,172
Bur oak	11,712	21,662	47,251	15,557	--	--	96,182
Cercocarpus woodland	--	--	--	--	--	17,011	17,011
Cottonwood	8,202	33,338	31,232	18,440	--	--	91,212
Deciduous woodland oak	--	--	--	--	--	8,075	8,075
Douglas-fir	34,153	138,295	250,782	249,463	--	--	672,693
Engelmann spruce	8,149	179,177	120,800	76,944	--	--	385,070
Green ash	--	--	4,874	6,470	--	--	11,344
Juniper	--	--	--	--	--	854,741	854,741
Limber pine	15,209	65,022	61,122	280,476	--	--	421,829
Lodgepole pine	15,159	405,565	551,972	294,464	--	--	1,267,160
Maple woodland	--	--	--	--	--	40,337	40,337
Paper birch	--	5,336	1,334	--	--	--	6,670
Pinyon-juniper	--	--	--	--	--	10,927	10,927
Ponderosa pine	3,507	73,803	327,386	659,704	--	--	1,064,400
Spruce-fir	33,975	470,882	421,747	175,244	--	--	1,101,847
Whitebark pine	3,748	78,171	63,978	28,567	--	--	174,464
Nonstocked timberland	--	--	--	--	549,329	--	549,329
Nonstocked woodland	--	--	--	--	--	238,860	238,860
All types	210,333	1,719,053	2,089,649	1,922,464	549,329	1,169,952	7,660,778

Table 31--Area of nonreserved forest land by forest type and stand-age class, Wyoming, 2002

Forest type	Stand-age class									All classes
	Nonstocked/ Unclassified	1-50	51-100	101-150	151-200	201-250	251-300	301-350	351-400	
	Acres									
Aspen	--	241,736	319,120	57,046	7,552	--	--	--	--	625,454
Blue spruce	--	4,652	9,872	8,648	--	--	--	--	--	23,172
Bur oak	--	33,829	56,343	6,011	--	--	--	--	--	96,182
Cercocarpus woodland	--	14,923	2,088	--	--	--	--	--	--	17,011
Cottonwood	--	20,958	29,113	24,644	13,775	2,722	--	--	--	91,212
Deciduous woodland oak	--	3,928	4,147	--	--	--	--	--	--	8,075
Douglas-fir	--	65,334	237,558	162,420	92,822	78,721	24,957	9,007	1,875	672,693
Engelmann spruce	--	43,115	71,358	89,503	96,808	57,824	19,088	7,375	--	385,070
Green ash	--	--	6,470	4,874	--	--	--	--	--	11,344
Juniper	--	101,563	389,379	189,891	131,277	30,038	6,244	6,350	--	854,741
Limber pine	--	154,315	136,090	70,458	43,846	11,127	--	--	5,991	421,829
Lodgepole pine	--	243,077	489,534	380,493	109,613	36,905	402	7,136	--	1,267,160
Maple woodland	--	31,987	--	8,350	--	--	--	--	--	40,337
Paper birch	--	6,670	--	--	--	--	--	--	--	6,670
Pinyon-juniper	--	--	6,244	4,683	--	--	--	--	--	10,927
Ponderosa pine	--	98,238	549,546	350,735	35,566	24,668	--	5,646	--	1,064,400
Spruce-fir	--	135,905	296,573	381,078	189,254	61,803	21,743	8,355	7,136	1,101,847
Whitebark pine	--	9,173	31,903	25,520	56,301	17,179	34,388	--	--	174,464
Nonstocked timberland	549,329	--	--	--	--	--	--	--	--	549,329
Nonstocked woodland	238,860	--	--	--	--	--	--	--	--	238,860
All types	788,189	1,209,404	2,635,337	1,764,354	776,814	320,987	106,822	43,869	15,002	7,660,778

Table 32--Number of live trees on nonreserved forest land by species and diameter class, Wyoming, 2002

Species	Diameter class (inches) 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+	All classes
	Thousand trees															
Blue spruce	432	--	324	280	406	304	150	439	37	63	32	--	66	69	69	2,672
Common or twoneedle pinyon[a]	--	--	75	--	--	38	--	--	--	--	--	--	--	--	--	113
Douglas-fir	69,111	37,507	30,398	22,880	17,994	12,102	7,674	5,298	3,551	2,044	1,280	523	695	449	282	211,785
Engelmann spruce	96,416	48,248	33,096	23,539	18,165	11,417	9,368	5,799	4,498	3,441	2,205	1,501	834	690	765	259,981
Limber pine	42,375	33,971	20,904	14,108	8,631	4,578	3,068	1,181	873	204	124	98	146	97	174	130,531
Lodgepole pine	217,834	151,427	129,747	99,112	55,953	25,291	12,468	5,770	2,944	915	477	207	107	36	35	702,321
Ponderosa pine	80,928	68,399	36,235	28,785	19,690	15,341	9,155	5,623	2,779	1,461	447	493	187	147	--	269,670
Rocky Mountain juniper[a]	69,902	33,515	17,479	12,597	7,642	4,356	3,517	2,524	1,158	757	434	199	116	41	79	154,315
Subalpine fir	390,802	147,961	76,466	42,650	22,608	13,986	7,053	5,439	2,268	1,090	501	256	199	83	45	711,406
Utah juniper[a]	18,208	12,188	7,040	7,469	6,499	5,671	4,272	2,231	2,247	2,040	1,343	944	569	363	1,267	72,352
Whitebark pine	25,959	15,570	10,851	8,653	5,382	4,037	2,445	1,928	1,012	505	161	31	228	31	169	76,961
Softwood total	1,011,968	548,785	362,615	260,072	162,971	97,119	59,169	36,231	21,366	12,519	7,004	4,252	3,147	2,006	2,885	2,592,108
Aspen	159,939	55,935	42,131	28,750	14,611	6,979	2,501	744	271	114	--	--	--	--	--	311,975
Bigtooth maple[a]	10,545	3,756	104	69	--	--	--	--	--	--	--	--	--	--	--	14,474
Black cottonwood	--	465	75	37	--	37	--	--	--	--	--	37	--	--	--	652
Boxelder	--	--	343	36	78	78	73	--	--	--	--	--	--	--	--	608
Bur oak	19,636	11,874	6,574	2,555	976	459	32	39	--	--	--	--	--	--	--	42,146
Curlleaf mountain-mahogany[a]	4,618	4,572	1,059	798	481	199	102	--	45	--	--	--	--	--	--	11,873
Gambel oak[a]	9,816	785	252	32	--	--	--	--	--	--	--	--	--	--	--	10,885
Green ash	453	451	256	572	416	310	78	36	--	--	--	--	--	--	--	2,573
Narrowleaf cottonwood	--	--	309	295	188	75	284	233	312	39	39	33	156	--	39	2,002
Paper birch	4,800	400	803	193	--	--	--	--	--	--	--	--	--	--	--	6,195
Plains cottonwood	--	--	392	481	295	133	95	48	74	41	223	82	115	109	296	2,383
Rocky Mountain maple[a]	30,013	2,593	69	50	--	--	--	--	--	--	50	--	--	--	--	32,777
Hardwood total	239,819	80,831	52,366	33,867	17,045	8,271	3,165	1,101	702	194	312	152	271	109	335	438,541
All species	1,251,787	629,616	414,981	293,939	180,016	105,390	62,334	37,331	22,067	12,713	7,316	4,405	3,418	2,115	3,221	3,030,649

[a]Diameter taken at root collar rather than at breast height.

Table 33--Total oven-dry weight of biomass of all live trees on nonreserved forest land by species and diameter class, Wyoming, 2002

Species	Diameter class (inches) 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+	All classes
	Thousand tons															
Blue spruce	2	--	12	26	70	77	55	239	25	60	29	--	126	162	338	1,222
Common or twoneedle pinyon[a]	--	--	([b])	--	--	2	--	--	--	--	--	--	--	--	--	2
Douglas-fir	380	919	1,586	2,677	3,842	4,152	3,832	3,670	3,386	2,329	1,798	862	1,405	1,090	1,183	33,110
Engelmann spruce	578	1,037	1,367	2,214	3,188	3,075	3,749	3,291	3,390	3,312	2,635	2,129	1,385	1,280	2,167	34,797
Limber pine	212	730	849	1,072	1,254	1,127	1,140	531	528	151	126	78	220	136	362	8,516
Lodgepole pine	1,089	3,029	8,110	11,854	11,956	8,515	5,896	3,495	2,361	911	581	277	195	92	91	58,452
Ponderosa pine	405	1,368	1,618	2,410	3,015	3,934	3,574	3,245	2,342	1,484	564	784	392	330	--	25,462
Rocky Mountain juniper[a]	42	115	130	182	194	168	194	176	111	85	58	51	26	9	32	1,572
Subalpine fir	2,149	3,181	3,316	4,133	3,996	3,895	2,848	3,037	1,680	1,010	545	320	296	161	125	30,695
Utah juniper[a]	6	23	31	70	116	166	180	136	198	231	201	159	131	99	705	2,452
Whitebark pine	130	335	503	823	928	1,192	1,042	1,033	723	460	168	47	312	37	422	8,155
Softwood total	4,994	10,737	17,524	25,463	28,558	26,303	22,509	18,851	14,744	10,033	6,706	4,706	4,488	3,395	5,426	204,435
Aspen	320	531	1,309	2,455	2,510	1,965	1,049	376	184	96	--	--	--	--	--	10,794
Bigtooth maple[a]	19	37	5	6	--	--	--	--	--	--	--	--	--	--	--	68
Black cottonwood	--	4	2	2	--	7	--	--	--	--	--	39	--	--	--	55
Boxelder	--	--	6	2	8	13	16	--	--	--	--	--	--	--	--	45
Bur oak	39	113	98	119	90	79	9	12	--	--	--	--	--	--	--	559
Curlleaf mountain-mahogany[a]	11	36	24	44	47	33	25	--	25	--	--	--	--	--	--	246
Gambel oak[a]	30	5	11	3	--	--	--	--	--	--	--	--	--	--	--	49
Green ash	1	4	4	26	41	50	13	12	--	--	--	--	--	--	--	151
Narrowleaf cottonwood	--	--	7	19	30	17	92	110	188	31	31	24	169	--	78	794
Paper birch	10	4	28	15	--	--	--	--	--	--	--	--	--	--	--	56
Plains cottonwood	--	--	7	27	31	32	35	23	31	27	176	73	107	189	974	1,732
Rocky Mountain maple[a]	38	18	2	1	--	--	--	--	--	--	25	--	--	--	--	84
Hardwood total	468	753	1,502	2,720	2,757	2,195	1,238	533	427	154	231	136	276	189	1,052	14,632
All species	5,462	11,490	19,026	28,183	31,314	28,498	23,748	19,384	15,171	10,186	6,937	4,842	4,764	3,585	6,479	219,067

[a]Diameter taken at root collar rather than at breast height.
[b]Less than 500 tons.

Table 34--Net volume of all live trees on nonreserved forest land by forest type and stand-size class, Wyoming, 2002

Forest type	Stand-size class: Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	All classes
	Thousand cubic feet				
Aspen	172,065	484,807	42,822	--	699,694
Blue spruce	85,677	--	5,144	--	90,820
Bur oak	23,441	42,661	11,218	--	77,319
Cercocarpus woodland	3,238	--	161	--	3,398
Cottonwood	170,120	4,110	3,892	--	178,122
Deciduous woodland oak	--	530	157	--	687
Douglas-fir	1,347,135	93,731	14,821	--	1,455,687
Engelmann spruce	1,244,243	58,780	6,558	--	1,309,580
Green ash	2,701	1,959	--	--	4,660
Juniper	293,233	4,717	9,524	--	307,474
Limber pine	287,503	42,984	11,858	--	342,346
Lodgepole pine	1,725,299	1,102,559	77,120	--	2,904,978
Maple woodland	3,059	--	14,281	--	17,340
Paper birch	--	--	1,953	--	1,953
Pinyon-juniper	6,473	--	--	--	6,473
Ponderosa pine	1,000,246	108,443	18,734	--	1,127,423
Spruce-fir	2,562,855	447,651	58,669	--	3,069,176
Whitebark pine	446,115	14,556	1,811	--	462,483
Nonstocked timberland	--	--	--	39,196	39,196
Nonstocked woodland	--	--	--	7,638	7,638
All types	9,373,402	2,407,489	278,721	46,833	12,106,446

Table 35--Net volume of all live trees on nonreserved forest land by species and owner group, Wyoming, 2002

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand cubic feet			
Blue spruce	81,006	--	5,144	86,150
Common or twoneedle pinyon[a]	--	192	--	192
Douglas-fir	1,267,375	152,206	192,273	1,611,853
Engelmann spruce	2,083,304	51,493	111,918	2,246,714
Limber pine	258,927	72,259	83,105	414,291
Lodgepole pine	2,907,623	227,504	198,336	3,333,463
Ponderosa pine	331,587	242,057	632,036	1,205,680
Rocky Mountain juniper[a]	13,369	58,939	52,452	124,760
Subalpine fir	1,458,045	139,022	43,204	1,640,270
Utah juniper[a]	699	154,083	42,804	197,585
Whitebark pine	431,285	9,552	23,649	464,486
Softwood total	8,833,219	1,107,305	1,384,920	11,325,444
Aspen	344,595	113,395	107,752	565,742
Bigtooth maple[a]	465	--	--	465
Black cottonwood	--	--	3,474	3,474
Boxelder	--	747	941	1,688
Bur oak	1,467	5,820	14,969	22,256
Curlleaf mountain-mahogany[a]	1,460	2,104	--	3,564
Gambel oak[a]	405	--	--	405
Green ash	303	--	7,359	7,662
Narrowleaf cottonwood	157	995	48,613	49,764
Paper birch	2,166	--	--	2,166
Plains cottonwood	--	395	122,118	122,513
Rocky Mountain maple[a]	1,303	--	--	1,303
Hardwood total	352,321	123,456	305,225	781,002
All species	9,185,540	1,230,761	1,690,145	12,106,446

[a]Diameter taken at root collar rather than at breast height.

Table 36--Net volume of all live trees on nonreserved forest land by species and diameter class, Wyoming, 2002

Species	Diameter class (inches)													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													
Blue spruce	561	1,520	4,410	5,058	3,682	16,183	1,745	4,269	1,998	--	9,355	12,114	25,255	86,150
Common or twoneedle pinyon[a]	36	--	--	157	--	--	--	--	--	--	--	--	--	192
Douglas-fir	62,899	122,575	187,306	209,980	197,440	192,362	180,170	123,243	93,054	45,576	75,112	57,568	64,568	1,611,853
Engelmann spruce	65,394	129,061	202,929	202,372	255,291	228,820	238,092	237,463	186,494	153,301	97,911	91,405	158,181	2,246,714
Limber pine	26,971	56,966	72,360	64,642	67,215	31,442	31,750	9,287	8,030	1,441	13,823	8,233	22,132	414,291
Lodgepole pine	390,621	738,587	772,503	543,228	371,123	225,212	153,493	58,846	36,935	18,028	13,033	5,679	6,175	3,333,463
Ponderosa pine	53,532	121,357	161,204	210,644	188,473	169,642	123,422	75,081	28,285	38,370	19,740	15,931	--	1,205,680
Rocky Mountain juniper[a]	13,185	17,448	17,798	14,952	16,728	14,880	9,078	6,831	4,665	4,072	2,029	679	2,415	124,760
Subalpine fir	167,097	248,887	259,048	263,760	194,420	212,721	120,008	72,677	38,040	21,034	21,231	11,848	9,499	1,640,270
Utah juniper[a]	3,331	7,122	11,139	15,307	15,902	11,632	16,191	18,695	15,939	12,686	10,107	7,621	51,913	197,585
Whitebark pine	18,969	47,700	56,615	73,198	63,997	64,789	46,103	29,599	10,640	3,139	19,734	2,164	27,839	464,486
Softwood total	802,596	1,491,222	1,745,314	1,603,299	1,374,271	1,167,682	920,052	635,991	424,079	297,646	282,075	213,241	367,978	11,325,444
Aspen	74,778	143,172	144,430	109,436	58,255	19,684	10,937	5,050	--	--	--	--	--	565,742
Bigtooth maple[a]	218	247	--	--	--	--	--	--	--	--	--	--	--	465
Black cottonwood	107	152	--	433	--	--	--	--	--	2,782	--	--	--	3,474
Boxelder	343	102	150	362	731	--	--	--	--	--	--	--	--	1,688
Bur oak	5,017	6,687	4,993	4,588	437	534	--	--	--	--	--	--	--	22,256
Curlleaf mountain-mahogany[a]	312	885	871	698	401	--	397	--	--	--	--	--	--	3,564
Gambel oak[a]	326	80	--	--	--	--	--	--	--	--	--	--	--	405
Green ash	244	1,395	2,265	2,453	606	698	--	--	--	--	--	--	--	7,662
Narrowleaf cottonwood	311	1,165	1,899	1,026	4,935	5,953	11,619	2,019	2,088	1,306	11,740	--	5,702	49,764
Paper birch	1,422	744	--	--	--	--	--	--	--	--	--	--	--	2,166
Plains cottonwood	400	1,599	1,928	1,928	2,162	1,502	1,012	1,725	11,302	4,663	7,242	13,957	73,093	122,513
Rocky Mountain maple[a]	71	44	--	--	--	--	--	--	1,188	--	--	--	--	1,303
Hardwood total	83,549	156,272	156,537	120,925	67,527	28,372	23,965	8,793	14,577	8,751	18,981	13,957	78,795	781,002
All species	886,145	1,647,494	1,901,851	1,724,223	1,441,798	1,196,054	944,017	644,784	438,656	306,397	301,057	227,198	446,774	12,106,446

[a]Diameter taken at root collar rather than at breast height.

