

# New Mexico's Forest Resources, 2008–2014

**Sara A. Goeking and Jim Menlove**



Goeking, Sara A.; Menlove, Jim. 2017. **New Mexico's forest resources, 2008–2014.** Resour. Bull. RMRS-RB-24. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 68 p.

## Abstract

This report presents a summary of the most recent inventory of New Mexico's forests based on field data collected between 2008 and 2014. The results presented here summarize a complete cycle of New Mexico's forest inventory, or 10 years' worth of data collection, whereas the previous report was based only on 9 years' worth of data collected under an accelerated implementation schedule between 2008 and 2012. Therefore, the results presented here are qualitatively and quantitatively similar to those in the previous report; any differences are likely due to sampling error or changes in computational procedures. The report includes descriptive highlights and tables of area, numbers of trees, biomass, volume, growth, mortality, and removals. Most results are organized by forest type or forest-type group, species group, diameter class, or owner group. New Mexico's forest land covers 24.7 million acres. Forty-three percent (10.7 million acres) of this forest land is privately owned, and another 32 percent (7.9 million acres) is administered by the USDA Forest Service. The State's most abundant forest type is pinyon/juniper woodland, which covers more than 10 million acres. Pinyon/juniper woodlands combined with juniper woodlands cover a total of 13.5 million acres, or more than half of New Mexico's forest land area. Gambel oak is the most abundant tree species by number of trees, followed by common pinyon. Ponderosa pine makes up about one-quarter of the State's total tree volume and biomass, and thus is the most abundant tree species in terms of volume and biomass. New Mexico's forests contain 17.6 billion cubic feet of net volume in trees 5.0 inches diameter and larger. Gross growth of all live trees 5.0 inches diameter and larger averaged nearly 254 million cubic feet per year. Average annual mortality totaled 166 million cubic feet per year, and net growth was therefore 88 million cubic feet per year, or 0.05 percent of the State's total wood volume per year.

---

**Keywords:** New Mexico, forest inventory, field data, trees, biomass, volume, growth, mortality, removals

---

**Top photo**—Valles Caldera National Preserve, photo by Jeremy Marshall, USFS.

**Bottom left photo**—Snow Park, Gila National Forest, photo by Juliet Wilhelm, USFS.

**Bottom right photo**—Ponderosa pine, Jemez Mountains, Santa Fe National Forest, photo by Jeremy Marshall, USFS.

## Report Highlights

### Forest Area

- New Mexico's forest land area totals 24.7 million acres.
- Unreserved forest land accounts for 94 percent of the forest land in New Mexico and totals 23.1 million acres.
- More than 17 percent, or 4.3 million acres, of New Mexico's unreserved forest land is classified as timberland and the remaining 83 percent is classified as unproductive forest land.
- Privately owned forest land totals 10.7 million acres, or 43 percent of New Mexico's total forest land area.
- About 32 percent of New Mexico's total forest land area, or 7.9 million acres, is administered by the USDA Forest Service.
- Pinyon/juniper woodlands are the most abundant forest type in New Mexico, covering over 10 million acres and accounting for 41 percent of forest area.
- The combination of all pinyon/juniper woodlands, Rocky Mountain juniper woodlands, and other juniper woodlands covers 13.5 million acres.
- Mesquite woodlands cover 3.4 million acres and are the second most widespread forest type.

### Numbers of Trees, Volume, and Biomass

- There are more than 6.5 billion live trees on forest land in New Mexico. Of these, 2.4 billion are 5.0 inches diameter or larger.
- Softwood species total nearly 4.3 billion trees, or 66 percent of all live trees.
- There are more than 1.6 billion Gambel oak trees, making this the most abundant tree species, in terms of numbers of stems, in New Mexico.
- The net volume of live trees in New Mexico on forest land totals 17.6 billion cubic feet.
- The net volume of sawtimber trees on timberland is more than 32 billion board feet.
- Growing-stock volume on timberland in New Mexico totals 7.3 billion cubic feet, or 41 percent of the total live volume on forest land. Most of this volume occurs on National Forest System lands (66 percent), with 31 percent on private lands and 3 percent on State lands.
- Ponderosa pine makes up 45 percent of New Mexico's total growing-stock volume.
- The above-ground weight for all trees on New Mexico forest land is 318 million tons of oven-dry biomass.

### Forest Growth, Mortality, and Removals

- Gross annual growth of all live trees 5.0 inches diameter and larger on New Mexico forest land totaled nearly 254 million cubic feet per year.
- Net growth of trees 5.0 inches diameter and larger totaled about 88 million cubic feet per year.
- Average annual mortality of tree 5.0 inches diameter and larger totaled about 165.7 million cubic feet per year.

- New Mexico's average annual net growth represents an average increase in net volume of 0.5 percent per year, compared to 1.6 percent per year in the 1990s.
- Per-acre mortality is higher on reserved lands than on unreserved lands, although because reserved lands represent only 6 percent of the State's forest lands, Statewide mortality and net growth are higher on unreserved lands than on reserved lands.
- Of the eight species that make up most of New Mexico's tree volume, six are experiencing gross growth that is greater than mortality.
- Commercial timber harvest in 2012 was 28.8 million board feet (Scribner). The sources of this timber were National Forest System land (44 percent), private land (28 percent), and tribal land (27 percent).
- The 2012 harvest from National Forest System lands was higher than in 1997.

### **Forest Health**

- About 57 percent of the area that burned in wildfires between 1984 and 2012 in New Mexico burned in forest land; 43 percent burned in nonforest cover types.
- Postfire seedling density is highest at plots that burned 15 to 20 years prior to measurement, while postfire sapling density continues to increase more than 20 years after fire.
- Fires that burned between 1984 and 2012 and were classified as high-severity fires resulted in an average reduction in live basal area of 87 percent.
- The damage agent with the greatest impact to live trees is disease, which was recorded for 10 percent of timber trees. The most common diseases were stem/butt rots and dwarf mistletoe.

## Authors

**Sara A. Goeking** is a Biological Scientist and a member of the Analysis Team with the Interior West Forest Inventory and Analysis Program at the U.S. Forest Service, Rocky Mountain Research Station, in Ogden, Utah. She holds a B.S. degree in Environmental Studies and an M.S. degree in Forest Ecology, both from Utah State University (contact: sgoeking@fs.fed.us, 801-625-5193).