Table 37--Net volume of all live trees on nonreserved forest land by species and forest type, Wyoming, 2002

	Forest type												
Species	Aspen	Blue spruce	Bur oak	Cercocarpus woodland	Cottonwood	Deciduous woodland oak	Douglas-fir	Engelmann spruce	Green ash	Juniper	Limber pine	Lodgepole pine	Maple woodland
	Thousand cubic feet												
Blue spruce	352	79,996	--	--	--	--	259	--	--	--	--	122	--
Common or twoneedle pinyon[a]	--	--	--	--	--	--	--	--	--	--	--	--	--
Douglas-fir	21,461	906	--	708	--	--	1,189,824	83,046	--	389	29,029	50,929	7,560
Engelmann spruce	24,542	152	--	--	4,375	--	76,787	929,459	--	--	20,300	109,831	--
Limber pine	13,021	--	--	61	--	--	63,445	6,086	--	12,762	246,896	24,975	22
Lodgepole pine	109,922	1,608	--	--	--	--	69,037	157,639	--	--	19,262	2,530,608	--
Ponderosa pine	6,132	--	55,513	--	--	--	4,143	2,330	1,212	22,935	8,470	4,803	1,265
Rocky Mountain juniper[a]	234	--	--	217	94	--	8,821	82	--	84,109	3,529	354	21
Subalpine fir	72,954	4,734	--	--	--	--	35,591	80,666	--	--	13,344	131,170	6,776
Utah juniper[a]	--	--	--	--	80	--	916	--	--	186,714	--	--	--
Whitebark pine	2,517	--	--	--	--	--	209	43,645	--	--	--	18,869	--
Softwood total	251,135	87,396	55,513	986	4,549	--	1,449,033	1,302,952	1,212	306,909	340,830	2,871,661	15,643
Aspen	445,085	3,425	1,206	--	--	125	5,632	6,628	--	407	1,515	33,316	--
Bigtooth maple[a]	--	--	--	--	--	--	--	--	--	--	--	--	465
Black cottonwood	3,474	--	--	--	--	--	--	--	--	--	--	--	--
Boxelder	--	--	--	--	941	--	--	--	747	--	--	--	--
Bur oak	--	--	16,994	--	257	--	--	--	--	--	--	--	--
Curlleaf mountain-mahogany[a]	--	--	--	2,413	--	--	994	--	--	158	--	--	--
Gambel oak[a]	--	--	--	--	--	405	--	--	--	--	--	--	--
Green ash	--	--	3,234	--	1,163	--	--	--	2,701	--	--	--	--
Narrowleaf cottonwood	--	--	--	--	48,740	157	--	--	--	--	--	--	--
Paper birch	--	--	373	--	--	--	--	--	--	--	--	--	--
Plains cottonwood	--	--	--	--	122,472	--	--	--	--	--	--	--	--
Rocky Mountain maple[a]	--	--	--	--	--	--	28	--	--	--	--	--	1,232
Hardwood total	448,559	3,425	21,806	2,413	173,574	687	6,654	6,628	3,447	565	1,515	33,316	1,697
All species	699,694	90,820	77,319	3,398	178,122	687	1,455,687	1,309,580	4,660	307,474	342,346	2,904,978	17,340

(con.)

Table 37 (Con.)

Species	Forest type							All types
	Paper birch	Pinyon-juniper	Ponderosa pine	Spruce-fir	Whitebark pine	Nonstocked timberland	Nonstocked woodland	
	Thousand cubic feet							
Blue spruce	--	--	--	5,421	--	--	--	86,150
Common or twoneedle pinyon[a]	--	172	--	--	--	--	21	192
Douglas-fir	--	--	12,382	197,207	6,173	12,075	165	1,611,853
Engelmann spruce	--	--	--	1,022,855	58,167	246	--	2,246,714
Limber pine	--	--	6,101	35,122	--	5,800	--	414,291
Lodgepole pine	--	--	1,963	404,516	38,658	248	--	3,333,463
Ponderosa pine	956	--	1,074,983	6,199	--	16,434	304	1,205,680
Rocky Mountain juniper[a]	--	--	21,836	--	--	1,889	3,575	124,760
Subalpine fir	--	--	--	1,248,505	45,823	708	--	1,640,270
Utah juniper[a]	--	6,302	--	--	--	--	3,573	197,585
Whitebark pine	--	--	--	87,537	311,338	372	--	464,486
Softwood total	956	6,473	1,117,266	3,007,361	460,159	37,772	7,638	11,325,444
Aspen	595	--	2,336	61,772	2,324	1,376	--	565,742
Bigtooth maple[a]	--	--	--	--	--	--	--	465
Black cottonwood	--	--	--	--	--	--	--	3,474
Boxelder	--	--	--	--	--	--	--	1,688
Bur oak	--	--	4,998	--	--	6	--	22,256
Curlleaf mountain-mahogany[a]	--	--	--	--	--	--	--	3,564
Gambel oak[a]	--	--	--	--	--	--	--	405
Green ash	--	--	564	--	--	--	--	7,662
Narrowleaf cottonwood	--	--	867	--	--	--	--	49,764
Paper birch	402	--	1,392	--	--	--	--	2,166
Plains cottonwood	--	--	--	--	--	41	--	122,513
Rocky Mountain maple[a]	--	--	--	43	--	--	--	1,303
Hardwood total	996	--	10,157	61,814	2,324	1,424	--	781,002
All species	1,953	6,473	1,127,423	3,069,176	462,483	39,196	7,638	12,106,446

[a]Diameter taken at root collar rather than at breast height.

Table 38--Net annual growth of all live trees on nonreserved forest land by species and owner group, Wyoming, 2001

Species	Owner group			Total
	National Forest	Other public	Nonindustrial private	
	Thousand cubic feet			
Blue spruce	1,425	--	182	1,607
Common or twoneedle pinyon[a]	--	3	--	3
Douglas-fir	10,232	572	2,290	13,094
Engelmann spruce	25,181	1,401	1,141	27,723
Limber pine	2,354	1,192	936	4,481
Lodgepole pine	36,535	4,392	-63	40,864
Ponderosa pine	3,514	3,786	12,822	20,121
Rocky Mountain juniper[a]	136	642	277	1,055
Subalpine fir	5,099	1,315	1,460	7,874
Utah juniper[a]	3	742	269	1,015
Whitebark pine	3,572	323	222	4,117
Softwood total	88,051	14,367	19,536	121,954
Aspen	3,520	2,103	1,379	7,003
Bigtooth maple[a]	10	--	--	10
Black cottonwood	--	--	45	45
Boxelder	--	136	21	157
Bur oak	73	167	527	767
Curlleaf mountain-mahogany[a]	([b])	52	--	52
Gambel oak[a]	32	--	--	32
Green ash	11	--	112	123
Narrowleaf cottonwood	3	38	220	262
Paper birch	262	--	--	262
Plains cottonwood	--	14	2,155	2,169
Rocky Mountain maple[a]	18	--	--	18
Hardwood total	3,929	2,511	4,460	10,900
All species	91,979	16,878	23,996	132,853

[a]Diameter taken at root collar rather than at breast height.
[b]Less than 500 cubic feet.

Table 39--Net annual growth of all live trees on nonreserved forest land by species and diameter class, Wyoming, 2001

Species	Diameter class (inches) 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													
Blue spruce	41	72	223	197	162	401	53	15	71	--	84	179	110	1,607
Common or twoneedle pinyon[a]	1	--	--	2	--	--	--	--	--	--	--	--	--	3
Douglas-fir	3,328	2,430	2,769	3,030	329	439	1,893	984	-1,398	-255	-1,406	449	501	13,094
Engelmann spruce	4,112	3,690	4,229	2,811	3,252	2,742	2,170	2,096	580	1,104	-106	444	599	27,723
Limber pine	1,742	1,106	440	714	489	49	89	-386	40	10	63	20	107	4,481
Lodgepole pine	20,338	12,231	7,367	997	894	-5	-996	283	-453	99	75	15	20	40,864
Ponderosa pine	3,857	3,807	3,815	4,779	2,748	2,181	1,175	1,071	-351	-378	-1,860	-723	--	20,121
Rocky Mountain juniper[a]	634	104	31	23	103	11	57	25	24	17	21	2	3	1,055
Subalpine fir	10,333	3,371	473	1	-1,219	30	-1,549	-690	-1,882	-531	259	-748	24	7,874
Utah juniper[a]	151	58	88	108	94	70	33	83	61	54	45	23	148	1,015
Whitebark pine	1,063	747	745	359	34	456	356	189	40	10	56	10	53	4,117
Softwood total	45,601	27,615	20,180	13,021	6,885	6,376	3,280	3,668	-3,269	130	-2,769	-330	1,564	121,954
Aspen	3,014	1,572	1,680	577	266	-256	118	33	--	--	--	--	--	7,003
Bigtooth maple[a]	6	5	--	--	--	--	--	--	--	--	--	--	--	10
Black cottonwood	5	7	--	10	--	--	--	--	--	23	--	--	--	45
Boxelder	134	8	4	2	10	--	--	--	--	--	--	--	--	157
Bur oak	317	183	140	110	4	12	--	--	--	--	--	--	--	767
Curlleaf mountain-mahogany[a]	25	10	8	5	3	--	1	--	--	--	--	--	--	52
Gambel oak[a]	30	1	--	--	--	--	--	--	--	--	--	--	--	32
Green ash	28	42	-16	38	13	17	--	--	--	--	--	--	--	123
Narrowleaf cottonwood	16	3	43	-110	63	44	74	8	8	3	99	--	11	262
Paper birch	243	20	--	--	--	--	--	--	--	--	--	--	--	262
Plains cottonwood	27	39	68	-30	31	26	10	25	285	67	136	287	1,198	2,169
Rocky Mountain maple[a]	1	1	--	--	--	--	--	--	15	--	--	--	--	18
Hardwood total	3,845	1,890	1,927	603	389	-157	203	66	308	93	234	287	1,209	10,900
All species	49,446	29,505	22,107	13,625	7,274	6,219	3,483	3,735	-2,961	224	-2,534	-42	2,773	132,853

[a]Diameter taken at root collar rather than at breast height.

Table 40--Annual mortality of all trees on nonreserved forest land by species and owner group, Wyoming, 2001

Species	Owner group			Total
	National Forest	Other public	Nonindustrial private	
	Thousand cubic feet			
Blue spruce	21	--	--	21
Common or twoneedle pinyon[a]	--	--	--	--
Douglas-fir	9,088	2,186	455	11,729
Engelmann spruce	2,530	--	1,083	3,613
Limber pine	675	968	597	2,240
Lodgepole pine	16,101	943	4,648	21,692
Ponderosa pine	3,890	1,570	3,265	8,725
Rocky Mountain juniper[a]	14	67	606	687
Subalpine fir	31,643	4,051	417	36,112
Utah juniper[a]	--	104	--	104
Whitebark pine	1,077	--	--	1,077
Softwood total	65,041	9,889	11,071	86,000
Aspen	3,816	1,177	1,354	6,348
Bigtooth maple[a]	--	--	--	--
Black cottonwood	--	--	--	--
Boxelder	--	--	--	--
Bur oak	1	16	23	40
Curlleaf mountain-mahogany[a]	9	--	--	9
Gambel oak[a]	--	--	--	--
Green ash	--	--	65	65
Narrowleaf cottonwood	--	--	168	168
Paper birch	8	--	--	8
Plains cottonwood	--	--	95	96
Rocky Mountain maple[a]	--	--	--	--
Hardwood total	3,834	1,193	1,705	6,732
All species	68,875	11,082	12,775	92,732

[a]Diameter taken at root collar rather than at breast height.

Table 41--Annual mortality of all trees on nonreserved forest land by species and diameter class, Wyoming, 2001

Species	Diameter class (inches) 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													
Blue spruce	21	--	--	--	--	--	--	--	--	--	--	--	--	21
Common or twoneedle pinyon[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Douglas-fir	228	454	513	510	2,320	2,022	645	261	2,320	654	1,802	--	--	11,729
Engelmann spruce	77	59	206	708	446	253	410	--	772	--	682	--	--	3,613
Limber pine	203	259	761	59	124	227	181	427	--	--	--	--	--	2,240
Lodgepole pine	1,646	3,087	4,498	4,723	2,742	2,065	2,265	--	666	--	--	--	--	21,692
Ponderosa pine	353	495	695	251	1,280	620	874	--	603	681	2,043	831	--	8,725
Rocky Mountain juniper[a]	123	144	163	135	39	84	--	--	--	--	--	--	--	687
Subalpine fir	2,439	4,600	6,048	5,598	4,853	3,683	3,398	1,560	2,281	742	--	911	--	36,112
Utah juniper[a]	6	20	13	--	--	--	64	--	--	--	--	--	--	104
Whitebark pine	66	166	71	319	456	--	--	--	--	--	--	--	--	1,077
Softwood total	5,164	9,285	12,968	12,302	12,260	8,953	7,837	2,247	6,641	2,076	4,527	1,741	--	86,000
Aspen	1,477	1,864	1,211	976	388	432	--	--	--	--	--	--	--	6,348
Bigtooth maple[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Black cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Boxelder	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bur oak	28	12	--	--	--	--	--	--	--	--	--	--	--	40
Curlleaf mountain-mahogany[a]	9	--	--	--	--	--	--	--	--	--	--	--	--	9
Gambel oak[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Green ash	([b])	--	65	--	--	--	--	--	--	--	--	--	--	65
Narrowleaf cottonwood	--	26	12	130	--	--	--	--	--	--	--	--	--	168
Paper birch	8	--	--	--	--	--	--	--	--	--	--	--	--	8
Plains cottonwood	--	33	--	62	--	--	--	--	--	--	--	--	--	95
Rocky Mountain maple[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwood total	1,521	1,934	1,287	1,169	388	432	--	--	--	--	--	--	--	6,732
All species	6,685	11,219	14,255	13,471	12,648	9,385	7,837	2,247	6,641	2,076	4,527	1,741	--	92,732

[a]Diameter taken at root collar rather than at breast height.
[b]Less than 500 cubic feet.

Table 42--Annual mortality of all trees on nonreserved forest land by species and cause of death, Wyoming, 2001

Species	Cause of death							Total
	Insects	Disease	Fire	Animal	Weather	Suppression	Unknown	
	Thousand cubic feet							
Blue spruce	21	--	--	--	--	--	--	21
Common or twoneedle pinyon[a]	--	--	--	--	--	--	--	--
Douglas-fir	2,607	3,860	4,734	--	40	178	310	11,729
Engelmann spruce	1,549	782	208	--	1,074	--	--	3,613
Limber pine	249	574	468	8	563	--	378	2,240
Lodgepole pine	3,458	10,592	4,174	95	1,509	182	1,682	21,692
Ponderosa pine	3,250	153	1,149	41	1,495	--	2,638	8,725
Rocky Mountain juniper[a]	--	24	650	--	--	--	13	687
Subalpine fir	9,791	19,165	620	--	3,760	299	2,476	36,112
Utah juniper[a]	--	--	104	--	--	--	--	104
Whitebark pine	295	381	--	--	395	7	--	1,077
Softwood total	21,220	35,532	12,107	143	8,837	665	7,496	86,000
Aspen	273	4,894	--	41	268	88	784	6,348
Bigtooth maple[a]	--	--	--	--	--	--	--	--
Black cottonwood	--	--	--	--	--	--	--	--
Boxelder	--	--	--	--	--	--	--	--
Bur oak	--	12	--	--	--	--	28	40
Curlleaf mountain-mahogany[a]	--	9	--	--	--	--	--	9
Gambel oak[a]	--	--	--	--	--	--	--	--
Green ash	--	34	--	--	--	--	31	65
Narrowleaf cottonwood	--	61	--	81	--	--	26	168
Paper birch	--	8	--	--	--	--	--	8
Plains cottonwood	--	--	--	--	18	--	77	95
Rocky Mountain maple[a]	--	--	--	--	--	--	--	--
Hardwood total	273	5,017	--	122	286	88	946	6,732
All species	21,493	40,549	12,107	265	9,123	753	8,442	92,732

[a]Diameter taken at root collar rather than at breast height.