**Jim Menlove** is an Ecologist and a member of the Analysis Team with the Interior West Forest Inventory and Analysis Program at the U.S. Forest Service, Rocky Mountain Research Station, in Ogden, Utah. He holds a B.S. degree in Biology from the University of Utah and an M.S. degree in Zoology and Physiology from the University of Wyoming, both with an emphasis in ecology.

## Acknowledgments

We extend special thanks to private landowners and tribal councils who graciously allowed our crews access to field plots located on their lands; to the dedicated field staff who worked hard to collect high quality data; to the American Recovery and Reinvestment Act (ARRA) for funding to accelerate the implementation of New Mexico's forest inventory between 2009 and 2012; and to the New Mexico Department of Energy, Minerals, and Natural Resources, particularly the State Forester, for cooperation and ARRA project management. The Rocky Mountain Research Station gratefully acknowledges the invaluable cooperation and assistance of the Southwestern Region, Forest Service, U.S. Department of Agriculture; the New Mexico State Forester and other New Mexico Energy, Minerals, and Natural Resources Department personnel; the New Mexico State Lands Office; the New Mexico Department of Game and Fish; the New Mexico State Parks Division; the Bureaus of Land Management and Indian Affairs; and the National Park Service, U.S. Department of the Interior. Todd Morgan, Colin Sorenson, Steve Hayes, and Chelsea McIver of the University of Montana's Bureau of Business and Economic Research graciously provided forest products information and reviewed parts of this report. We are very grateful for the insightful comments of reviewers from the New Mexico State Forester's Office and Region 3 of the U.S. Forest Service.

---

All Rocky Mountain Research Station publications are published by U.S. Forest Service employees and are in the public domain and available at no cost. Even though U.S. Forest Service publications are not copyrighted, they are formatted according to U.S. Department of Agriculture standards and research findings and formatting cannot be altered in reprints. Altering content or formatting, including the cover and title page, is strictly prohibited.

---



# Contents

|                                                                                                                                                                                                           |               |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| <b>Introduction.....</b>                                                                                                                                                                                  | <b>1</b>      |
| Accessing New Mexico’s Forest Inventory Data .....                                                                                                                                                        | 1             |
| History of Forest Inventory in New Mexico .....                                                                                                                                                           | 2             |
| Overview of Inventory Methods .....                                                                                                                                                                       | 2             |
| Overview of Tables in This Report .....                                                                                                                                                                   | 4             |
| <br><b>Overview of New Mexico’s Forests.....</b>                                                                                                                                                          | <br><b>4</b>  |
| Forest Land Area and Forest Ownership .....                                                                                                                                                               | 5             |
| Forest Types and Forest-Type Groups.....                                                                                                                                                                  | 6             |
| Numbers of Trees.....                                                                                                                                                                                     | 8             |
| Tree Volume and Biomass .....                                                                                                                                                                             | 9             |
| Stand-Age Class .....                                                                                                                                                                                     | 11            |
| Forest Change Components: Growth, Mortality, and Removals .....                                                                                                                                           | 12            |
| <br><b>Forest Health in New Mexico.....</b>                                                                                                                                                               | <br><b>17</b> |
| Effects of Large Fires .....                                                                                                                                                                              | 17            |
| Forest Pests, Pathogens, and Other Damage Agents .....                                                                                                                                                    | 20            |
| Understory Vegetation .....                                                                                                                                                                               | 22            |
| <br><b>New Mexico’s Forest Products Industry .....</b>                                                                                                                                                    | <br><b>24</b> |
| <br><b>Conclusions .....</b>                                                                                                                                                                              | <br><b>27</b> |
| <br><b>References .....</b>                                                                                                                                                                               | <br><b>28</b> |
| <br><b>Appendix A—Standard Forest Inventory and Analysis Terminology .....</b>                                                                                                                            | <br><b>30</b> |
| <br><b>Appendix B—Standard Forest Resource Tables .....</b>                                                                                                                                               | <br><b>37</b> |
| <br><b>Appendix C—New Mexico’s Forest-Type Groups and Forest Types, With<br/>    Descriptions and Timber (T) or Woodland (W) Designations .....</b>                                                       | <br><b>61</b> |
| <br><b>Appendix D—Tree Species Groups and Tree Species Measured in New Mexico’s<br/>    Annual Inventory, With Common Name, Scientific Name, and Timber (T) or<br/>    Woodland (W) Designation .....</b> | <br><b>65</b> |
| <br><b>Appendix E—Revised Standard Forest Resource Tables for<br/>    Growth, 2008–2012.....</b>                                                                                                          | <br><b>67</b> |



New Mexico encompasses a wide variety of environments and forest types that are valued for their scenic beauty, wood and non-timber forest products, wildlife habitat, and ecosystem services. In 2014, the Forest Inventory and Analysis (FIA) program concluded the first complete inventory cycle in New Mexico under the new annual inventory system (Gillespie 1999). This report contains highlights of the status of New Mexico's forest resources based on a full cycle of forest inventory data.

FIA is mandated to report on each State's forest resources every 5 years. New Mexico is a unique case relative to the timing of FIA reports because a partnership between the State of New Mexico and FIA (Stuever and Capuano 2014) allowed accelerated collection of 9 years' worth of inventory data between 2008 and 2012. Therefore, the previous report, *New Mexico's Forest Resources, 2008–2012* (Goeking et al. 2014) was based on 9 rather than 5 years of field data. By the end of 2014, the 10th and final year of a complete 10-year cycle was collected. This report is based on that full, 10-year cycle, in fulfillment of FIA's 5-year reporting mandate.

Most of the new information in this report is not significantly different from the results presented in the previous report. Estimates of net growth are the only statistical difference between the previous report and this one, and this difference is because FIA's net growth estimation procedures were revised in 2016 to more accurately reflect the fact that some growth estimates are based on plots that were measured during New Mexico's most recent periodic inventory of the late 1990s. Although FIA conducts an annual inventory and is therefore adding new data to its assessment of New Mexico's forest resources each year, the release of new data does not nullify any resource planning efforts that relied on the results of the previous report. Users of FIA data should note that planning efforts based on the 2008–2012 estimates are still valid, just as planning based on this report will be valid even as FIA continues to collect and analyze new data each year.

This chapter describes how to access New Mexico's forest inventory data, summarizes the history of forest inventories in New Mexico, and briefly describes FIA's inventory methods. The following chapters present an overview of traditional forest attributes measured by the FIA program, such as forest land area and tree volume; New Mexico's forest products industry; and indicators of forest health in New Mexico. The appendices include supplemental information, including a glossary of terms used in this report, standard forest resource tables, descriptions of New Mexico's forest types and forest-type groups, and a list of tree species found in New Mexico.