Table 43--Area, volume, growth, and mortality of nonreserved forest land by county, Wyoming,

County	Area (2002)	Volume (2002)	Growth (2001)	Mortality (2001
	Acres	*Thousand cubic feet*		
Albany	563,255	807,998	8,540	6,756
Big Horn	253,061	600,064	6,269	1,668
Campbell	231,374	102,232	1,561	212
Carbon	731,985	1,654,482	22,430	10,834
Converse	295,081	253,113	5,603	721
Crook	537,469	604,362	14,183	2,078
Fremont	717,250	1,110,458	10,570	6,990
Goshen	39,871	54,221	1,269	--
Hot Springs	199,286	232,026	-2,978	5,654
Johnson	306,420	529,568	9,809	596
Laramie	26,898	20,854	-224	569
Lincoln	796,419	1,650,086	13,863	20,215
Natrona	243,608	101,406	1,687	726
Niobrara	55,559	31,576	559	11
Park	487,105	587,256	1,509	6,097
Platte	91,775	36,713	488	236
Sheridan	341,566	669,894	10,499	1,792
Sublette	561,937	1,354,708	8,893	15,072
Sweetwater	284,537	132,797	672	99
Teton	453,195	1,220,367	10,776	9,970
Uinta	114,839	140,670	809	1,905
Washakie	96,550	62,014	1,567	139
Weston	231,735	149,582	4,499	394
Total	7,660,778	12,106,446	132,853	92,732

Table 44--Area of nonreserved timberland[a] by forest type, stand-size class, and productivity class, Wyoming, 2002

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 44 (Con.)

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 45--Area of National Forest nonreserved timberland by forest type, stand-size class, and productivity class, Wyoming, 2002

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 45 (Con.)

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 46--Area of other publicly owned nonreserved timberland by forest type, stand-size class, and productivity class, Wyoming, 2002

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 46 (Con.)

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 47--Area of nonindustrial private nonreserved timberland by forest type, stand-size class, and productivity class, Wyoming, 2002

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 47 (Con.)

Forest type and stand-size class	Productivity class (cubic feet/acre/year) 85-119	50-84	20-49	0-19	Total
	- - -

Table 48--Area of nonreserved timberland by stand volume and owner group, Wyoming, 2002

Stand volume per acre([a])	Owner group: National Forest	Other public	Nonindustrial private	Total
	Acres			
Less than 1,500 board feet	1,066,630	499,819	784,579	2,351,029
1,500 to 4,999 board feet	910,553	264,616	358,105	1,533,274
5,000 to 9,999 board feet	785,141	165,095	233,987	1,184,223
10,000 board feet or more	1,258,656	53,330	110,314	1,422,300
Total	4,020,981	982,859	1,486,986	6,490,826

[a]International ¼-inch rule.

Table 49--Number of growing-stock trees on nonreserved timberland by species and diameter class, Wyoming, 2002

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															
Blue spruce	432	--	324	242	406	304	150	439	37	63	32	--	66	69	69	2,635
Douglas-fir	62,009	32,873	29,453	21,961	17,515	11,980	7,638	5,198	3,500	1,894	1,280	478	695	449	282	197,204
Engelmann spruce	79,307	41,947	32,304	23,309	18,134	11,335	9,368	5,799	4,498	3,398	2,169	1,501	788	654	765	235,276
Limber pine	32,442	25,566	16,815	12,075	7,445	4,172	2,797	1,063	835	204	124	--	146	59	174	103,916
Lodgepole pine	179,370	133,224	128,194	98,241	55,331	25,188	12,215	5,770	2,911	915	477	207	107	36	35	642,220
Ponderosa pine	55,690	50,776	29,610	26,317	18,616	14,634	8,508	5,425	2,741	1,416	447	455	187	147	--	214,967
Subalpine fir	318,676	133,540	74,070	41,797	22,228	13,790	6,985	5,334	2,196	1,090	465	221	199	83	45	620,722
Whitebark pine	17,185	12,619	9,115	7,701	4,698	3,437	2,259	1,860	930	474	161	31	137	31	169	60,806
Softwood total	745,111	430,544	319,883	231,643	144,373	84,840	49,921	30,889	17,649	9,452	5,153	2,893	2,326	1,529	1,539	2,077,746
Aspen	137,765	44,981	36,607	26,702	13,732	6,645	2,383	607	221	114	--	--	--	--	--	269,757
Black cottonwood	--	--	37	37	--	37	--	--	--	--	--	37	--	--	--	149
Boxelder	--	--	270	36	--	--	--	--	--	--	--	--	--	--	--	306
Bur oak	9,415	4,796	3,451	1,772	793	419	32	39	--	--	--	--	--	--	--	20,718
Green ash	453	--	181	406	338	232	78	36	--	--	--	--	--	--	--	1,724
Narrowleaf cottonwood	--	--	109	263	156	75	245	156	312	39	39	33	156	--	39	1,623
Paper birch	4,800	--	642	128	--	--	--	--	--	--	--	--	--	--	--	5,571
Plains cottonwood	--	--	274	403	256	133	95	48	37	41	223	82	115	109	296	2,112
Hardwood total	152,433	49,778	41,571	29,748	15,274	7,543	2,834	887	570	194	262	152	271	109	335	301,960
All species	897,544	480,322	361,455	261,391	159,647	92,383	52,755	31,775	18,219	9,646	5,415	3,045	2,596	1,638	1,874	2,379,706

Table 50--Number of cull and dead trees on nonreserved timberland by owner group, and softwoods and hardwoods, Wyoming, 2002

Owner group	Species group	Cull trees: Rough	Cull trees: Rotten	Cull trees: Total	Hard dead trees	Total
		Thousand trees				
National Forest	Softwoods	17,691	870	18,561	220,758	239,320
	Hardwoods	4,488	1,872	6,630	28,557	34,917
	Total	22,179	2,742	24,921	249,316	274,236
Other public	Softwoods	3,165	153	3,318	31,602	34,920
	Hardwoods	2,093	542	2,635	8,978	11,613
	Total	5,258	695	5,953	40,580	46,533
Nonindustrial private	Softwoods	6,054	83	6,137	25,568	31,704
	Hardwoods	4,789	726	5,515	11,904	17,419
	Total	10,842	809	11,651	37,472	49,124
Total	Softwoods	26,910	1,106	28,016	277,928	305,944
	Hardwoods	11,370	3,140	14,510	49,439	63,949
	Total	38,280	4,246	42,525	327,368	369,893

Table 51--Net volume of growing stock on nonreserved timberland by forest type and stand-size class, Wyoming, 2002

Forest type	Stand-size class: Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	All classes
	Thousand cubic feet				
Aspen	167,001	470,043	41,546	--	678,591
Blue spruce	85,677	--	5,063	--	90,739
Bur oak	22,597	39,230	10,619	--	72,445
Cottonwood	166,988	3,655	3,847	--	174,490
Douglas-fir	1,325,470	92,482	14,337	--	1,432,289
Engelmann spruce	1,229,556	58,561	6,267	--	1,294,385
Green ash	2,655	1,447	--	--	4,103
Limber pine	279,200	39,004	9,515	--	327,719
Lodgepole pine	1,715,117	1,098,357	75,952	--	2,889,425
Paper birch	--	--	1,727	--	1,727
Ponderosa pine	964,814	105,955	17,385	--	1,088,155
Spruce-fir	2,528,611	443,861	58,268	--	3,030,740
Whitebark pine	417,491	13,589	1,811	--	432,891
Nonstocked timberland	--	--	--	35,869	35,869
All types	8,905,178	2,366,184	246,337	35,869	11,553,568

Table 52--Net volume of sawtimber (International ¼-inch rule) on nonreserved timberland by forest type and stand-size class, Wyoming, 2002

Forest type	Stand-size class				All classes
	Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	
	Thousand board feet				
Aspen	594,508	1,078,790	121,509	--	1,794,807
Blue spruce	472,212	--	24,748	--	496,959
Bur oak	84,928	127,973	40,716	--	253,617
Cottonwood	739,471	3,780	7,157	--	750,408
Douglas-fir	5,904,732	199,230	59,396	--	6,163,358
Engelmann spruce	5,812,561	149,040	23,203	--	5,984,804
Green ash	8,085	5,203	--	--	13,288
Limber pine	1,019,861	81,907	17,759	--	1,119,526
Lodgepole pine	6,397,244	1,725,925	116,812	--	8,239,981
Paper birch	--	--	4,149	--	4,149
Ponderosa pine	3,949,979	196,019	34,498	--	4,180,496
Spruce-fir	11,478,495	1,141,001	218,126	--	12,837,622
Whitebark pine	1,577,013	43,361	1,178	--	1,621,552
Nonstocked timberland	--	--	--	121,260	121,260
All types	38,039,087	4,752,228	669,252	121,260	43,581,828

Table 53--Net volume of sawtimber (Scribner rule) on nonreserved timberland by forest type and stand-size class, Wyoming, 2002

Forest type	Stand-size class				All classes
	Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	
	Thousand board feet				
Aspen	506,118	920,973	103,557	--	1,530,648
Blue spruce	426,620	--	20,403	--	447,023
Bur oak	71,692	107,688	33,205	--	212,585
Cottonwood	671,148	2,872	6,281	--	680,301
Douglas-fir	5,050,705	172,194	48,969	--	5,271,868
Engelmann spruce	5,011,191	126,607	19,845	--	5,157,643
Green ash	6,024	4,451	--	--	10,474
Limber pine	872,668	69,504	15,181	--	957,352
Lodgepole pine	5,447,473	1,479,019	99,474	--	7,025,966
Paper birch	--	--	3,482	--	3,482
Ponderosa pine	3,365,931	160,744	27,980	--	3,554,655
Spruce-fir	9,848,428	975,880	185,522	--	11,009,830
Whitebark pine	1,347,230	37,898	527	--	1,385,655
Nonstocked timberland	--	--	--	100,399	100,399
All types	32,625,227	4,057,830	564,426	100,399	37,347,882

Table 54--Net volume of growing stock on nonreserved timberland by species and owner group, Wyoming, 2002

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand cubic feet			
Blue spruce	81,006	--	5,063	86,068
Douglas-fir	1,245,479	150,339	191,915	1,587,732
Engelmann spruce	2,071,726	51,493	111,918	2,235,136
Limber pine	247,477	62,669	76,719	386,864
Lodgepole pine	2,887,081	226,726	196,857	3,310,664
Ponderosa pine	327,167	227,610	609,408	1,164,185
Subalpine fir	1,431,304	138,822	42,979	1,613,105
Whitebark pine	393,884	9,552	23,649	427,085
Softwood total	8,685,122	867,210	1,258,507	10,810,840
Aspen	330,269	109,418	103,608	543,295
Black cottonwood	--	--	3,444	3,444
Boxelder	--	235	162	397
Bur oak	1,261	4,796	11,840	17,896
Green ash	180	--	6,574	6,754
Narrowleaf cottonwood	--	799	46,767	47,566
Paper birch	1,697	--	--	1,697
Plains cottonwood	--	395	121,284	121,679
Hardwood total	333,407	115,642	293,678	742,728
All species	9,018,529	982,853	1,552,186	11,553,568

Table 55--Net volume of sawtimber (International ¼-inch rule) on nonreserved timberland by species and owner group, Wyoming, 2002

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand board feet			
Blue spruce	462,292	--	24,748	487,040
Douglas-fir	5,719,948	573,379	814,446	7,107,774
Engelmann spruce	10,280,104	246,247	518,196	11,044,548
Limber pine	877,636	145,673	236,675	1,259,984
Lodgepole pine	8,704,405	614,425	603,168	9,921,998
Ponderosa pine	1,455,469	834,410	2,228,916	4,518,795
Subalpine fir	5,322,565	468,791	162,446	5,953,801
Whitebark pine	1,468,844	11,814	73,838	1,554,496
Softwood total	34,291,263	2,894,740	4,662,433	41,848,435
Aspen	629,605	181,317	132,554	943,475
Black cottonwood	--	--	17,683	17,683
Boxelder	--	--	--	--
Bur oak	1,815	11,080	8,904	21,800
Green ash	--	--	13,923	13,923
Narrowleaf cottonwood	--	--	191,699	191,699
Paper birch	--	--	--	--
Plains cottonwood	--	1,240	543,572	544,812
Hardwood total	631,420	193,637	908,335	1,733,393
All species	34,922,683	3,088,377	5,570,768	43,581,828

Table 56--Net volume of sawtimber (Scribner rule) on nonreserved timberland by species and owner group, Wyoming, 2002

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand board feet			
Blue spruce	418,199	--	20,403	438,602
Douglas-fir	4,892,325	484,613	705,586	6,082,524
Engelmann spruce	8,900,637	218,174	440,494	9,559,305
Limber pine	753,521	123,381	205,394	1,082,296
Lodgepole pine	7,422,160	523,360	515,618	8,461,138
Ponderosa pine	1,243,921	710,740	1,885,283	3,839,945
Subalpine fir	4,495,175	401,119	138,255	5,034,549
Whitebark pine	1,261,065	10,169	63,712	1,334,947
Softwood total	29,387,003	2,471,557	3,974,745	35,833,306
Aspen	535,632	154,471	112,909	803,012
Black cottonwood	--	--	15,582	15,582
Boxelder	--	--	--	--
Bur oak	1,470	8,719	6,572	16,760
Green ash	--	--	10,514	10,514
Narrowleaf cottonwood	--	--	168,518	168,518
Paper birch	--	--	--	--
Plains cottonwood	--	903	499,286	500,189
Hardwood total	537,102	164,092	813,381	1,514,576
All species	29,924,106	2,635,649	4,788,127	37,347,882

Table 57--Net volume of growing stock on nonreserved timberland by species and diameter class, Wyoming, 2002

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													
Blue spruce	561	1,438	4,410	5,058	3,682	16,183	1,745	4,269	1,998	--	9,355	12,114	25,255	86,068
Douglas-fir	61,643	119,647	183,770	207,994	197,043	189,333	178,700	115,363	93,054	43,936	75,112	57,568	64,568	1,587,732
Engelmann spruce	64,900	128,156	202,548	202,132	255,291	228,820	238,092	236,656	185,443	153,301	95,902	85,714	158,181	2,235,136
Limber pine	23,352	51,470	66,370	61,662	63,690	29,508	31,215	9,287	8,030	--	13,823	6,325	22,132	386,864
Lodgepole pine	388,458	733,993	765,582	541,330	365,312	225,212	152,080	58,846	36,935	18,028	13,033	5,679	6,175	3,310,664
Ponderosa pine	48,407	114,701	155,721	204,115	179,408	166,538	121,371	74,066	28,285	35,904	19,740	15,931	--	1,164,185
Subalpine fir	164,272	245,144	255,296	260,988	193,740	209,658	115,824	72,677	34,916	18,012	21,231	11,848	9,499	1,613,105
Whitebark pine	16,260	43,745	50,882	64,832	59,769	62,772	43,131	27,849	10,640	3,139	14,062	2,164	27,839	427,085
Softwood total	767,853	1,438,294	1,684,580	1,548,113	1,317,933	1,128,023	882,160	599,013	399,301	272,320	262,258	197,343	313,650	10,810,840
Aspen	69,131	137,349	140,577	107,051	57,082	17,539	9,517	5,050	--	--	--	--	--	543,295
Black cottonwood	77	152	--	433	--	--	--	--	--	2,782	--	--	--	3,444
Boxelder	295	102	--	--	--	--	--	--	--	--	--	--	--	397
Bur oak	3,257	5,048	4,474	4,147	437	534	--	--	--	--	--	--	--	17,896
Green ash	221	1,083	2,061	2,086	606	698	--	--	--	--	--	--	--	6,754
Narrowleaf cottonwood	159	1,120	1,798	1,026	4,239	4,749	11,619	2,019	2,088	1,306	11,740	--	5,702	47,566
Paper birch	1,191	506	--	--	--	--	--	--	--	--	--	--	--	1,697
Plains cottonwood	336	1,378	1,790	1,928	2,162	1,502	601	1,725	11,302	4,663	7,242	13,957	73,093	121,679
Hardwood total	74,667	146,737	150,700	116,671	64,527	25,023	21,737	8,793	13,390	8,751	18,981	13,957	78,795	742,728
All species	842,520	1,585,031	1,835,279	1,664,783	1,382,460	1,153,046	903,896	607,807	412,691	281,070	281,239	211,299	392,446	11,553,568