## Accessing New Mexico's Forest Inventory Data

FIA data are publicly available from the national FIA website at <https://www.fia.fs.fed.us/>. This site includes data downloads; online tools that allow users to perform custom queries; and documentation of FIA's field inventory protocols, database structure, and publications. For assistance with finding information on this site or with performing custom analyses, data users are encouraged to contact one of the members of the Analysis Team of the Interior West FIA Program who are listed as authors at the beginning of this report. Plot data may be downloaded in table form or summarized using a variety of online tools (<https://www.fia.fs.fed.us/tools-data/default.asp>).

In 2015, the remeasurement phase of the inventory began as plots from the 2005 subpanel were remeasured. Annual inventory summaries are updated each spring to include the most recent data available to the public. Each plot that is measured as part of the annual inventory is assigned an inventory year that corresponds to the year in which the plot was scheduled for measurement on a 10-year remeasurement cycle. Note that remeasurement periods for the first few subpanels will range from 3 years, for portions of the 2005 subpanel that were measured as late as 2012, to 10 years, for

plots that were measured during their scheduled inventory years such as plots from the 2008 subpanel and subsequent subpanels. Future estimates of growth, removals, and mortality will account for these different remeasurement periods.

## History of Forest Inventory in New Mexico

Prior to implementation of the annual forest inventory, New Mexico's forest attributes were estimated from inventories that were conducted over a period of 2 to 5 years and repeated roughly every 10 years. Because these inventories were conducted periodically, they are referred to as periodic inventories. The most recent periodic inventories of New Mexico's forest resources were completed in 2000 (O'Brien 2003) and 1993 (Van Hooser et al. 1993). Periodic inventory procedures in New Mexico are different enough from present procedures that direct comparisons between them are not recommended (see Goeking et al. 2014), and such comparisons may even produce misleading results (Goeking 2015). A detailed discussion of differences between the periodic and annual inventories in New Mexico, as well as an analysis of changes in forest attributes over time, is presented in the most recent FIA report for New Mexico (Goeking et al. 2014).

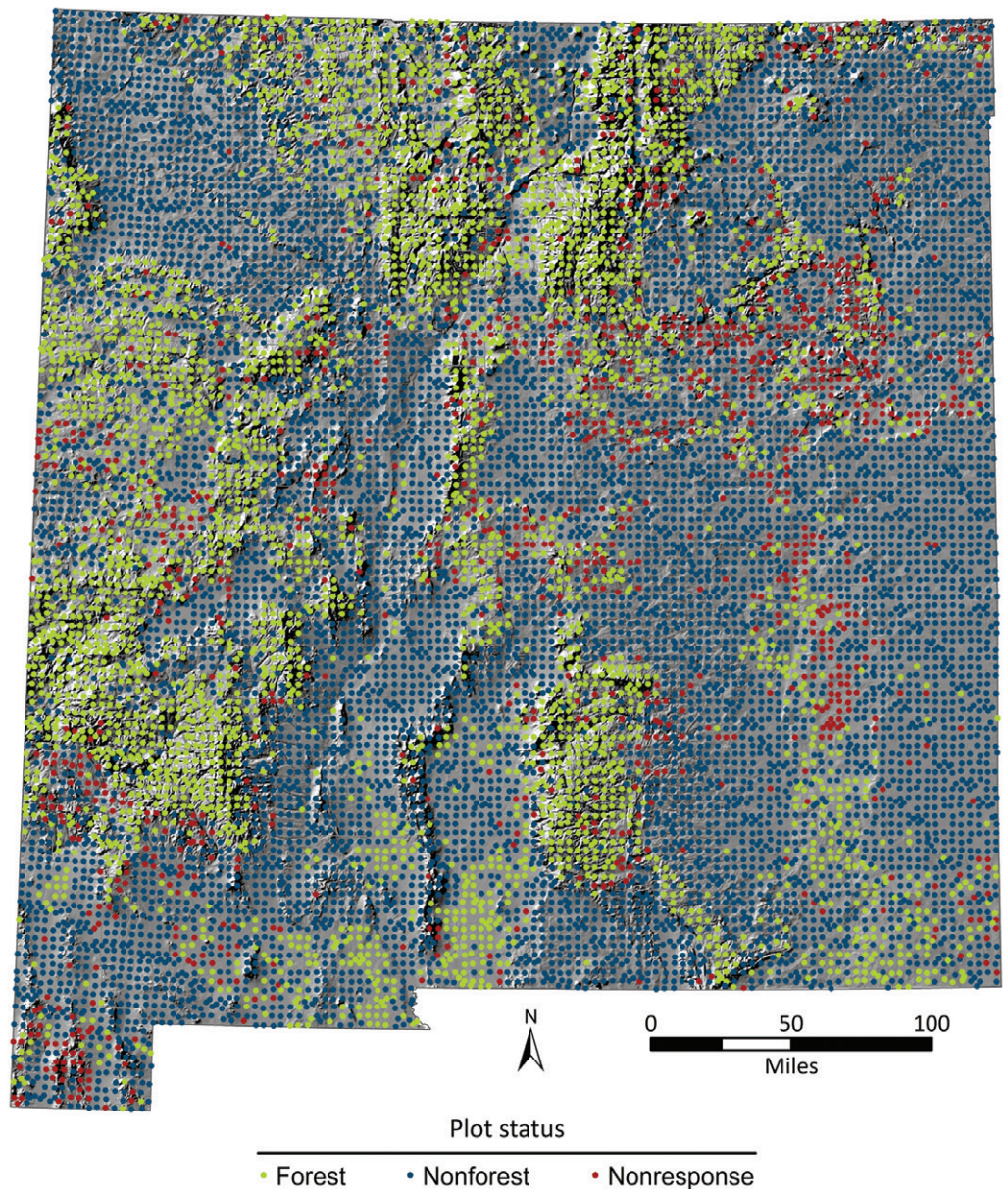
## Overview of Inventory Methods

The annual forest inventory of New Mexico's forests follows sampling procedures specified by Federal legislation and the national FIA program. In 1998, the Agricultural Research Extension and Education Reform Act, also known as the Farm Bill, mandated that inventories would be conducted throughout the forests of the United States on an annual basis. This annual system integrates a nationally consistent plot configuration with four fixed-radius subplots; a systematic national sampling design consisting of one plot per approximately 6,000 acres; annual measurement of a constant proportion of permanent plots; data or data summaries within 6 months after yearly sampling is completed; and a State summary report for every 5 years of data collection. The inventory strategy for the western United States involves measurement of 10 systematic samples, or subpanels, where one subpanel is completed each year and all subpanels are measured over a 10-year period. Each subpanel is pre-assigned to be surveyed during a specific calendar year, which is referred to as inventory year (see Appendix A for standard FIA terminology). The year in which each plot was actually surveyed is recorded as its measurement year. In most States, inventory year and measurement year are the same for the vast majority of field plots, but this does not hold true for New Mexico's annual forest inventory thus far due to the State's unique accelerated implementation schedule. FIA's statistical sampling and estimation procedures are described in more detail in Bechtold and Patterson (2005). Note that the stratified estimation protocols used in New Mexico were modified to account for plots that could not be measured due to hazardous conditions or inability to get landowner permission (Goeking and Patterson 2013).