Table 58--Net volume of sawtimber (International ¼-inch rule) on nonreserved timberland by species and diameter class, Wyoming, 2002

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											
Blue spruce	17,813	22,901	18,823	85,637	9,504	23,041	11,309	--	58,715	74,704	164,593	487,040
Douglas-fir	715,054	961,108	976,744	970,805	936,590	629,829	521,383	251,879	433,461	339,246	371,674	7,107,774
Engelmann spruce	827,646	959,931	1,303,724	1,231,251	1,302,612	1,349,361	1,080,595	913,325	584,838	492,878	998,387	11,044,548
Limber pine	195,335	226,578	267,396	129,990	147,028	48,309	39,877	--	61,042	34,595	109,833	1,259,984
Lodgepole pine	2,914,812	2,422,029	1,815,540	1,188,087	818,789	324,960	200,718	99,773	69,149	33,879	34,264	9,921,998
Ponderosa pine	428,631	784,798	820,413	847,637	665,558	410,883	158,199	194,739	112,921	95,015	--	4,518,795
Subalpine fir	1,041,470	1,237,618	980,612	1,103,891	628,781	400,229	194,204	106,600	127,175	74,459	58,764	5,953,801
Whitebark pine	161,787	255,879	260,380	283,570	194,078	136,840	42,891	15,660	70,474	5,611	127,328	1,554,496
Softwood total	6,302,546	6,870,842	6,443,630	5,840,868	4,702,940	3,323,453	2,249,177	1,581,975	1,517,774	1,150,387	1,864,842	41,848,435
Aspen	([a])	490,938	285,971	89,735	50,451	26,380	--	--	--	--	--	943,475
Black cottonwood	([a])	2,089	--	--	--	--	--	15,594	--	--	--	17,683
Boxelder	([a])	--	--	--	--	--	--	--	--	--	--	--
Bur oak	([a])	17,565	1,815	2,419	--	--	--	--	--	--	--	21,800
Green ash	([a])	9,010	2,645	2,268	--	--	--	--	--	--	--	13,923
Narrowleaf cottonwood	([a])	5,309	15,534	16,967	44,527	6,386	10,250	5,971	59,664	--	27,090	191,699
Paper birch	([a])	--	--	--	--	--	--	--	--	--	--	--
Plains cottonwood	([a])	8,980	8,565	7,104	1,788	8,428	49,962	18,424	31,771	69,935	339,856	544,812
Hardwood total	([a])	533,891	314,531	118,494	96,766	41,194	60,212	39,989	91,435	69,935	366,946	1,733,393
All species	6,302,546	7,404,733	6,758,161	5,959,361	4,799,706	3,364,647	2,309,389	1,621,964	1,609,209	1,220,322	2,231,788	43,581,828

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

Table 59--Net volume of sawtimber (Scribner rule) on nonreserved timberland by species and diameter class, Wyoming, 2002

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											
Blue spruce	15,978	19,523	15,591	69,610	7,679	19,454	9,605	--	54,201	69,714	157,247	438,602
Douglas-fir	636,222	815,307	806,651	791,255	768,034	530,159	453,910	225,280	393,090	311,944	350,673	6,082,524
Engelmann spruce	735,176	812,588	1,073,859	1,000,032	1,072,037	1,157,061	957,689	823,900	534,769	453,650	938,544	9,559,305
Limber pine	167,280	194,206	225,811	109,230	124,455	41,046	34,816	--	54,797	31,117	99,539	1,082,296
Lodgepole pine	2,507,040	2,050,192	1,525,000	999,200	703,762	284,226	178,019	88,888	62,523	30,966	31,322	8,461,138
Ponderosa pine	345,432	666,869	690,447	709,138	570,066	357,186	139,730	173,851	101,547	85,679	--	3,839,945
Subalpine fir	924,913	1,042,639	806,438	895,986	518,717	340,854	170,837	94,908	115,191	68,800	55,267	5,034,549
Whitebark pine	139,978	217,340	219,151	238,034	165,575	118,725	37,485	14,054	63,433	4,928	116,244	1,334,947
Softwood total	5,472,019	5,818,662	5,362,947	4,812,484	3,930,325	2,848,711	1,982,090	1,420,881	1,379,552	1,056,798	1,748,836	35,833,306
Aspen	([a])	421,022	241,399	75,393	42,771	22,427	--	--	--	--	--	803,012
Black cottonwood	([a])	1,627	--	--	--	--	--	13,955	--	--	--	15,582
Boxelder	([a])	--	--	--	--	--	--	--	--	--	--	--
Bur oak	([a])	13,291	1,470	1,999	--	--	--	--	--	--	--	16,760
Green ash	([a])	6,720	1,909	1,886	--	--	--	--	--	--	--	10,514
Narrowleaf cottonwood	([a])	4,241	12,911	14,520	38,637	5,610	9,006	5,223	53,335	--	25,036	168,518
Paper birch	([a])	--	--	--	--	--	--	--	--	--	--	--
Plains cottonwood	([a])	7,270	7,229	6,118	1,469	7,345	44,042	16,256	28,224	64,312	317,924	500,189
Hardwood total	([a])	454,170	264,918	99,915	82,877	35,382	53,048	35,434	81,559	64,312	342,959	1,514,576
All species	5,472,019	6,272,833	5,627,865	4,912,399	4,013,201	2,884,093	2,035,138	1,456,316	1,461,112	1,121,110	2,091,795	37,347,882

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

Table 60--Net volume of trees on nonreserved timberland by class of timber, and softwoods and hardwoods, Wyoming, 2002

Class of timber	Softwoods	Hardwoods	Total
	- - - - - - - - - - - *Thousand cubic feet* - - - - - - - - - - -		
Sawtimber trees			
Sawlog portion	7,714,566	293,261	8,007,827
Upper-stem portion	890,127	77,363	967,490
Total	8,604,693	370,624	8,975,317
Poletimber trees	2,206,147	372,103	2,578,250
All growing-stock trees	10,810,840	742,727	11,553,567
Rough cull trees	132,250	25,953	158,203
Rotten cull trees	6,869	5,895	12,765
Other live volume	37,835	1,065	38,900
Salvable dead trees	2,690,895	189,315	2,880,209
All timber	13,678,690	964,955	14,643,645

Table 61--Net volume of growing stock on nonreserved timberland by species and forest type, Wyoming, 2002

Species	Forest type														All types
	Aspen	Blue spruce	Bur oak	Cottonwood	Douglas-fir	Engelmann spruce	Green ash	Limber pine	Lodgepole pine	Paper birch	Ponderosa pine	Spruce-fir	Whitebark pine	Nonstocked timberland	
	Thousand cubic feet														
Blue spruce	352	79,915	--	--	259	--	--	--	122	--	--	5,421	--	--	86,068
Douglas-fir	21,461	906	--	--	1,180,521	78,732	--	28,927	50,847	--	12,001	196,590	5,672	12,075	1,587,732
Engelmann spruce	24,542	152	--	4,375	76,787	925,860	--	20,287	109,831	--	--	1,015,176	57,880	246	2,235,136
Limber pine	12,873	--	--	--	61,356	6,086	--	237,352	24,071	--	5,713	34,158	--	5,256	386,864
Lodgepole pine	106,840	1,608	--	--	68,690	156,447	--	19,030	2,518,315	--	1,963	399,856	37,666	248	3,310,664
Ponderosa pine	6,132	--	55,224	--	3,820	2,330	1,212	7,349	4,769	956	1,060,244	6,199	--	15,950	1,164,185
Subalpine fir	72,080	4,734	--	--	35,332	77,933	--	13,344	130,470	--	--	1,234,704	43,895	612	1,613,105
Whitebark pine	2,517	--	--	--	209	40,580	--	--	18,040	--	--	80,076	285,598	65	427,085
Softwood total	246,797	87,315	55,224	4,375	1,426,974	1,287,968	1,212	326,289	2,856,465	956	1,079,921	2,972,180	430,712	34,452	10,810,840
Aspen	428,350	3,425	961	--	5,316	6,416	--	1,431	32,960	376	1,946	58,560	2,179	1,376	543,295
Black cottonwood	3,444	--	--	--	--	--	--	--	--	--	--	--	--	--	3,444
Boxelder	--	--	--	162	--	--	235	--	--	--	--	--	--	--	397
Bur oak	--	--	13,749	257	--	--	--	--	--	--	3,890	--	--	--	17,896
Green ash	--	--	2,385	1,163	--	--	2,655	--	--	--	551	--	--	--	6,754
Narrowleaf cottonwood	--	--	--	46,894	--	--	--	--	--	--	672	--	--	--	47,566
Paper birch	--	--	126	--	--	--	--	--	--	394	1,177	--	--	--	1,697
Plains cottonwood	--	--	--	121,638	--	--	--	--	--	--	--	--	--	41	121,679
Hardwood total	431,793	3,425	17,221	170,115	5,316	6,416	2,890	1,431	32,960	770	8,234	58,560	2,179	1,417	742,728
All species	678,591	90,739	72,445	174,490	1,432,289	1,294,385	4,103	327,719	2,889,425	1,727	1,088,155	3,030,740	432,891	35,869	11,553,568

Table 62--Net volume of sawtimber (International ¼-inch rule) on nonreserved timberland by species and forest type, Wyoming, 2002

Species	Forest type														All types
	Aspen	Blue spruce	Bur oak	Cottonwood	Douglas-fir	Engelmann spruce	Green ash	Limber pine	Lodgepole pine	Paper birch	Ponderosa pine	Spruce-fir	Whitebark pine	Nonstocked timberland	
	Thousand board feet														
Blue spruce	1,182	459,661	--	--	--	--	--	--	--	--	--	26,197	--	--	487,040
Douglas-fir	103,722	3,274	--	--	5,235,349	360,057	--	107,244	188,674	--	51,405	973,095	26,263	58,691	7,107,774
Engelmann spruce	136,164	--	--	12,842	361,079	4,544,968	--	77,405	466,951	--	--	5,176,671	268,469	--	11,044,548
Limber pine	37,940	--	--	--	193,743	17,694	--	792,214	69,033	--	16,239	125,653	--	7,468	1,259,984
Lodgepole pine	441,469	4,721	--	--	225,457	601,871	--	69,605	6,975,357	--	5,565	1,441,510	156,443	--	9,921,998
Ponderosa pine	25,960	--	230,128	--	13,046	9,575	5,203	32,146	15,672	4,149	4,104,193	29,223	--	49,501	4,518,795
Subalpine fir	284,689	23,017	--	--	127,458	287,199	--	40,912	399,286	--	--	4,630,429	159,910	901	5,953,801
Whitebark pine	6,616	--	--	--	--	158,807	--	--	60,249	--	--	321,564	1,007,260	--	1,554,496
Softwood total	1,037,742	490,673	230,128	12,842	6,156,132	5,980,170	5,203	1,119,526	8,175,223	4,149	4,177,402	12,724,342	1,618,343	116,560	41,848,435
Aspen	739,382	6,286	--	--	7,227	4,633	--	--	64,758	--	--	113,280	3,208	4,700	943,475
Black cottonwood	17,683	--	--	--	--	--	--	--	--	--	--	--	--	--	17,683
Boxelder	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bur oak	--	--	17,652	1,054	--	--	--	--	--	--	3,094	--	--	--	21,800
Green ash	--	--	5,838	--	--	--	8,085	--	--	--	--	--	--	--	13,923
Narrowleaf cottonwood	--	--	--	191,699	--	--	--	--	--	--	--	--	--	--	191,699
Paper birch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Plains cottonwood	--	--	--	544,812	--	--	--	--	--	--	--	--	--	--	544,812
Hardwood total	757,065	6,286	23,490	737,566	7,227	4,633	8,085	--	64,758	--	3,094	113,280	3,208	4,700	1,733,393
All species	1,794,807	496,959	253,617	750,408	6,163,358	5,984,804	13,288	1,119,526	8,239,981	4,149	4,180,496	12,837,622	1,621,552	121,260	43,581,828

Table 63--Net volume of sawtimber (Scribner rule) on nonreserved timberland by species and forest type, Wyoming, 2002

Species	Forest type														All types
	Aspen	Blue spruce	Bur oak	Cottonwood	Douglas-fir	Engelmann spruce	Green ash	Limber pine	Lodgepole pine	Paper birch	Ponderosa pine	Spruce-fir	Whitebark pine	Nonstocked timberland	
	Thousand board feet														
Blue spruce	1,160	415,732	--	--	--	--	--	--	--	--	--	21,710	--	--	438,602
Douglas-fir	87,310	2,757	--	--	4,479,070	309,920	--	90,746	159,346	--	44,037	837,814	22,307	49,216	6,082,524
Engelmann spruce	123,098	--	--	10,908	309,535	3,925,446	--	65,469	399,027	--	--	4,498,169	227,653	--	9,559,305
Limber pine	32,331	--	--	--	167,116	15,093	--	679,972	61,248	--	13,966	106,864	--	5,707	1,082,296
Lodgepole pine	374,205	4,028	--	--	191,471	511,358	--	59,460	5,953,303	--	4,779	1,229,638	132,895	--	8,461,138
Ponderosa pine	21,785	--	194,458	--	11,237	7,947	4,451	27,427	13,383	3,482	3,489,434	25,773	--	40,569	3,839,945
Subalpine fir	240,282	19,123	--	--	107,334	249,635	--	34,278	333,379	--	--	3,915,393	134,237	888	5,034,549
Whitebark pine	5,604	--	--	--	--	134,376	--	--	51,498	--	--	277,695	865,774	--	1,334,947
Softwood total	885,774	441,640	194,458	10,908	5,265,763	5,153,775	4,451	957,352	6,971,184	3,482	3,552,217	10,913,056	1,382,866	96,380	35,833,306
Aspen	629,292	5,383	--	--	6,105	3,869	--	--	54,782	--	--	96,774	2,789	4,019	803,012
Black cottonwood	15,582	--	--	--	--	--	--	--	--	--	--	--	--	--	15,582
Boxelder	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bur oak	--	--	13,636	685	--	--	--	--	--	--	2,438	--	--	--	16,760
Green ash	--	--	4,491	--	--	--	6,024	--	--	--	--	--	--	--	10,514
Narrowleaf cottonwood	--	--	--	168,518	--	--	--	--	--	--	--	--	--	--	168,518
Paper birch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Plains cottonwood	--	--	--	500,189	--	--	--	--	--	--	--	--	--	--	500,189
Hardwood total	644,874	5,383	18,127	669,392	6,105	3,869	6,024	--	54,782	--	2,438	96,774	2,789	4,019	1,514,576
All species	1,530,648	447,023	212,585	680,301	5,271,868	5,157,643	10,474	957,352	7,025,966	3,482	3,554,655	11,009,830	1,385,655	100,399	37,347,882

Table 64--Net annual growth of growing stock on nonreserved timberland by species and owner group, Wyoming, 2001

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand cubic feet			
Blue spruce	1,425	--	181	1,606
Douglas-fir	9,812	515	2,538	12,865
Engelmann spruce	25,047	1,401	1,141	27,589
Limber pine	2,191	1,086	848	4,125
Lodgepole pine	37,176	4,371	-86	41,461
Ponderosa pine	3,335	3,537	12,558	19,430
Subalpine fir	4,850	1,408	1,452	7,711
Whitebark pine	3,153	323	222	3,697
Softwood total	86,989	12,642	18,853	118,484
Aspen	3,259	2,100	1,285	6,645
Black cottonwood	--	--	43	43
Boxelder	--	130	9	139
Bur oak	40	122	411	573
Green ash	7	--	115	121
Narrowleaf cottonwood	--	37	261	298
Paper birch	215	--	--	215
Plains cottonwood	--	14	2,159	2,173
Hardwood total	3,521	2,404	4,283	10,208
All species	90,511	15,045	23,136	128,692

Table 65--Net annual growth of sawtimber (International ¼-inch rule) on nonreserved timberland by species and owner group, Wyoming, 2001

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand board feet			
Blue spruce	8,698	--	963	9,661
Douglas-fir	56,129	2,315	13,202	71,646
Engelmann spruce	143,894	7,352	7,318	158,564
Limber pine	10,326	8,715	4,856	23,897
Lodgepole pine	215,475	28,886	4,157	248,517
Ponderosa pine	20,607	25,781	114,115	160,503
Subalpine fir	34,069	7,632	6,565	48,267
Whitebark pine	15,810	337	1,310	17,457
Softwood total	505,008	81,019	152,485	738,512
Aspen	17,681	11,202	8,809	37,693
Black cottonwood	--	--	191	191
Boxelder	--	--	--	--
Bur oak	19	277	1,251	1,546
Green ash	--	--	1,409	1,409
Narrowleaf cottonwood	--	--	1,074	1,074
Paper birch	--	--	--	--
Plains cottonwood	--	40	9,882	9,922
Hardwood total	17,700	11,519	22,616	51,836
All species	522,708	92,538	175,101	790,348