Interior West Forest Inventory and Analysis (IWFIA) program implemented the new annual inventory strategy in New Mexico in 2008. In 2009, the State of New Mexico received funding from the American Recovery and Reinvestment Act (ARRA) to accelerate sampling and broaden the data collection effort to subpanels that would have been measured had the inventory started in 2005 (Stuever and Capuano 2014). Under this accelerated sampling, eight subpanels were completed within the 3-year period between 2010 and 2012. These eight subpanels represent inventory years 2005–2007 and 2009–2013, so their nominal inventory years are typically not the same as their measurement years. Data from these subpanels were combined with data from the 2008 subpanel, which were collected primarily in 2008 and 2009, and summarized in the previous report, *New Mexico's Forest Resources, 2008–2012* (Goeking et al. 2014). This

report includes the same panels as the previous report, with the addition of the 2014 inventory panel, which was measured during 2013 and 2014. Because the previous report included the results of data quality assessments (QA) for New Mexico's forest inventory, and because no new QA data were collected in 2014, QA results from Goeking et al. (2014) are still valid for this report and are not presented here.

The New Mexico inventory resumed a regular schedule in 2014. At the conclusion of the 2014 field season, FIA had therefore collected a full 10-year cycle of inventory data, with measurement years between 2008 and 2014 and nominal inventory years ranging from 2005 to 2014. This report is based on this complete cycle of forest monitoring data. The aggregated dataset includes a total of 13,104 plots, where 4,339 plots contained at least one forested condition, 7,676 plots were entirely nonforest, and 1,089 plots could not be measured (fig. 1).



**Figure 1**—Distribution and plot status of the 13,104 plots in one complete cycle of New Mexico's forest inventory. Plots were measured during 2008–2014; scheduled inventory years for these plots were 2005–2014. (Note: Plot locations are approximate, and some plots on private land were randomly swapped to protect landowner confidentiality.)

## Overview of Tables in This Report

Forest Inventory and Analysis produces a set of standard tables that incorporate most of the variables that are nationally consistent within the FIA program. In Appendix B, tables B1-B37 present broad-scale estimates of forest attributes based on annual forest inventory data collected in New Mexico between 2008 and 2014. These tables encompass statistics for land area, numbers of trees, wood volume, biomass (oven-dry weight), growth, mortality, and sampling errors. Table 1 is the only table that includes all land cover types, and it summarizes the proportions of sample plots that were recorded as forest, nonforest, and nonsampled (e.g., due to inaccessibility). All other tables exclude nonforest land and therefore pertain only to accessible forest land or timberland (see Appendix A for definitions). Table B37 shows percent sampling errors for area, volume, net growth, and mortality as a percentage of the estimates. Note that most of the changes that occurred after the most recent FIA report for New Mexico (Goeking et al. 2014) are smaller than the reported sampling error, which is expected given that 90 percent of the data on which this report is based were also used to produce the estimates in the previous report.

This report also contains supplemental tables within the body of the report, which are labeled consecutively as they appear (e.g., “table 1”). To avoid confusion between supplemental tables found in the body of the report and the standard FIA tables found in Appendix B or Appendix E, standard tables will always be referred to using both the Appendix and the table number (e.g., “Appendix B, table B1”).

## Overview of New Mexico's Forests

---

This chapter summarizes the current status of New Mexico's forests in terms of traditional forest attributes such as forest area and ownership, forest type, numbers of trees, tree volume and biomass, stand age, and tree growth and mortality. Some forest attributes are reported at a Statewide scale, while others are reported for specific forest land classifications. FIA uses a nationally consistent standard for defining different categories of forest land based on reserved status and productivity. These categories were originally developed for the purpose of separating forest land deemed suitable for timber production from forest land that was either not suitable or unavailable for timber harvesting activity, which includes woodland forest types. Note that these classifications do not always represent the same classification of land that may be done on individual land management units. Land managers who use other classification systems (e.g., lands suitable versus unsuitable for particular forest management actions), and want to produce FIA-based estimates of forest attributes based on their classification system, are encouraged to contact the authors of this report for assistance in constructing such estimates.

The first division of forest land is unreserved forest land and reserved forest land. Unreserved forest land is considered available for harvesting activity where wood volume can be removed for timber products. Reserved forest land is considered unavailable for any type of wood utilization management practice through administrative proclamation or legislation.

Both unreserved and reserved forest lands are further divided based on productivity. Unreserved forest land is subdivided into timberland and unproductive forests. Timberland is defined as unreserved forest land capable of producing 20 cubic feet of wood per acre per year of trees designated as a timber species. Unproductive forests, because of a combination of species' characteristics and site conditions, are not capable of producing 20 cubic feet of wood per acre per year of trees designated as a timber species (see Appendix A). Reserved forest land is also divided into productive and nonproductive forests. Some characteristics that relate to productivity can be visibly obvious, such as

the presence or absence of non-commercial species, rocky substrates, steep slopes, and high elevation. Production capability on reserved forest land may also be important for understanding reserved area management concerns as an indicator of non-timber values (e.g., their effect on visitor experience).