Table 66--Net annual growth of sawtimber (Scribner rule) on nonreserved timberland by species and owner group, Wyoming, 2001

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand board feet			
Blue spruce	7,478	--	759	8,237
Douglas-fir	46,069	1,246	11,393	58,708
Engelmann spruce	122,559	6,436	6,517	135,511
Limber pine	8,088	5,020	2,299	15,406
Lodgepole pine	185,431	24,848	3,930	214,210
Ponderosa pine	15,602	18,347	73,344	107,294
Subalpine fir	28,514	6,346	5,557	40,417
Whitebark pine	12,894	280	1,134	14,309
Softwood total	426,636	62,522	104,933	594,091
Aspen	15,206	9,626	7,577	32,409
Black cottonwood	--	--	179	179
Boxelder	--	--	--	--
Bur oak	17	250	863	1,130
Green ash	--	--	1,023	1,023
Narrowleaf cottonwood	--	--	1,043	1,043
Paper birch	--	--	--	--
Plains cottonwood	--	36	9,376	9,412
Hardwood total	15,223	9,912	20,062	45,197
All species	441,859	72,435	124,995	639,288

Table 67--Net annual growth of growing stock on nonreserved timberland by species and diameter class, Wyoming, 2001

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													
Blue spruce	41	70	223	197	162	401	53	15	71	--	84	179	110	1,606
Douglas-fir	3,220	2,432	2,665	3,018	481	420	1,860	886	-1,398	-263	-1,406	449	501	12,865
Engelmann spruce	4,053	3,671	4,212	2,810	3,252	2,742	2,170	2,088	573	1,104	-110	426	599	27,589
Limber pine	1,523	1,056	460	678	450	29	87	-386	40	--	63	16	107	4,125
Lodgepole pine	20,178	12,360	7,652	1,197	1,041	-5	-1,000	283	-453	99	75	15	20	41,461
Ponderosa pine	3,322	3,537	3,692	4,732	2,581	2,145	1,166	1,062	-351	-390	-1,344	-723	--	19,430
Subalpine fir	9,987	3,354	617	69	-1,132	48	-1,627	-621	-1,908	-612	259	-748	24	7,711
Whitebark pine	906	718	659	293	10	447	324	182	40	10	46	10	53	3,697
Softwood total	43,232	27,198	20,181	12,995	6,845	6,226	3,034	3,509	-3,387	-52	-2,332	-377	1,413	118,484
Aspen	2,762	1,444	1,623	716	246	-270	91	33	--	--	--	--	--	6,645
Black cottonwood	3	7	--	10	--	--	--	--	--	23	--	--	--	43
Boxelder	132	8	--	--	--	--	--	--	--	--	--	--	--	139
Bur oak	191	136	135	95	4	12	--	--	--	--	--	--	--	573
Green ash	28	34	-2	32	13	17	--	--	--	--	--	--	--	121
Narrowleaf cottonwood	3	2	53	-61	59	38	74	8	8	3	99	--	11	298
Paper birch	198	17	--	--	--	--	--	--	--	--	--	--	--	215
Plains cottonwood	23	52	66	-30	31	26	6	25	285	67	136	287	1,198	2,173
Hardwood total	3,341	1,700	1,874	763	352	-177	171	66	293	93	234	287	1,209	10,208
All species	46,572	28,898	22,055	13,758	7,198	6,050	3,205	3,575	-3,094	41	-2,098	-90	2,622	128,692

Table 68--Net annual growth of sawtimber (International ¼-inch rule) on nonreserved timberland by species and diameter class, Wyoming, 2001

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											
Blue spruce	1,948	1,126	965	2,340	310	87	378	--	570	1,200	737	9,661
Douglas-fir	43,217	17,898	3,675	2,622	10,891	5,488	-7,867	-1,512	-8,614	2,830	3,017	71,646
Engelmann spruce	61,058	17,334	19,481	16,318	13,159	13,430	4,057	7,318	-351	2,773	3,985	158,564
Limber pine	17,984	3,625	2,704	281	423	-2,207	208	--	259	91	531	23,897
Lodgepole pine	229,456	13,854	9,261	1,170	-5,401	1,660	-2,680	579	415	88	113	248,517
Ponderosa pine	99,825	30,460	16,809	13,970	8,417	6,782	-1,801	-2,195	-7,667	-4,097	--	160,503
Subalpine fir	75,427	5,152	-4,231	1,346	-8,659	-3,331	-11,063	-3,723	1,725	-4,534	157	48,267
Whitebark pine	9,941	1,649	137	2,447	1,602	970	162	52	224	27	245	17,457
Softwood total	538,855	91,098	48,802	40,494	20,743	22,879	-18,605	520	-13,439	-1,621	8,785	738,512
Aspen	([a])	36,740	1,638	-1,410	541	184	--	--	--	--	--	37,693
Black cottonwood	([a])	54	--	--	--	--	--	137	--	--	--	191
Boxelder	([a])	--	--	--	--	--	--	--	--	--	--	--
Bur oak	([a])	1,472	19	56	--	--	--	--	--	--	--	1,546
Green ash	([a])	1,288	64	57	--	--	--	--	--	--	--	1,409
Narrowleaf cottonwood	([a])	-312	248	163	318	27	40	14	520	--	56	1,074
Paper birch	([a])	--	--	--	--	--	--	--	--	--	--	--
Plains cottonwood	([a])	-154	126	128	20	125	1,365	254	654	1,590	5,814	9,922
Hardwood total	([a])	39,088	2,095	-1,006	878	336	1,405	405	1,175	1,590	5,870	51,836
All species	538,855	130,186	50,897	39,488	21,621	23,215	-17,200	925	-12,264	-31	14,655	790,348

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

Table 69--Net annual growth of sawtimber (Scribner rule) on nonreserved timberland by species and diameter class, Wyoming, 2001

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											
Blue spruce	1,613	888	761	1,846	245	77	368	--	555	1,168	717	8,237
Douglas-fir	36,242	13,982	2,527	1,922	8,833	5,037	-6,579	-1,224	-7,724	2,755	2,937	58,708
Engelmann spruce	52,482	13,414	15,262	12,843	11,136	12,538	4,211	7,123	-75	2,699	3,879	135,511
Limber pine	10,424	2,999	2,249	239	387	-1,911	195	--	242	85	497	15,406
Lodgepole pine	197,178	11,169	7,911	1,809	-4,183	1,555	-2,348	542	389	83	106	214,210
Ponderosa pine	56,502	24,156	13,554	12,122	8,304	6,405	-1,510	-1,874	-6,759	-3,605	--	107,294
Subalpine fir	66,195	2,639	-4,153	625	-7,068	-2,690	-9,541	-3,345	1,679	-4,078	153	40,417
Whitebark pine	7,647	1,348	145	2,148	1,446	909	152	49	210	25	229	14,309
Softwood total	428,282	70,594	38,256	33,554	19,100	21,921	-15,053	1,270	-11,483	-868	8,518	594,091
Aspen	([a])	31,501	1,444	-1,161	466	159	--	--	--	--	--	32,409
Black cottonwood	([a])	49	--	--	--	--	--	130	--	--	--	179
Boxelder	([a])	--	--	--	--	--	--	--	--	--	--	--
Bur oak	([a])	1,063	17	51	--	--	--	--	--	--	--	1,130
Green ash	([a])	914	58	51	--	--	--	--	--	--	--	1,023
Narrowleaf cottonwood	([a])	-226	224	147	287	24	36	12	485	--	53	1,043
Paper birch	([a])	--	--	--	--	--	--	--	--	--	--	--
Plains cottonwood	([a])	-77	114	116	18	113	1,265	230	600	1,511	5,523	9,412
Hardwood total	([a])	33,224	1,857	-796	771	296	1,301	373	1,085	1,511	5,576	45,197
All species	428,282	103,818	40,112	32,758	19,871	22,217	-13,752	1,643	-10,398	643	14,094	639,288

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

Table 70--Annual mortality of growing stock on nonreserved timberland by species and owner group, Wyoming, 2001

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand cubic feet			
Blue spruce	21	--	--	21
Douglas-fir	9,086	2,186	201	11,473
Engelmann spruce	2,530	--	1,083	3,613
Limber pine	637	825	500	1,961
Lodgepole pine	14,889	943	4,648	20,480
Ponderosa pine	3,818	1,570	2,738	8,126
Subalpine fir	31,027	3,943	417	35,388
Whitebark pine	1,039	--	--	1,039
Softwood total	63,048	9,466	9,587	82,102
Aspen	3,646	1,065	1,340	6,051
Black cottonwood	--	--	--	--
Boxelder	--	--	--	--
Bur oak	1	15	19	35
Green ash	--	--	49	49
Narrowleaf cottonwood	--	--	107	107
Paper birch	7	--	--	7
Plains cottonwood	--	--	77	77
Hardwood total	3,654	1,079	1,592	6,326
All species	66,702	10,546	11,179	88,427

Table 71--Annual mortality of sawtimber (International ¼-inch rule) on nonreserved timberland by species and owner group, Wyoming, 2001

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand board feet			
Blue spruce	--	--	--	--
Douglas-fir	48,567	12,199	277	61,042
Engelmann spruce	13,634	--	5,560	19,194
Limber pine	2,927	2,435	1,671	7,033
Lodgepole pine	54,155	1,839	22,096	78,091
Ponderosa pine	20,928	7,281	10,013	38,222
Subalpine fir	132,221	15,396	1,577	149,194
Whitebark pine	4,271	--	--	4,271
Softwood total	276,703	39,150	41,193	357,046
Aspen	6,399	1,369	607	8,375
Black cottonwood	--	--	--	--
Boxelder	--	--	--	--
Bur oak	--	--	--	--
Green ash	--	--	--	--
Narrowleaf cottonwood	--	--	424	424
Paper birch	--	--	--	--
Plains cottonwood	--	--	310	310
Hardwood total	6,399	1,369	1,340	9,109
All species	283,102	40,519	42,533	366,155

Table 72--Annual mortality of sawtimber (Scribner rule) on nonreserved timberland by species and owner group, Wyoming, 2001

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand board feet			
Blue spruce	--	--	--	--
Douglas-fir	41,504	10,725	246	52,475
Engelmann spruce	12,088	--	4,607	16,694
Limber pine	2,557	2,095	1,458	6,111
Lodgepole pine	46,198	1,566	18,723	66,487
Ponderosa pine	18,340	6,320	8,481	33,141
Subalpine fir	112,201	13,149	1,306	126,657
Whitebark pine	3,560	--	--	3,560
Softwood total	236,449	33,855	34,821	305,126
Aspen	5,420	1,164	523	7,107
Black cottonwood	--	--	--	--
Boxelder	--	--	--	--
Bur oak	--	--	--	--
Green ash	--	--	--	--
Narrowleaf cottonwood	--	--	327	327
Paper birch	--	--	--	--
Plains cottonwood	--	--	218	218
Hardwood total	5,420	1,164	1,067	7,652
All species	241,869	35,019	35,889	312,777

Table 73--Annual mortality of growing stock on nonreserved timberland by species and diameter class, Wyoming, 2001

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													
Blue spruce	21	--	--	--	--	--	--	--	--	--	--	--	--	21
Douglas-fir	214	369	513	510	2,163	2,022	645	261	2,320	654	1,802	--	--	11,473
Engelmann spruce	77	59	206	708	446	253	410	--	772	--	682	--	--	3,613
Limber pine	156	143	646	59	124	227	181	427	--	--	--	--	--	1,961
Lodgepole pine	1,504	2,880	4,078	4,480	2,542	2,065	2,265	--	666	--	--	--	--	20,480
Ponderosa pine	352	491	690	179	1,280	620	874	--	603	681	1,527	831	--	8,126
Subalpine fir	2,417	4,494	5,829	5,479	4,760	3,587	3,398	1,491	2,281	742	--	911	--	35,388
Whitebark pine	66	128	71	319	456	--	--	--	--	--	--	--	--	1,039
Softwood total	4,808	8,563	12,033	11,733	11,771	8,774	7,773	2,178	6,641	2,076	4,011	1,741	--	82,102
Aspen	1,406	1,817	1,209	799	388	432	--	--	--	--	--	--	--	6,051
Black cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Boxelder	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bur oak	23	12	--	--	--	--	--	--	--	--	--	--	--	35
Green ash	--	--	49	--	--	--	--	--	--	--	--	--	--	49
Narrowleaf cottonwood	--	26	--	81	--	--	--	--	--	--	--	--	--	107
Paper birch	7	--	--	--	--	--	--	--	--	--	--	--	--	7
Plains cottonwood	--	15	--	62	--	--	--	--	--	--	--	--	--	77
Hardwood total	1,436	1,870	1,257	942	388	432	--	--	--	--	--	--	--	6,326
All species	6,243	10,433	13,290	12,675	12,159	9,206	7,773	2,178	6,641	2,076	4,011	1,741	--	88,427

Table 74--Annual mortality of sawtimber (International ¼-inch rule) on nonreserved timberland by species and diameter class, Wyoming, 2001

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											
Blue spruce	--	--	--	--	--	--	--	--	--	--	--	--
Douglas-fir	1,849	2,508	11,449	11,223	3,507	1,444	13,865	4,037	11,160	--	--	61,042
Engelmann spruce	958	3,373	2,260	1,372	2,273	--	4,762	--	4,195	--	--	19,194
Limber pine	1,817	181	469	1,212	912	2,442	--	--	--	--	--	7,033
Lodgepole pine	15,862	20,818	13,335	11,324	12,852	--	3,900	--	--	--	--	78,091
Ponderosa pine	1,864	653	6,489	3,434	4,903	--	3,364	3,914	8,803	4,797	--	38,222
Subalpine fir	25,648	27,033	25,206	19,728	19,168	8,742	13,447	4,583	--	5,638	--	149,194
Whitebark pine	239	1,541	2,492	--	--	--	--	--	--	--	--	4,271
Softwood total	48,236	56,108	61,700	48,293	43,615	12,628	39,339	12,534	24,159	10,435	--	357,046
Aspen	([a])	3,880	2,111	2,385	--	--	--	--	--	--	--	8,375
Black cottonwood	([a])	--	--	--	--	--	--	--	--	--	--	--
Boxelder	([a])	--	--	--	--	--	--	--	--	--	--	--
Bur oak	([a])	--	--	--	--	--	--	--	--	--	--	--
Green ash	([a])	--	--	--	--	--	--	--	--	--	--	--
Narrowleaf cottonwood	([a])	424	--	--	--	--	--	--	--	--	--	424
Paper birch	([a])	--	--	--	--	--	--	--	--	--	--	--
Plains cottonwood	([a])	310	--	--	--	--	--	--	--	--	--	310
Hardwood total	([a])	4,613	2,111	2,385	--	--	--	--	--	--	--	9,109
All species	48,236	60,721	63,811	50,678	43,615	12,628	39,339	12,534	24,159	10,435	--	366,155

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

Table 75--Annual mortality of sawtimber (Scribner rule) on nonreserved timberland by species and diameter class, Wyoming, 2001

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											
Blue spruce	--	--	--	--	--	--	--	--	--	--	--	--
Douglas-fir	1,651	2,113	9,401	9,071	2,854	1,168	12,332	3,682	10,202	--	--	52,475
Engelmann spruce	823	2,874	1,884	1,117	1,838	--	4,342	--	3,817	--	--	16,694
Limber pine	1,633	161	405	1,017	768	2,127	--	--	--	--	--	6,111
Lodgepole pine	13,662	17,627	11,179	9,448	11,080	--	3,491	--	--	--	--	66,487
Ponderosa pine	1,488	530	5,448	2,923	4,230	--	2,968	3,474	7,818	4,261	--	33,141
Subalpine fir	22,504	22,743	20,695	15,994	15,891	7,660	11,835	4,183	--	5,152	--	126,657
Whitebark pine	210	1,301	2,050	--	--	--	--	--	--	--	--	3,560
Softwood total	41,971	47,349	51,061	39,571	36,662	10,954	34,968	11,339	21,837	9,413	--	305,126
Aspen	([a])	3,338	1,767	2,002	--	--	--	--	--	--	--	7,107
Black cottonwood	([a])	--	--	--	--	--	--	--	--	--	--	--
Boxelder	([a])	--	--	--	--	--	--	--	--	--	--	--
Bur oak	([a])	--	--	--	--	--	--	--	--	--	--	--
Green ash	([a])	--	--	--	--	--	--	--	--	--	--	--
Narrowleaf cottonwood	([a])	327	--	--	--	--	--	--	--	--	--	327
Paper birch	([a])	--	--	--	--	--	--	--	--	--	--	--
Plains cottonwood	([a])	218	--	--	--	--	--	--	--	--	--	218
Hardwood total	([a])	3,882	1,767	2,002	--	--	--	--	--	--	--	7,652
All species	41,971	51,231	52,828	41,573	36,662	10,954	34,968	11,339	21,837	9,413	--	312,777

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

Table 76--Annual mortality of growing stock on nonreserved timberland by species and cause of death, Wyoming, 2001

Species	Cause of death							Total
	Insects	Disease	Fire	Animal	Weather	Suppression	Unknown	
	Thousand cubic feet							
Blue spruce	21	--	--	--	--	--	--	21
Douglas-fir	2,607	3,857	4,487	--	40	171	310	11,473
Engelmann spruce	1,549	782	208	--	1,074	--	--	3,613
Limber pine	117	550	354	8	563	--	369	1,961
Lodgepole pine	3,410	9,681	4,174	95	1,257	182	1,682	20,480
Ponderosa pine	3,239	153	1,149	41	1,422	--	2,122	8,126
Subalpine fir	9,369	18,863	620	--	3,760	299	2,476	35,388
Whitebark pine	295	343	--	--	395	7	--	1,039
Softwood total	20,607	34,230	10,993	143	8,512	658	6,958	82,102
Aspen	170	4,713	--	41	268	88	771	6,051
Black cottonwood	--	--	--	--	--	--	--	--
Boxelder	--	--	--	--	--	--	--	--
Bur oak	--	12	--	--	--	--	23	35
Green ash	--	18	--	--	--	--	31	49
Narrowleaf cottonwood	--	--	--	81	--	--	26	107
Paper birch	--	7	--	--	--	--	--	7
Plains cottonwood	--	--	--	--	--	--	77	77
Hardwood total	170	4,750	--	122	268	88	928	6,326
All species	20,777	38,979	10,993	265	8,780	746	7,886	88,427

Table 77--Annual mortality of sawtimber (International ¼-inch rule) on nonreserved timberland by species and cause of death, Wyoming, 2001

Species	Cause of death							Total
	Insects	Disease	Fire	Animal	Weather	Suppression	Unknown	
	Thousand board feet							
Blue spruce	--	--	--	--	--	--	--	--
Douglas-fir	14,542	20,941	24,418	--	--	75	1,066	61,042
Engelmann spruce	8,334	3,755	1,060	--	6,046	--	--	19,194
Limber pine	205	1,448	1,270	--	2,830	--	1,279	7,033
Lodgepole pine	10,625	35,264	20,534	384	3,985	727	6,572	78,091
Ponderosa pine	16,213	742	4,677	78	5,880	--	10,631	38,222
Subalpine fir	35,529	85,494	2,102	--	14,561	--	11,509	149,194
Whitebark pine	1,239	1,492	--	--	1,541	--	--	4,271
Softwood total	86,686	149,136	54,061	462	34,843	801	31,057	357,046
Aspen	--	8,375	--	--	--	--	--	8,375
Black cottonwood	--	--	--	--	--	--	--	--
Boxelder	--	--	--	--	--	--	--	--
Bur oak	--	--	--	--	--	--	--	--
Green ash	--	--	--	--	--	--	--	--
Narrowleaf cottonwood	--	--	--	424	--	--	--	424
Paper birch	--	--	--	--	--	--	--	--
Plains cottonwood	--	--	--	--	--	--	310	310
Hardwood total	--	8,375	--	424	--	--	310	9,109
All species	86,686	157,512	54,061	886	34,843	801	31,367	366,155

Table 78--Annual mortality of sawtimber (Scribner rule) on nonreserved timberland by species and cause of death, Wyoming, 2001

Species	Cause of death							Total
	Insects	Disease	Fire	Animal	Weather	Suppression	Unknown	
	Thousand board feet							
Blue spruce	--	--	--	--	--	--	--	--
Douglas-fir	12,714	18,257	20,496	--	--	67	943	52,475
Engelmann spruce	7,240	3,137	867	--	5,450	--	--	16,694
Limber pine	181	1,278	1,098	--	2,477	--	1,077	6,111
Lodgepole pine	9,015	30,156	17,369	329	3,359	615	5,643	66,487
Ponderosa pine	14,290	626	3,944	63	4,941	--	9,278	33,141
Subalpine fir	29,795	73,017	1,781	--	12,282	--	9,781	126,657
Whitebark pine	1,019	1,241	--	--	1,301	--	--	3,560
Softwood total	74,253	127,712	45,555	392	29,811	682	26,721	305,126
Aspen	--	7,107	--	--	--	--	--	7,107
Black cottonwood	--	--	--	--	--	--	--	--
Boxelder	--	--	--	--	--	--	--	--
Bur oak	--	--	--	--	--	--	--	--
Green ash	--	--	--	--	--	--	--	--
Narrowleaf cottonwood	--	--	--	327	--	--	--	327
Paper birch	--	--	--	--	--	--	--	--
Plains cottonwood	--	--	--	--	--	--	218	218
Hardwood total	--	7,107	--	327	--	--	218	7,652
All species	74,253	134,818	45,555	719	29,811	682	26,939	312,777

Table 79--Removals from nonreserved timberland by species and product, Wyoming, 2002

Species	Product						All products
	Sawlogs	Composite products	Fuelwood	Post, pole, piling	Other products[a]	Logging residue	
	Thousand cubic feet						
Juniper	1	--	--	--	([b])	([b])	1
Douglas-fir	599	--	([b])	14	1	39	653
True fir	189	--	--	119	18	21	348
Lodgepole pine	2,672	--	3	845	141	234	3,896
Ponderosa pine	8,731	252	--	7	4	576	9,569
Spruce	808	--	([b])	([b])	12	53	873
Hardwoods	1	--	--	40	6	3	50
All species	13,002	252	4	1,024	182	926	15,391
	Thousand board feet, International ¼-inch rule						
Juniper	7	--	--	--	1	([c])	7
Douglas-fir	3,275	--	1	1	7	50	3,335
True fir	1,036	--	--	13	100	17	1,166
Lodgepole pine	14,613	--	18	89	771	236	15,727
Ponderosa pine	47,739	1,3777	--	1	21	754	49,892
Spruce	4,420	--	1	([c])	64	69	4,554
Hardwoods	7	--	--	4	34	1	46
All species	71,097	1,3777	20	108	997	1,127	74,726
	Thousand board feet, Scribner rule						
Juniper	6	--	--	--	([c])	([c])	7
Douglas-fir	2,924	--	1	1	6	45	2,977
True fir	925	--	--	11	89	16	1,041
Lodgepole pine	13,048	--	16	80	688	211	14,042
Ponderosa pine	42,624	1,230	--	1	19	673	44,546
Spruce	3,947	--	1	([c])	57	61	4,066
Hardwoods	6	--	--	4	30	1	41
All species	63,479	1,230	17	97	891	1,006	66,719

[a]Other products include house logs and log furniture logs.
[b]Less than 500 cubic feet.
[c]Less than 500 board feet.

Table 80--Removals from nonreserved timberland by species and owner group, Wyoming, 2002

Species	Owner: National Forest	Owner: Other public	Owner: Private	All owners
	Thousand cubic feet			
Juniper	--	--	1	1
Douglas-fir	73	25	556	653
True fir	61	25	262	348
Lodgepole pine	1,165	233	2,499	3,896
Ponderosa pine	1,470	795	7,304	9,569
Spruce	152	25	696	873
Hardwoods	([a])	8	42	50
All species	2,921	1,110	11,360	15,391
	Thousand board feet, International ¼-inch rule			
Juniper	--	--	7	7
Douglas-fir	379	129	2,826	3,335
True fir	319	98	749	1,166
Lodgepole pine	5,802	909	9,017	15,727
Ponderosa pine	7,672	4,147	38,073	49,892
Spruce	791	129	3,634	4,554
Hardwoods	1	33	12	46
All species	14,963	5,444	54,319	74,726
	Thousand board feet, Scribner rule			
Juniper	--	--	7	7
Douglas-fir	338	115	2,524	2,977
True fir	284	87	669	1,041
Lodgepole pine	5,180	811	8,050	14,042
Ponderosa pine	6,850	3,703	33,994	44,546
Spruce	706	115	3,245	4,066
Hardwoods	([b])	29	11	41
All species	13,359	4,861	48,499	66,719

[a]Less than 500 cubic feet.
[b]Less than 500 board feet.

Table 81--Removals from nonreserved timberland by species and product, Wyoming, 2002

Species	Owner: National Forest	Owner: Other public	Owner: Private	All owners
	Thousand cubic feet			
Sawlogs	2,649	863	9,491	13,002
Composite products	--	--	252	252
Fuelwood	4	--	--	4
Post, pole, piling	51	64	909	1,024
Other products[a]	42	117	24	182
Logging residue	176	67	684	926
All products	2,921	1,110	11,360	15,391
	Thousand board feet, International ¼-inch rule			
Sawlogs	14,484	4,717	51,896	71,097
Composite products	--	--	1,377	1,377
Fuelwood	20	--	--	20
Post, pole, piling	5	7	96	108
Other products[a]	228	639	130	997
Logging residue	226	82	819	1,127
All products	14,963	5,444	54,319	74,726
	Thousand board feet, Scribner rule			
Sawlogs	12,932	4,211	46,336	63,479
Composite products	--	--	1,230	1,230
Fuelwood	17	--	--	17
Post, pole, piling	5	6	86	97
Other products[a]	204	570	116	891
Logging residue	201	73	731	1,006
All products	13,359	4,861	48,499	66,719

[a]Other products include house logs and log furniture logs.

Table 82--Area of nonreserved woodland by forest type and owner group, Wyoming, 2002

Forest type	Owner group: National Forest	Other public	Nonindustrial private	Total
	Acres			
Cercocarpus woodland	2,088	14,923	--	17,011
Deciduous woodland oak	8,075	--	--	8,075
Juniper	30,077	542,356	282,308	854,741
Maple woodland	26,459	6,350	7,528	40,337
Pinyon-juniper	--	10,927	--	10,927
Nonstocked woodland	2,883	160,833	75,145	238,860
All types	69,582	735,389	364,982	1,169,952

Table 83--Number of live trees on nonreserved woodland by species and diameter class, Wyoming, 2002

Species	Diameter class (inches) 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+	All classes
	Thousand trees															
Common or twoneedle pinyon[a]	--	--	75	--	--	38	--	--	--	--	--	--	--	--	--	113
Douglas-fir	--	--	134	133	172	--	--	31	50	69	--	--	--	--	--	589
Limber pine	2,653	1,311	1,211	728	510	248	147	79	--	--	--	--	--	38	--	6,925
Ponderosa pine	4,500	2,992	1,856	975	509	481	422	121	38	--	--	38	--	--	--	11,932
Rocky Mountain juniper[a]	45,521	24,276	10,936	8,541	4,776	3,098	2,854	2,064	958	626	402	199	77	41	79	104,447
Subalpine fir	626	--	50	135	--	--	--	35	35	--	--	35	--	--	--	916
Utah juniper[a]	18,208	12,188	6,993	7,335	6,461	5,595	4,272	2,194	2,247	2,040	1,343	944	569	363	1,267	72,019
Softwood total	71,507	40,766	21,256	17,847	12,428	9,459	7,695	4,523	3,328	2,735	1,745	1,216	647	442	1,346	196,942
Aspen	512	--	73	114	41	--	--	--	--	--	--	--	--	--	--	739
Bigtooth maple[a]	--	--	104	69	--	--	--	--	--	--	--	--	--	--	--	173
Curlleaf mountain-mahogany[a]	4,618	4,572	1,059	683	391	153	102	--	--	--	--	--	--	--	--	11,577
Gambel oak[a]	9,816	785	252	32	--	--	--	--	--	--	--	--	--	--	--	10,885
Narrowleaf cottonwood	--	--	32	32	32	--	--	--	--	--	--	--	--	--	--	95
Rocky Mountain maple[a]	8,881	2,161	--	50	--	--	--	--	--	--	50	--	--	--	--	11,142
Hardwood total	23,826	7,518	1,519	979	463	153	102	--	--	--	50	--	--	--	--	34,612
All species	95,333	48,285	22,775	18,826	12,891	9,613	7,797	4,523	3,328	2,735	1,796	1,216	647	442	1,346	231,553

[a]Diameter taken at root collar rather than at breast height.

Table 84--Net volume of all live trees on nonreserved woodland by forest type and owner group, Wyoming, 2002

Forest type	Owner group			Total
	National Forest	Other public	Nonindustrial private	
	Thousand cubic feet			
Cercocarpus woodland	498	2,901	--	3,398
Deciduous woodland oak	687	--	--	687
Juniper	6,538	211,765	89,171	307,474
Maple woodland	16,032	43	1,265	17,340
Pinyon-juniper	--	6,473	--	6,473
Nonstocked woodland	73	4,913	2,652	7,638
All types	23,827	226,095	93,088	343,010

Table 85--Net volume of all live trees on nonreserved woodland by species and diameter class, Wyoming, 2002

Species	Diameter class (inches at root collar) 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													
Common or twoneedle pinyon[a]	36	--	--	157	--	--	--	--	--	--	--	--	--	192
Douglas-fir	129	549	1,036	--	--	1,180	1,469	4,460	--	--	--	--	--	8,822
Limber pine	878	1,888	2,443	2,263	1,975	1,492	--	--	--	--	--	1,907	--	12,845
Ponderosa pine	1,463	2,626	2,922	4,853	6,147	1,976	2,051	--	--	2,466	--	--	--	24,504
Rocky Mountain juniper[a]	7,538	11,047	9,909	10,009	12,371	11,680	7,597	5,340	4,213	4,072	1,050	679	2,415	87,921
Subalpine fir	38	535	--	--	--	1,192	1,988	--	--	3,023	--	--	--	6,776
Utah juniper[a]	3,304	6,852	11,075	14,976	15,902	11,329	16,191	18,695	15,939	12,686	10,107	7,621	51,913	196,589
Softwood total	13,386	23,497	27,385	32,257	36,395	28,848	29,296	28,495	20,152	22,246	11,158	10,207	54,328	337,649
Aspen	86	266	179	--	--	--	--	--	--	--	--	--	--	532
Bigtooth maple[a]	218	247	--	--	--	--	--	--	--	--	--	--	--	465
Curlleaf mountain-mahogany[a]	312	683	623	551	401	--	--	--	--	--	--	--	--	2,570
Gambel oak[a]	326	80	--	--	--	--	--	--	--	--	--	--	--	405
Narrowleaf cottonwood	10	45	101	--	--	--	--	--	--	--	--	--	--	157
Rocky Mountain maple[a]	--	44	--	--	--	--	--	--	1,188	--	--	--	--	1,232
Hardwood total	952	1,365	903	551	401	--	--	--	1,188	--	--	--	--	5,361
All species	14,338	24,862	28,288	32,808	36,796	28,848	29,296	28,495	21,339	22,246	11,158	10,207	54,328	343,010

[a]Diameter taken at root collar rather than at breast height.

Table 86--Net annual growth of all live trees on nonreserved woodland by forest type and owner group, Wyoming, 2001

Forest type	Owner group			Total
	National Forest	Other public	Nonindustrial private	
	Thousand cubic feet			
Cercocarpus woodland	3	73	--	76
Deciduous woodland oak	43	--	--	43
Juniper	109	1,476	400	1,985
Maple woodland	384	3	-470	-82
Pinyon-juniper	--	42	--	42
Nonstocked woodland	1	-81	-203	-282
All types	540	1,514	-272	1,782

Table 87--Net annual growth of all live trees on nonreserved woodland by species and diameter class, Wyoming, 2001

Species	Diameter class (inches) 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													
Common or twoneedle pinyon[a]	1	--	--	2	--	--	--	--	--	--	--	--	--	3
Douglas-fir	6	-59	53	--	-157	11	33	91	--	--	--	--	--	-22
Limber pine	36	3	-65	25	21	18	--	--	--	--	--	4	--	42
Ponderosa pine	158	93	59	8	98	22	9	--	--	12	-516	--	--	-57
Rocky Mountain juniper[a]	305	32	-68	11	69	-5	48	17	23	17	3	2	3	457
Subalpine fir	7	25	--	--	--	43	57	--	--	82	--	--	--	213
Utah juniper[a]	150	54	88	106	94	69	33	83	61	54	45	23	148	1,007
Softwood total	663	148	67	152	125	158	179	191	84	164	-468	29	151	1,643
Aspen	7	13	2	--	--	--	--	--	--	--	--	--	--	22
Bigtooth maple[a]	6	5	--	--	--	--	--	--	--	--	--	--	--	10
Curlleaf mountain-mahogany[a]	33	8	6	4	3	--	--	--	--	--	--	--	--	55
Gambel oak[a]	30	1	--	--	--	--	--	--	--	--	--	--	--	32
Narrowleaf cottonwood	1	1	2	--	--	--	--	--	--	--	--	--	--	3
Rocky Mountain maple[a]	--	1	--	--	--	--	--	--	15	--	--	--	--	16
Hardwood total	77	30	10	4	3	--	--	--	15	--	--	--	--	138
All species	740	177	77	156	128	158	179	191	99	164	-468	29	151	1,782

[a]Diameter taken at root collar rather than at breast height.