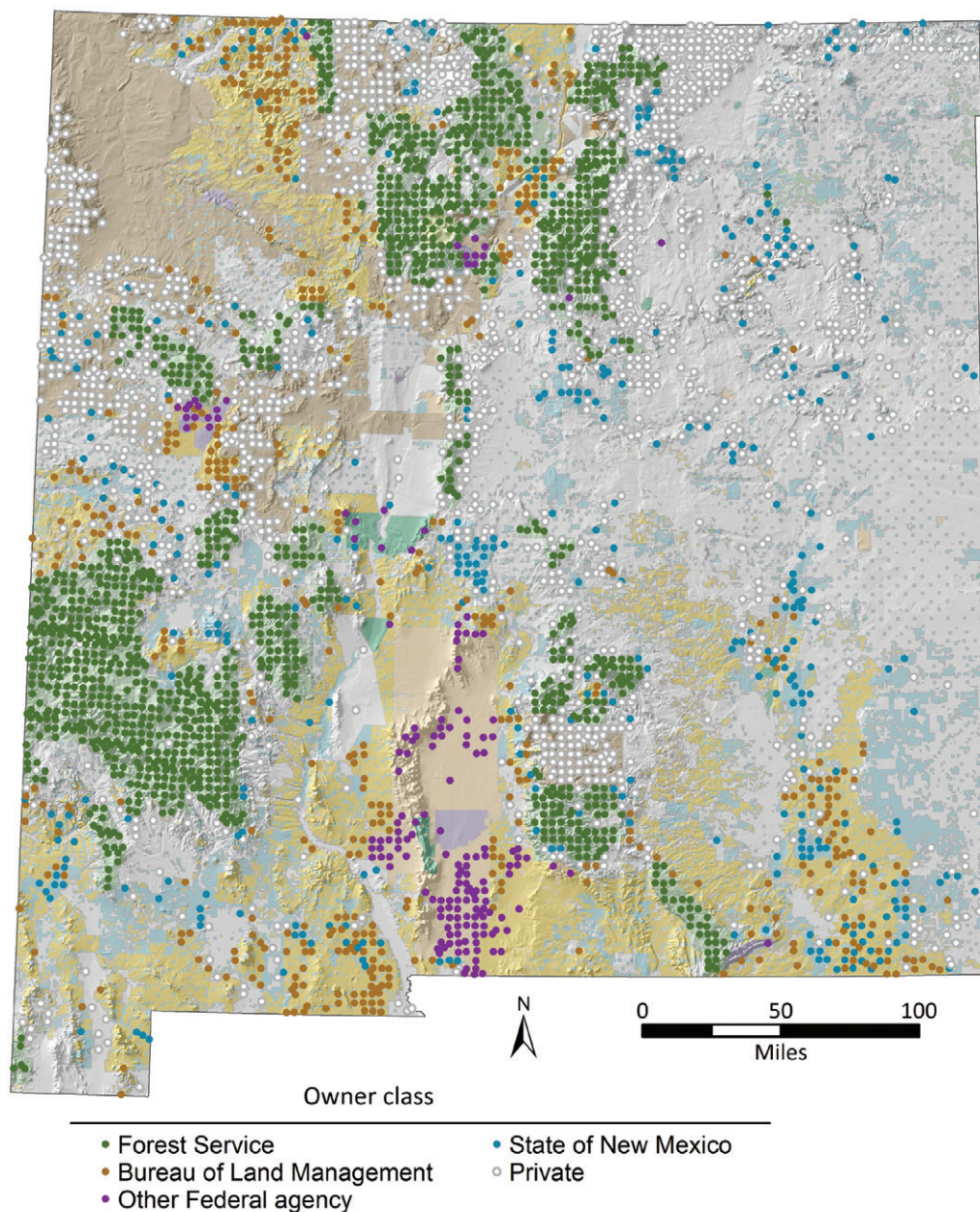
## Forest Land Area and Forest Ownership

The State of New Mexico encompasses 77.8 million acres of land area, of which 24.7 million acres (32 percent) were estimated to be forest land by FIA. Unreserved forest land accounts for 94 percent of the forest land in New Mexico and totals 23.1 million acres (Appendix B, table B2). Timberland constitutes 18 percent (4.3 million acres) of New Mexico's unreserved forest land, and the remaining 82 percent (18.9 million acres) is classified as unproductive forest land. Reserved forests account for about 6 percent (1.6 million acres) of total forest land, with nearly equal proportions of productive and unproductive forests on reserved lands.

New Mexico's forests are distributed among several ownership groups that are geographically dispersed throughout the State (fig. 2). Private landowners manage more forest land in New Mexico than any other land ownership or management group (Appendix B, table B2). Privately owned forest land totals 10.7 million acres, or 43 percent of the State's total forest land area. New Mexico's diverse array of private landowners consists of private individuals/families, corporations, tribes, and non-governmental organizations such as private associations or conservation groups. Although conservation easements cover thousands of acres of private land, all private forest land is categorized as unreserved. More than 1.4 million acres, or 13 percent of all private forest land, are classified as timberland while 9.3 million acres are classified as unproductive forest land. Average annual net growth in both productive and unproductive forests is higher overall on private lands than any other owner class (Appendix B, table B21).

New Mexico's second-largest manager of forest land is the USDA Forest Service's National Forest System (NFS), which manages about 7.9 million acres of forest land. This represents nearly 10 percent of New Mexico's total land area and 32 percent of its forest land area. NFS lands in New Mexico consist of five different National Forests and portions of several National Grasslands. Nearly 85 percent, or 6.7 million acres, of the forest land managed by NFS is classified as unreserved forest land. About 40 percent of all unreserved forest land managed by NFS, or 2.7 million acres, is further classified as unreserved timberland, while the remaining 60 percent is classified as unproductive, unreserved forest land (Appendix B, table B2). The total net volume of live trees (Appendix B, table B12), as well as the average annual tree mortality (Appendix B, table B25), is higher on NFS lands than any other owner class.

Other public agencies managing large portions of New Mexico's forest land include the State of New Mexico, the Bureau of Land Management (BLM), the Departments of Defense and Energy (DOD/DOE), the National Park Service (NPS), and the U.S. Fish and Wildlife Service (FWS). The BLM manages 2.9 million acres, or 12 percent of the State's forest land, and the DOD/DOE manages about 701,972 acres, or 3 percent. Another 130,224 acres are managed by the NPS, and 55,137 acres are managed by the FWS. The State of New Mexico manages 2.2 million acres, or 9 percent of the forest land in New Mexico. Nearly all of New Mexico's State-managed forest land is classified as unreserved, and 136,761 acres qualify as unreserved timberland. The greatest percentage of State land is managed by the New Mexico State Land Office, although the New Mexico Department of Game and Fish and the New Mexico State Parks Division also hold substantial properties.



**Figure 2**—Distribution of inventory plots on forest land by owner class in one complete cycle of New Mexico’s forest inventory. Plots were measured during 2008–2014; scheduled inventory years for these plots were 2005–2014. (Note: Plot locations are approximate, and some plots on private land were randomly swapped to protect landowner confidentiality.)

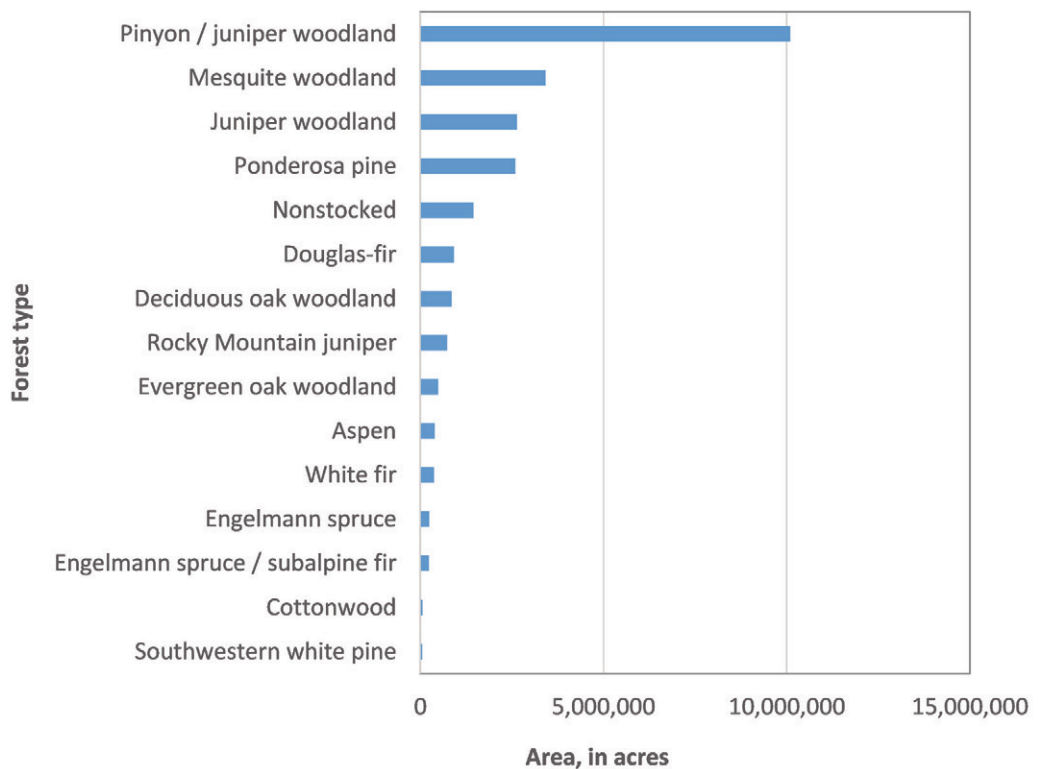
## Forest Types and Forest-Type Groups

Forest type is a classification of forest land based on the species forming a plurality of living trees growing in a particular forest. The distribution of forest types across the landscape is determined by factors such as climate, soil, elevation, aspect, and disturbance history. Forest types may differ with respect to diversity, structure, and successional stage. The loss or gain of a particular forest type over time can help assess the impact of major disturbances related to fire, weather, climate, insects, disease, and human-caused disturbances such as timber harvesting or ecosystem restoration.

FIA's forest type classification follows the forest cover types published by Eyre (1980) for the Society of American Foresters (Hansen and Hahn 1992). For each condition sampled on an FIA plot, forest types are determined using a computer algorithm that uses data from individual trees to calculate stocking by species (O'Connell et al. 2016). Forest type names may be based on a single species or groups of species, and forest types are aggregated into forest-type groups to simplify interpretation of large-scale forest trends. Because this is a national classification, some forest types have names that may include species that do not occur everywhere the forest type occurs (e.g., fir/spruce/mountain hemlock). These forest-type groups are distinct and unrelated to the groups and macrogroups developed within the Natural Vegetation Hierarchy of the U.S. National Vegetation Classification (USNVC 2016).

New Mexico's forests contain 11 forest-type groups that are further classified into 21 distinct forest types, all of which are described in Appendix C. Some forest-type groups contain only one forest type, while other forest-type groups include several individual forest types. An example of a forest-type group with multiple forest types is the pinyon/juniper forest-type group, which consists of the Rocky Mountain juniper forest type, the pinyon/juniper woodland forest type, and the juniper woodland forest type. The distributions of forest types as well as individual tree species vary among the ecological provinces (Goeking et al. 2014); note that FIA uses the modified ecological units delineated by Cleland et al. (2007).

New Mexico's most abundant forest-type group is the pinyon/juniper group, which covers nearly 13.5 million acres and accounts for 55 percent of forest land in the State (Appendix B, table B3). Within this forest-type group, the pinyon/juniper forest type is most abundant (10.1 million acres; fig. 3), followed by the juniper woodlands forest



**Figure 3**—Area of land by forest type in New Mexico, based on one complete cycle of inventory data measured during 2008–2014. The following forest types are not shown because they occupy fewer than 50,000 acres and bars are not visible at this scale: blue spruce, limber pine, bristlecone pine, other exotic hardwoods, intermountain maple woodland, and other hardwoods.