Table 88--Annual mortality of all trees on nonreserved woodland by forest type and owner group, Wyoming, 2001

Forest type	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand cubic feet			
Cercocarpus woodland	--	--	--	--
Deciduous woodland oak	--	--	--	--
Juniper	86	28	604	718
Maple woodland	--	--	516	516
Pinyon-juniper	--	--	--	--
Nonstocked woodland	--	250	247	497
All types	86	278	1,367	1,731

Table 89--Annual mortality of all trees on nonreserved woodland by species and diameter class, Wyoming, 2001

Species	Diameter class (inches) 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													
Common or twoneedle pinyon[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Douglas-fir	7	83	--	--	157	--	--	--	--	--	--	--	--	247
Limber pine	25	65	115	--	--	--	--	--	--	--	--	--	--	204
Ponderosa pine	1	5	5	72	--	--	--	--	--	--	516	--	--	599
Rocky Mountain juniper[a]	112	123	163	77	19	84	--	--	--	--	--	--	--	577
Subalpine fir	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Utah juniper[a]	6	20	13	--	--	--	64	--	--	--	--	--	--	104
Softwood total	151	295	296	149	176	84	64	--	--	--	516	--	--	1,731
Aspen	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Bigtooth maple[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Curlleaf mountain-mahogany[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Gambel oak[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Narrowleaf cottonwood	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rocky Mountain maple[a]	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hardwood total	--	--	--	--	--	--	--	--	--	--	--	--	--	--
All species	151	295	296	149	176	84	64	--	--	--	516	--	--	1,731

[a]Diameter taken at root collar rather than at breast height.

Table 90--Area by county and land class, Wyoming, 2002

County	Forest land: Timberland[a]	Forest land: Reserved timberland	Forest land: Other forest land[b]	Nonforest	Water	Total
	Acres					
Albany	447,823	6,532	115,432	2,155,991	45,476	2,771,255
Big Horn	204,986	25,267	53,717	1,832,098	1,586	2,117,653
Campbell	148,223	--	83,151	2,916,030	--	3,147,404
Carbon	647,915	63,690	84,070	4,322,265	57,374	5,175,315
Converse	227,187	--	67,894	2,337,428	4,662	2,637,171
Crook	518,915	--	18,554	1,147,850	13,822	1,699,141
Fremont	502,994	309,915	229,395	4,857,089	66,023	5,965,417
Goshen	19,857	--	20,014	1,351,483	8,380	1,399,735
Hot Springs	110,877	12,748	88,410	1,057,357	6,165	1,275,556
Johnson	280,502	43,701	25,918	2,235,884	7,019	2,593,023
Laramie	19,370	--	7,528	1,690,569	--	1,717,467
Lincoln	737,183	--	59,236	1,774,002	13,495	2,583,916
Natrona	60,603	--	183,004	3,211,913	25,141	3,480,661
Niobrara	48,031	--	7,528	1,654,722	8,380	1,718,662
Park	382,141	1,495,589	165,972	2,326,522	52,218	4,422,442
Platte	66,830	--	24,945	1,171,749	23,874	1,287,398
Sheridan	309,083	8,582	32,483	1,263,894	283	1,614,325
Sublette	515,508	235,743	77,848	2,296,255	36,909	3,162,262
Sweetwater	6,311	--	278,227	6,409,280	36,991	6,730,808
Teton	435,804	1,419,215	67,318	680,378	148,718	2,751,433
Uinta	76,673	--	38,167	1,115,697	9,086	1,239,622
Washakie	28,451	--	68,099	1,349,023	--	1,445,573
Weston	201,759	--	29,976	1,363,265	345	1,595,345
Total	5,997,025	3,620,982	1,826,888	50,520,743	565,946	62,531,584

[a]Includes nonreserved forest land with productivity classes 20 and greater.
[b]Includes both reserved and nonreserved forest land with productivity less than 20.

Table 91--Area of reserved timberland and other forest land by forest type, Wyoming, 2002

Forest type	Forest land: Reserved timberland	Forest land: Other forest land	Total
	Acres		
Aspen	55,876	111,764	167,640
Blue spruce	--	--	--
Bur oak	--	--	--
Cercocarpus woodland	--	17,011	17,011
Cottonwood	--	22,509	22,509
Deciduous woodland oak	--	8,075	8,075
Douglas-fir	244,451	9,998	254,449
Engelmann spruce	531,854	--	531,854
Green ash	--	--	--
Juniper	--	858,471	858,471
Limber pine	22,408	227,109	249,517
Lodgepole pine	1,332,688	110,531	1,443,219
Maple woodland	--	47,217	47,217
Paper birch	--	--	--
Pinyon-juniper	--	10,927	10,927
Ponderosa pine	--	13,100	13,100
Spruce-fir	747,483	7,136	754,619
Whitebark pine	367,636	21,180	388,815
Nonstocked timberland	318,586	123,001	441,587
Nonstocked woodland	--	238,860	238,860
All types	3,620,982	1,826,888	5,447,870

Table 92--Area of nonreserved productive timberland (20+) by county and ownership class, Wyoming, 2002

County	Ownership class						Total
	National Forest	Bureau of Land Management	Miscellaneous Federal	State	Indian Trust	Other private	
	Acres						
Albany	275,042	6,350	--	54,098	--	112,333	447,823
Big Horn	174,379	11,219	--	--	--	19,388	204,986
Campbell	--	14,620	--	7,422	--	126,181	148,223
Carbon	479,746	68,095	3,085	46,172	--	50,817	647,915
Converse	83,356	6,753	--	23,363	--	113,713	227,187
Crook	168,186	--	--	58,418	--	292,311	518,915
Fremont	340,177	72,669	--	--	90,148	--	502,994
Goshen	--	--	--	--	--	19,857	19,857
Hot Springs	22,874	27,863	--	--	14,967	45,172	110,877
Johnson	165,341	68,476	--	6,350	--	40,334	280,502
Laramie	--	--	--	--	--	19,370	19,370
Lincoln	624,620	83,726	--	16,273	--	12,564	737,183
Natrona	--	17,569	--	11,960	--	31,075	60,603
Niobrara	--	--	--	6,350	--	41,681	48,031
Park	327,396	13,404	--	14,239	--	27,103	382,141
Platte	--	6,350	--	7,692	--	52,787	66,830
Sheridan	275,163	--	--	11,219	--	22,701	309,083
Sublette	445,789	52,002	--	--	--	17,717	515,508
Sweetwater	--	--	--	6,311	--	--	6,311
Teton	435,804	--	--	--	--	--	435,804
Uinta	37,762	15,776	--	--	--	23,135	76,673
Washakie	5,632	11,960	--	--	--	10,860	28,451
Weston	14,794	24,435	--	17,902	--	144,628	201,759
Total	3,876,063	501,267	3,085	287,769	105,115	1,223,726	5,997,025

Table 93--Area of nonreserved productive timberland (20+) by forest type and owner group, Wyoming, 2002

Forest type	Owner group			Total
	National Forest	Other public	Nonindustrial private	
	Acres			
Aspen	347,626	91,274	86,089	524,989
Blue spruce	18,521	--	4,652	23,172
Bur oak	29,319	13,066	53,797	96,182
Cercocarpus woodland	--	--	--	--
Cottonwood	--	3,085	71,238	74,323
Deciduous woodland oak	--	--	--	--
Douglas-fir	515,659	65,587	84,222	665,468
Engelmann spruce	345,278	18,773	21,019	385,070
Green ash	--	6,470	4,874	11,344
Juniper	--	--	--	--
Limber pine	77,454	83,144	50,286	210,883
Lodgepole pine	1,062,199	100,080	67,690	1,229,970
Maple woodland	--	--	--	--
Paper birch	6,670	--	--	6,670
Pinyon-juniper	--	--	--	--
Ponderosa pine	222,925	197,265	631,111	1,051,300
Spruce-fir	984,948	78,646	31,117	1,094,711
Whitebark pine	136,058	8,573	20,950	165,581
Nonstocked timberland	129,406	126,158	201,796	457,361
Nonstocked woodland	--	--	--	--
All types	3,876,063	792,120	1,328,842	5,997,025

Table 94--Area of nonreserved productive timberland (20+) by owner group and stand-size class, Wyoming, 2002

Owner group	Stand-size class: Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	All classes
	Acres				
National Forest	2,295,980	875,081	575,596	129,406	3,876,063
Other public	347,440	241,338	77,185	126,158	792,120
Nonindustrial private	698,064	270,111	158,871	201,796	1,328,842
Total	3,341,483	1,386,529	811,652	457,361	5,997,025

Table 95--Area of nonreserved productive timberland (20+) by owner group and productivity class, Wyoming, 2002

Owner group	Productivity class (cubic feet/acre/year): 85-119	50-84	20-49	Total
	Acres			
National Forest	13,147	869,663	2,993,253	3,876,063
Other public	--	62,744	729,377	792,120
Nonindustrial private	13,258	91,595	1,223,988	1,328,842
Total	26,405	1,024,002	4,946,618	5,997,025

Table 96--Area of nonreserved productive timberland (20+) by forest type and stand-size class, Wyoming, 2002

Forest type	Stand-size class: Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	All classes
	Acres				
Aspen	68,191	283,296	173,502	--	524,989
Blue spruce	18,521	--	4,652	--	23,172
Bur oak	18,032	44,321	33,829	--	96,182
Cercocarpus woodland	--	--	--	--	--
Cottonwood	45,992	7,373	20,958	--	74,323
Deciduous woodland oak	--	--	--	--	--
Douglas-fir	530,970	80,209	54,288	--	665,468
Engelmann spruce	306,883	41,251	36,936	--	385,070
Green ash	4,874	6,470	--	--	11,344
Juniper	--	--	--	--	--
Limber pine	107,234	53,974	49,675	--	210,883
Lodgepole pine	519,529	484,425	226,016	--	1,229,970
Maple woodland	--	--	--	--	--
Paper birch	--	--	6,670	--	6,670
Pinyon-juniper	--	--	--	--	--
Ponderosa pine	825,803	138,605	86,892	--	1,051,300
Spruce-fir	747,085	236,377	111,250	--	1,094,711
Whitebark pine	148,369	10,228	6,984	--	165,581
Nonstocked timberland	--	--	--	457,361	457,361
Nonstocked woodland	--	--	--	--	--
All types	3,341,483	1,386,529	811,652	457,361	5,997,025

Table 97--Number of live trees on nonreserved productive timberland (20+) by species and diameter class, Wyoming, 2002

Species	Diameter class (inches at breast height) 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+	All classes
	Thousand trees															
Blue spruce	432	--	324	280	406	304	150	439	37	63	32	--	66	69	69	2,672
Douglas-fir	68,678	36,640	30,020	22,538	17,787	11,962	7,674	5,232	3,466	1,974	1,245	523	695	449	282	209,165
Engelmann spruce	96,005	48,248	32,994	23,504	18,099	11,348	9,302	5,766	4,498	3,441	2,205	1,501	834	690	765	259,199
Limber pine	27,295	26,132	15,796	11,247	6,477	3,355	2,481	831	651	204	124	98	111	59	174	95,035
Lodgepole pine	203,685	148,414	127,124	97,397	54,990	24,973	12,361	5,602	2,845	915	444	207	107	36	35	679,135
Ponderosa pine	76,428	65,407	34,197	27,810	19,140	14,786	8,691	5,467	2,658	1,416	447	418	187	147	--	257,198
Rocky Mountain juniper[a]	22,659	9,239	6,224	3,583	2,581	1,187	624	394	164	82	32	--	39	--	--	46,808
Subalpine fir	387,224	147,961	76,379	42,482	22,608	13,986	7,053	5,404	2,233	1,090	501	221	199	83	45	707,469
Utah juniper[a]	--	--	48	134	38	76	--	38	--	--	--	--	--	--	--	333
Whitebark pine	25,061	15,570	10,527	8,508	5,238	3,965	2,445	1,892	1,012	505	161	31	228	31	169	75,342
Softwood total	907,468	497,610	333,633	237,483	147,364	85,942	50,781	31,064	17,564	9,689	5,191	2,999	2,466	1,564	1,539	2,332,355
Aspen	137,392	49,097	38,195	26,713	13,765	6,798	2,464	744	234	114	--	--	--	--	--	275,515
Bigtooth maple[a]	10,545	3,756	--	--	--	--	--	--	--	--	--	--	--	--	--	14,300
Black cottonwood	--	465	75	37	--	37	--	--	--	--	--	37	--	--	--	652
Boxelder	--	--	343	36	78	78	73	--	--	--	--	--	--	--	--	608
Bur oak	19,636	11,874	6,574	2,555	976	459	32	39	--	--	--	--	--	--	--	42,146
Curlleaf mountain-mahogany[a]	--	--	--	115	90	45	--	--	45	--	--	--	--	--	--	295
Green ash	453	451	256	572	416	310	78	36	--	--	--	--	--	--	--	2,573
Narrowleaf cottonwood	--	--	127	148	156	75	208	194	195	39	--	--	117	--	--	1,260
Paper birch	4,800	400	803	193	--	--	--	--	--	--	--	--	--	--	--	6,195
Plains cottonwood	--	--	392	443	295	95	95	48	74	41	223	82	115	109	296	2,306
Rocky Mountain maple[a]	18,811	432	69	--	--	--	--	--	--	--	--	--	--	--	--	19,313
Hardwood total	191,637	66,475	46,834	30,811	15,777	7,897	2,950	1,062	548	194	223	119	232	109	296	365,162
All species	1,099,104	564,084	380,467	268,295	163,141	93,839	53,730	32,126	18,111	9,883	5,414	3,118	2,697	1,673	1,835	2,697,517

[a]Diameter taken at root collar rather than at breast height.

Table 98--Number of growing-stock trees on nonreserved productive timberland (20+) by species and diameter class, Wyoming, 2002

Species	Diameter class (inches at breast height) 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+	All classes
	Thousand trees															
Blue spruce	432	--	324	242	406	304	150	439	37	63	32	--	66	69	69	2,635
Douglas-fir	61,576	32,873	29,279	21,892	17,480	11,841	7,638	5,164	3,466	1,894	1,245	478	695	449	282	196,249
Engelmann spruce	78,897	41,947	32,202	23,273	18,068	11,266	9,302	5,766	4,498	3,398	2,169	1,501	788	654	765	234,494
Limber pine	22,287	21,845	13,833	10,133	5,987	3,317	2,437	831	651	204	124	--	111	59	174	81,993
Lodgepole pine	165,670	130,621	125,642	96,563	54,404	24,871	12,108	5,602	2,812	915	444	207	107	36	35	620,037
Ponderosa pine	55,690	50,776	29,540	26,317	18,574	14,597	8,467	5,389	2,658	1,416	447	418	187	147	--	214,622
Subalpine fir	315,724	133,540	74,033	41,765	22,228	13,790	6,985	5,334	2,196	1,090	465	221	199	83	45	617,700
Whitebark pine	16,287	12,619	8,899	7,556	4,554	3,365	2,259	1,824	930	474	161	31	137	31	169	59,295
Softwood total	716,562	424,220	313,752	227,741	141,702	83,351	49,346	30,350	17,248	9,452	5,086	2,856	2,291	1,529	1,539	2,027,023
Aspen	118,694	39,028	33,301	24,778	12,926	6,464	2,346	607	184	114	--	--	--	--	--	238,443
Black cottonwood	--	--	37	37	--	37	--	--	--	--	--	37	--	--	--	149
Boxelder	--	--	270	36	--	--	--	--	--	--	--	--	--	--	--	306
Bur oak	9,415	4,796	3,451	1,772	793	419	32	39	--	--	--	--	--	--	--	20,718
Green ash	453	--	181	406	338	232	78	36	--	--	--	--	--	--	--	1,724
Narrowleaf cottonwood	--	--	36	148	156	75	169	117	195	39	--	--	117	--	--	1,053
Paper birch	4,800	--	642	128	--	--	--	--	--	--	--	--	--	--	--	5,571
Plains cottonwood	--	--	274	364	256	95	95	48	37	41	223	82	115	109	296	2,035
Hardwood total	133,363	43,824	38,193	27,671	14,469	7,323	2,720	848	416	194	223	119	232	109	296	270,000
All species	849,925	468,045	351,945	255,411	156,171	90,673	52,066	31,197	17,664	9,646	5,309	2,975	2,523	1,638	1,835	2,297,023

Table 99--Net volume of growing stock on nonreserved productive timberland (20+) by species and diameter class, Wyoming, 2002

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													
Blue spruce	561	1,438	4,410	5,058	3,682	16,183	1,745	4,269	1,998	--	9,355	12,114	25,255	86,068
Douglas-fir	61,518	119,490	183,621	207,172	197,043	188,604	177,939	115,363	91,041	43,936	75,112	57,568	64,568	1,582,977
Engelmann spruce	64,803	128,001	201,769	201,164	253,982	227,806	238,092	236,656	185,443	153,301	95,902	85,714	158,181	2,230,814
Limber pine	20,898	45,877	57,268	52,943	57,201	24,164	26,292	9,287	8,030	--	11,964	6,325	22,132	342,380
Lodgepole pine	383,643	725,171	755,827	536,191	362,616	219,949	147,579	58,846	34,870	18,028	13,033	5,679	6,175	3,267,608
Ponderosa pine	48,354	114,701	155,487	203,743	178,883	165,677	119,689	74,066	28,285	33,656	19,740	15,931	--	1,158,210
Subalpine fir	164,206	244,957	255,296	260,988	193,740	209,658	115,824	72,677	34,916	18,012	21,231	11,848	9,499	1,612,852
Whitebark pine	15,883	43,278	49,794	63,995	59,769	61,899	43,131	27,849	10,640	3,139	14,062	2,164	27,839	423,443
Softwood total	759,864	1,422,914	1,663,473	1,531,255	1,306,916	1,113,939	870,292	599,013	395,223	270,072	260,399	197,343	313,650	10,704,352
Aspen	64,212	129,278	134,727	105,213	56,244	17,539	8,057	5,050	--	--	--	--	--	520,320
Black cottonwood	77	152	--	433	--	--	--	--	--	2,782	--	--	--	3,444
Boxelder	295	102	--	--	--	--	--	--	--	--	--	--	--	397
Bur oak	3,257	5,048	4,474	4,147	437	534	--	--	--	--	--	--	--	17,896
Green ash	221	1,083	2,061	2,086	606	698	--	--	--	--	--	--	--	6,754
Narrowleaf cottonwood	89	818	1,798	1,026	3,045	3,929	7,312	2,019	--	--	8,210	--	--	28,247
Paper birch	1,191	506	--	--	--	--	--	--	--	--	--	--	--	1,697
Plains cottonwood	336	1,308	1,790	1,603	2,162	1,502	601	1,725	11,302	4,663	7,242	13,957	73,093	121,284
Hardwood total	69,679	138,294	144,850	114,508	62,494	24,203	15,970	8,793	11,302	7,444	15,452	13,957	73,093	700,039
All species	829,543	1,561,208	1,808,323	1,645,763	1,369,410	1,138,141	886,262	607,807	406,525	277,516	275,850	211,299	386,744	11,404,391

Table 100--Net volume of sawtimber (Scribner rule) on nonreserved productive timberland (20+) by species and diameter class, Wyoming, 2002

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											
Blue spruce	15,978	19,523	15,591	69,610	7,679	19,454	9,605	--	54,201	69,714	157,247	438,602
Douglas-fir	636,067	813,543	806,651	788,442	764,948	530,159	445,238	225,280	393,090	311,944	350,673	6,066,036
Engelmann spruce	732,231	808,818	1,068,410	995,604	1,072,037	1,157,061	957,689	823,900	534,769	453,650	938,544	9,542,713
Limber pine	150,855	171,274	206,506	89,560	107,092	41,046	34,816	--	48,243	31,117	99,539	980,048
Lodgepole pine	2,479,486	2,032,929	1,513,754	977,217	683,123	284,226	168,849	88,888	62,523	30,966	31,322	8,353,283
Ponderosa pine	345,099	666,350	688,579	705,343	563,244	357,186	139,730	162,919	101,547	85,679	--	3,815,677
Subalpine fir	924,913	1,042,639	806,438	895,986	518,717	340,854	170,837	94,908	115,191	68,800	55,267	5,034,549
Whitebark pine	137,665	215,441	219,151	235,333	165,575	118,725	37,485	14,054	63,433	4,928	116,244	1,328,034
Softwood total	5,422,295	5,770,517	5,325,079	4,757,095	3,882,416	2,848,711	1,964,248	1,409,950	1,372,998	1,056,798	1,748,836	35,558,943
Aspen	([a])	414,625	238,577	75,393	37,862	22,427	--	--	--	--	--	788,884
Black cottonwood	([a])	1,627	--	--	--	--	--	13,955	--	--	--	15,582
Bur oak	([a])	13,291	1,470	1,999	--	--	--	--	--	--	--	16,760
Green ash	([a])	6,720	1,909	1,886	--	--	--	--	--	--	--	10,514
Narrowleaf cottonwood	([a])	4,241	8,424	11,460	25,333	5,610	--	--	37,822	--	--	92,890
Plains cottonwood	([a])	6,367	7,229	6,118	1,469	7,345	44,042	16,256	28,224	64,312	317,924	499,286
Hardwood total	([a])	446,871	257,608	96,856	64,665	35,382	44,042	30,211	66,046	64,312	317,924	1,423,917
All species	5,422,295	6,217,388	5,582,688	4,853,951	3,947,081	2,884,093	2,008,290	1,440,161	1,439,044	1,121,110	2,066,759	36,982,860

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

Table 101--Net volume of growing stock on nonreserved productive timberland (20+) by species and owner group, Wyoming, 2002

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand cubic feet			
Blue spruce	81,006	--	5,063	86,068
Douglas-fir	1,241,976	149,086	191,915	1,582,977
Engelmann spruce	2,067,403	51,493	111,918	2,230,814
Limber pine	237,742	50,089	54,549	342,380
Lodgepole pine	2,844,466	226,726	196,416	3,267,608
Ponderosa pine	323,836	227,586	606,789	1,158,210
Subalpine fir	1,431,051	138,822	42,979	1,612,852
Whitebark pine	390,243	9,552	23,649	423,443
Softwood total	8,617,722	853,354	1,233,277	10,704,353
Aspen	322,009	104,518	93,794	520,320
Black cottonwood	--	--	3,444	3,444
Boxelder	--	235	162	397
Bur oak	1,261	4,796	11,840	17,896
Green ash	180	--	6,574	6,754
Narrowleaf cottonwood	--	799	27,448	28,247
Paper birch	1,697	--	--	1,697
Plains cottonwood	--	--	121,284	121,284
Hardwood total	325,146	110,348	264,545	700,039
All species	8,942,869	963,702	1,497,822	11,404,392

Table 102--Net volume of sawtimber (Scribner rule) on nonreserved productive timberland (20+) by species and owner group, Wyoming, 2002

Species	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand board feet			
Blue spruce	418,199	--	20,403	438,602
Douglas-fir	4,877,755	482,695	705,586	6,066,036
Engelmann spruce	8,884,045	218,174	440,494	9,542,713
Limber pine	724,394	102,023	153,631	980,048
Lodgepole pine	7,314,480	523,360	515,442	8,353,283
Ponderosa pine	1,231,104	710,740	1,873,833	3,815,677
Subalpine fir	4,495,175	401,119	138,255	5,034,549
Whitebark pine	1,254,153	10,169	63,712	1,328,034
Softwood total	29,199,305	2,448,281	3,911,356	35,558,943
Aspen	524,915	154,471	109,499	788,884
Black cottonwood	--	--	15,582	15,582
Bur oak	1,470	8,719	6,572	16,760
Green ash	--	--	10,514	10,514
Narrowleaf cottonwood	--	--	92,890	92,890
Plains cottonwood	--	--	499,286	499,286
Hardwood total	526,385	163,189	734,343	1,423,917
All species	29,725,690	2,611,470	4,645,699	36,982,860

Table 103--Net volume of growing stock on nonreserved productive timberland (20+) by forest type and stand-size class,Wyoming, 2002

Forest type	Stand-size class				All classes
	Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	
	Thousand cubic feet				
Aspen	167,001	449,447	32,586	--	649,034
Blue spruce	85,677	--	5,063	--	90,739
Bur oak	22,597	39,230	10,619	--	72,445
Cottonwood	147,496	3,433	3,847	--	154,776
Douglas-fir	1,318,856	92,482	14,337	--	1,425,675
Engelmann spruce	1,229,556	58,561	6,267	--	1,294,385
Green ash	2,655	1,447	--	--	4,103
Limber pine	253,332	37,391	5,222	--	295,945
Lodgepole pine	1,689,062	1,083,117	73,898	--	2,846,077
Paper birch	--	--	1,727	--	1,727
Ponderosa pine	958,763	105,955	17,385	--	1,082,103
Spruce-fir	2,528,611	443,861	58,268	--	3,030,740
Whitebark pine	408,641	13,589	1,811	--	424,040
Nonstocked timberland	--	--	--	32,603	32,603
All types	8,812,247	2,328,512	231,030	32,603	11,404,392

Table 104--Net volume of sawtimber (Scribner rule) on nonreserved productive timberland (20+) by forest type and stand-size class, Wyoming, 2002

Forest type	Stand-size class				All classes
	Sawtimber	Poletimber	Sapling/ seedling	Nonstocked	
	Thousand board feet				
Aspen	506,118	905,232	86,045	--	1,497,395
Blue spruce	426,620	--	20,403	--	447,023
Bur oak	71,692	107,688	33,205	--	212,585
Cottonwood	594,617	2,872	6,281	--	603,770
Douglas-fir	5,027,663	172,194	48,969	--	5,248,826
Engelmann spruce	5,011,191	126,607	19,845	--	5,157,643
Green ash	6,024	4,451	--	--	10,474
Limber pine	809,874	68,438	10,599	--	888,911
Lodgepole pine	5,353,358	1,464,220	95,111	--	6,912,689
Paper birch	--	--	3,482	--	3,482
Ponderosa pine	3,341,446	160,744	27,980	--	3,530,170
Spruce-fir	9,848,428	975,880	185,522	--	11,009,830
Whitebark pine	1,325,068	37,898	527	--	1,363,493
Nonstocked timberland	--	--	--	96,569	96,569
All types	32,322,099	4,026,223	537,969	96,569	36,982,860

Table 105--Net volume of growing stock on nonreserved productive timberland (20+) by forest type and owner group, Wyoming, 2002

Forest type	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand cubic feet			
Aspen	404,455	132,402	112,177	649,034
Blue spruce	85,677	--	5,063	90,739
Bur oak	9,799	9,882	52,765	72,445
Cottonwood	--	128	154,648	154,776
Douglas-fir	1,075,237	128,158	222,280	1,425,675
Engelmann spruce	1,180,396	38,606	75,383	1,294,385
Green ash	--	1,447	2,655	4,103
Limber pine	217,078	39,295	39,571	295,945
Lodgepole pine	2,457,987	221,725	166,365	2,846,077
Paper birch	1,727	--	--	1,727
Ponderosa pine	309,898	220,470	551,735	1,082,103
Spruce-fir	2,814,479	149,415	66,846	3,030,740
Whitebark pine	370,707	17,290	36,044	424,040
Nonstocked timberland	15,431	4,883	12,289	32,603
All types	8,942,869	963,702	1,497,822	11,404,392

Table 106--Net volume of sawtimber (Scribner rule) on nonreserved productive timberland (20+) by forest type and owner group, Wyoming, 2002

Forest type	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand board feet			
Aspen	974,692	325,824	196,879	1,497,395
Blue spruce	426,620	--	20,403	447,023
Bur oak	23,548	30,598	158,438	212,585
Cottonwood	--	--	603,770	603,770
Douglas-fir	4,068,583	383,071	797,173	5,248,826
Engelmann spruce	4,718,495	144,168	294,980	5,157,643
Green ash	--	4,451	6,024	10,474
Limber pine	694,800	88,226	105,886	888,911
Lodgepole pine	6,007,524	497,275	407,890	6,912,689
Paper birch	3,482	--	--	3,482
Ponderosa pine	1,181,448	674,204	1,674,518	3,530,170
Spruce-fir	10,358,970	405,595	245,265	11,009,830
Whitebark pine	1,214,282	46,121	103,090	1,363,493
Nonstocked timberland	53,247	11,938	31,383	96,569
All types	29,725,690	2,611,470	4,645,699	36,982,860

Table 107--Net volume of trees on nonreserved productive timberland (20+) by class of timber, and softwoods and hardwoods, Wyoming, 2002

Class of timber	Softwoods	Hardwoods	Total
	Thousand cubic feet		
Sawtimber trees			
Sawlog portion	7,638,343	274,236	7,912,579
Upper-stem portion	883,232	72,980	956,212
Total	8,521,575	347,216	8,868,791
Poletimber trees	2,182,778	352,823	2,535,601
All growing-stock trees	10,704,353	700,039	11,404,392
Rough cull trees	126,163	25,448	151,610
Rotten cull trees	6,060	5,871	11,931
Live woodland tree volume	35,604	1,065	36,669
Salvable dead trees	2,597,825	177,084	2,774,909
All timber	13,470,005	909,506	14,379,511

Table 108--Net annual growth of growing stock on nonreserved productive timberland (20+) by forest type and owner group, Wyoming, 2001

Forest type	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand cubic feet			
Aspen	5,071	1,280	1,906	8,257
Blue spruce	931	--	181	1,112
Bur oak	99	264	1,427	1,791
Cottonwood	--	3	2,694	2,696
Douglas-fir	10,766	-230	1,575	12,111
Engelmann spruce	11,218	1,171	1,498	13,886
Green ash	--	154	38	193
Limber pine	1,509	919	741	3,169
Lodgepole pine	35,337	4,299	4,094	43,730
Paper birch	77	--	--	77
Ponderosa pine	3,364	4,251	11,939	19,554
Spruce-fir	23,813	2,148	1,659	27,620
Whitebark pine	1,982	541	333	2,856
Nonstocked timberland	-4,233	-17	-5,345	-9,595
All types	89,933	14,783	22,741	127,457

Table 109--Net annual growth of sawtimber (Scribner rule) on nonreserved productive timberland (20+) by forest type and owner group, Wyoming, 2001

Forest type	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand board feet			
Aspen	22,806	9,544	10,454	42,803
Blue spruce	7,135	--	759	7,895
Bur oak	106	1,073	7,124	8,303
Cottonwood	--	--	11,518	11,518
Douglas-fir	56,449	-606	7,085	62,929
Engelmann spruce	57,324	5,054	9,101	71,479
Green ash	--	124	879	1,003
Limber pine	7,371	2,184	2,063	11,617
Lodgepole pine	171,755	20,537	18,506	210,798
Paper birch	168	--	--	168
Ponderosa pine	14,088	20,678	65,236	100,001
Spruce-fir	113,062	9,199	8,442	130,703
Whitebark pine	8,959	2,343	2,189	13,491
Nonstocked timberland	-18,924	1,303	-19,539	-37,160
All types	440,298	71,431	123,818	635,547

Table 110--Annual mortality of growing stock on nonreserved productive timberland (20+) by forest type and owner group, Wyoming, 2001

Forest type	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand cubic feet			
Aspen	4,810	2,253	1,129	8,193
Blue spruce	507	--	--	507
Bur oak	280	12	315	608
Cottonwood	--	--	103	103
Douglas-fir	5,860	2,220	1,062	9,142
Engelmann spruce	4,009	16	--	4,025
Limber pine	569	459	95	1,123
Lodgepole pine	11,982	1,196	169	13,346
Ponderosa pine	3,512	789	1,635	5,937
Spruce-fir	27,370	3,040	355	30,765
Whitebark pine	2,612	--	82	2,693
Nonstocked timberland	4,633	187	5,727	10,546
All types	66,145	10,171	10,672	86,988

Table 111--Annual mortality of sawtimber (Scribner rule) on nonreserved productive timberland (20+) by forest type and owner group, Wyoming, 2001

Forest type	Owner group: National Forest	Other public	Nonindustrial private	Total
	Thousand board feet			
Aspen	14,366	6,666	523	21,555
Blue spruce	1,962	--	--	1,962
Bur oak	952	--	895	1,847
Cottonwood	--	--	218	218
Douglas-fir	21,702	10,725	4,015	36,442
Engelmann spruce	14,573	--	--	14,573
Limber pine	1,665	1,474	--	3,138
Lodgepole pine	34,161	1,775	--	35,937
Ponderosa pine	17,252	2,574	4,553	24,379
Spruce-fir	103,530	10,911	955	115,396
Whitebark pine	9,886	--	316	10,202
Nonstocked timberland	20,920	272	23,149	44,341
All types	240,969	34,398	34,624	309,990

RMRS

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