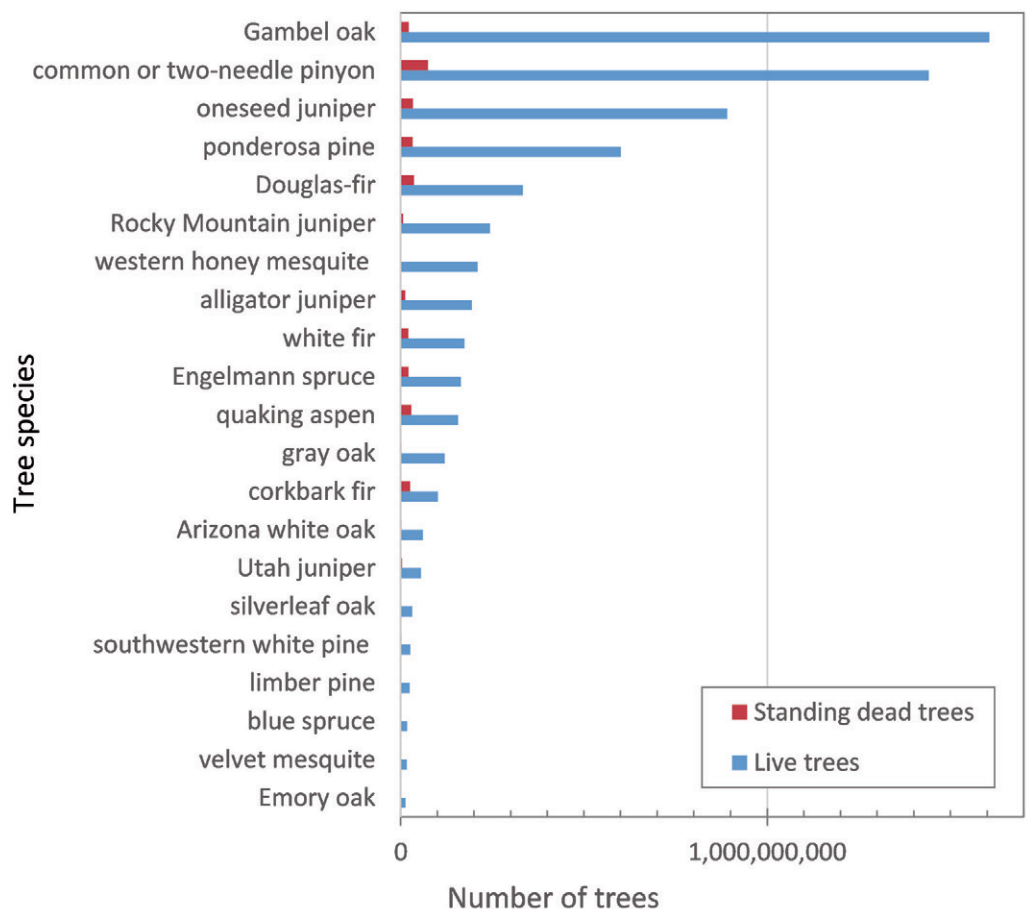
type (2.6 million acres) and the Rocky Mountain juniper forest type (736,806 acres). New Mexico's second most abundant forest-type group is the woodland hardwoods group, which comprises 4.8 million acres, or 19 percent of the State's forest land. This forest-type group includes the mesquite forest type (3.4 million acres; see fig. 3), the deciduous oak woodland forest type (862,968 acres), and the evergreen oak woodland forest type (491,720 acres). The ponderosa pine forest-type group is New Mexico's third most abundant group, covering 2.6 million acres and nearly 11 percent of the State's forest land. Next in order of areal extent are nonstocked forests (1.5 million acres), the Douglas-fir forest-type group (923,052 acres), the fir/spruce/mountain hemlock group (887,318 acres), the aspen/birch group (395,086 acres), and the other western softwoods group (102,721 acres). New Mexico's forests include three other forest-type groups that collectively occupy less than 100,000 acres (Appendix B, table B3): the elm/ash/cottonwood, other hardwoods, and exotic hardwoods forest-type groups.

## Numbers of Trees

Estimates of the numbers of trees are beneficial to a variety of silvicultural, forest health, and habitat management applications. These estimates are typically combined with information about the size and species of the trees to provide meaningful summaries of forest dynamics and stand structure. Stand density, in terms of trees per acre, typically decreases as stands mature. Younger forest stands usually consist of large numbers of small-diameter trees, whereas older forest stands contain larger-diameter trees and fewer trees per acre. FIA classifies individual tree species into species groups and also categorizes each species and species group as either softwood or hardwood (Appendix D). FIA's field procedures include decision rules for when to measure a stem as an individual tree versus as part of a multi-stemmed individual tree, and stems are treated as distinct individuals unless the connections among stems are evident (USDA Forest Service 2006, 2011). Numbers of trees here represent the number of distinct individuals recorded using these field procedures.

New Mexico's forest lands contain an estimated 6.5 billion live trees 1 inch in diameter or larger (Appendix B, table B10), 2.4 billion trees 5 inches in diameter or larger, and 329 million dead trees 5 inches in diameter or larger. The five most abundant tree species in New Mexico, in decreasing order of numbers of trees, are Gambel oak, common pinyon, oneseed juniper, ponderosa pine, and Douglas-fir (fig. 4). Gambel oak alone constitutes 25 percent (1.6 billion trees) of New Mexico's total number of trees. Softwood species total 4.3 billion trees or 66 percent of the State's live trees (Appendix B, table B10). Almost 51 percent of live softwood trees are under 5.0 inches in diameter and 6 percent are 15.0 inches and larger in diameter. The western woodland softwoods species group accounts for 2.8 billion live trees, or 43 percent of all trees. Common pinyon and oneseed juniper are the most abundant tree species in this group (1.4 billion and 891 million live trees, respectively), which also includes, in decreasing order of abundance: alligator juniper, Rocky Mountain juniper, Utah juniper, Mexican pinyon, Pinchot juniper, redberry juniper, and Arizona pinyon. The second most abundant softwood species group is the ponderosa and Jeffrey pine group with 600 million trees, all of which are ponderosa pines. Third and fourth in softwood abundance are, respectively, the Douglas-fir species group with 333 million trees and the true fir species group with 276 million trees. The true fir species group consists of white fir, corkbark fir (which is considered separately from subalpine fir by FIA), and a very small amount of subalpine fir.

Hardwood species account for 2.2 billion trees, or 34 percent of New Mexico's live trees. The western woodland hardwoods species group comprises the majority (92 percent) of the hardwood species occurring in New Mexico. The western woodland hardwood species group also includes Gambel oak, which constitutes about two-thirds of



**Figure 4**—Numbers of live and standing dead trees by species in New Mexico, measured during 2008–2014.

the trees in this group, in addition to bigtooth maple, honey mesquite, velvet mesquite, Arizona white oak, Emory oak, Mexican blue oak, silverleaf oak, gray oak, and netleaf oak. The second most abundant hardwood species group is the cottonwood and aspen species group, which consists of 157 million quaking aspen and much smaller numbers of Fremont cottonwood and narrowleaf cottonwood. Most aspen trees in New Mexico are concentrated in the smaller diameter classes. Forty-eight percent of all live aspen stems are between 1 and 5 inches in diameter, and more than half of these are between 1 and 3 inches.

There are a total of 329 million standing dead trees in New Mexico. The greatest number by species is common pinyon, of which there are more than 74 million standing dead trees (fig. 4). The next most abundant species, in terms of standing dead trees, are Douglas-fir (nearly 36 million), oneseed juniper (nearly 34 million), ponderosa pine (nearly 33 million), quaking aspen (nearly 29 million), and corkbark fir (nearly 26 million).

## Tree Volume and Biomass

The amount of cubic-foot volume of wood in a forest can be an important indicator of forest health, particularly when volume decreases due to naturally occurring mortality rather than tree harvest or removal. Trends in tree volume are also important for determining the sustainability of current and future wood utilization. The forest products industry and forest managers are interested in knowing the tree species composition and size distribution, as well as the geographic location and ownership status, of available

wood volume. FIA's estimates of gross and net volume include only the merchantable portion or sawlog portion (e.g., cubic-foot or board-foot) of live trees 1.0-inches in diameter and larger. Net tree volumes are computed by deducting rotten, missing, or form defects from gross volume.

Net tree volume is reported below for several categories of trees: net volume of all live trees, net volume of growing-stock trees, net volume of sawtimber, and net volume of sawlogs. All of these terms are defined below as well as in Appendix A. Tree biomass estimates are based on gross volumes and describe above-ground tree weight (oven-dry) by various components (merchantable bole and bark, tops and limbs, saplings). This method of estimating tree biomass is referred to as the component ratio method, and it is described by Woudenberg et al. (2010; see Appendix J of that document). Note that FIA's biomass estimates are produced in units of oven-dry weight; estimates of bone-dry weight can be calculated using the following conversion: one bone-dry unit equals 2,400 pounds of oven-dry wood (Morgan et al. 2006).

Tables B12 through B16 (Appendix B) show the net volume of all live trees 5.0 inches diameter and larger on New Mexico's forest land, by various categories. The net volume of all live trees on New Mexico's forest land totals 17.6 billion cubic feet (Appendix B, table B12). More than 56 percent of the live volume, or 9.9 billion cubic feet, is located on lands managed by the NFS. About 22 percent of the NFS-managed volume exists on reserved lands and is thus unavailable for harvest. Privately owned forests contain 35 percent of the State's total live volume, or 6.1 billion cubic feet. Five percent, or 0.8 billion cubic feet, exists on lands managed by various Federal agencies other than the National Forest System, and another 0.8 billion cubic feet is on lands managed by State and local government. On a Statewide basis, unreserved forests include approximately equal volumes on timberland and unproductive forest land. The total live volume on unreserved timberland is 7.6 billion cubic feet.

Live-tree volume can also be reported by forest-type group and tree species group. The pinyon/juniper forest-type group contains more live-tree volume than any other forest-type group (Appendix B, table B13). Similarly, the western woodland softwoods species group, which includes all of New Mexico's pinyon and juniper species, contains more live-tree volume than any other species group, and includes 38 percent of the State's live-tree volume (Appendix B, tables B14 and B15). When the volumes of individual tree species rather than species groups are compared, ponderosa pine has more volume than any other species with 4.6 billion cubic feet Statewide.

Some of the tables in Appendix B classify tree volume with respect to the availability of timber volume for harvest, which is affected by three primary factors: reserved status, productivity, and merchantability. Timberland is defined as unreserved forest land capable of producing in excess of 20 cubic feet per acre per year of wood at culmination of mean annual increment. Merchantability refers to growing-stock trees, which are at least 5 inches in diameter and contain, or have the potential to produce, an 8-foot sawlog that is reasonably free of defects. Therefore, growing-stock volume on timberland represents the amount of timber that is potentially available for harvest. The net volume of growing-stock trees on timberland in New Mexico totals 7.3 billion cubic feet (Appendix B, table B17), or 41 percent of the total live volume on forest land. Note that pinyon and juniper species are not considered to be timber species, so they are not included in the estimates of growing-stock volume and sawtimber volume that are presented below and in tables B17–B20 (Appendix B).

The distribution of growing-stock volume varies by species or species group and also by owner class (Appendix B, table B18). The majority of New Mexico's growing-stock volume exists on NFS lands (5 billion cubic feet, or 66 percent of total growing

stock). More than 2.2 billion cubic feet (31 percent) occur on privately owned lands. State-managed lands contain 210 million cubic feet of growing stock (3 percent). Across all owner classes, 65 percent of the State's growing-stock volume is composed of ponderosa pine and Douglas-fir. Ponderosa pine constitutes 45 percent of New Mexico's growing-stock volume, or 3.3 billion cubic feet, and Douglas-fir contains 20 percent, or 1.5 billion cubic feet (Appendix B, tables B17 and B18). The true fir species group makes up 12 percent (879 million cubic feet) of the State's growing stock, Engelmann and other spruces represent roughly 10 percent, and the cottonwood and aspen species group represents another 10 percent.

Live volume is also reported for sawtimber trees, which are defined as softwood trees 9.0 inches in diameter or larger, or hardwood trees 11.0 inches in diameter or larger (International ¼-inch rule). The net volume of sawtimber trees on timberland totals 32.3 billion board feet (Appendix B, table B19). Ponderosa pine represents 48 percent of the State's sawtimber volume; ponderosa pine and Douglas-fir combined make up 68 percent of total sawtimber volume.

The total weight of oven-dry above-ground biomass on New Mexico's forest land is 318 million tons, 66 percent (209 million tons) of which exists on public lands (Appendix B, table B29). Although biomass is typically sold by green weight, the water content of wood is highly variable geographically, seasonally, and even across portions of a single tree. Therefore, live-tree inventory estimates of green biomass may be unreliable or even misleading. In contrast, oven-dry weight does not change due to fluctuations in tree water content.

## Stand-Age Class

The age structure of forest land provides insight into prospective shifts in stand structure and composition over time. On every FIA plot that samples forest land and includes suitable trees for increment core extraction, stand age is estimated based upon the average age of only those trees that fall within the calculated stand-size category based on stocking by size class. For example, suppose an FIA plot sampled a softwood forest type where about 30 percent of the live trees were in the large diameter stand-size class (trees at least 9.0 inches d.b.h. and larger) and 70 percent were in the medium diameter size class (trees between 5.0 and 9.0 inches d.b.h.). The stand would be classified as a medium diameter stand-size class, and therefore only the medium size trees would be used in determining stand age.

There are limitations to collecting data for stand age computation. Repeatable measurements of increment cores are difficult to collect from certain tree species, particularly woodland species or those that may be very long-lived. Stand age may not accurately depict the age structure of uneven-aged stands, which encompass multiple age classes. Stand ages are difficult to accurately determine for stands that are predominated by small-diameter tree species such as Gambel oak trees. Stand ages are not assigned to nonstocked conditions, which are stands that contain less than 10 percent stocking of live trees because of disturbance.

Table B6 (Appendix B) shows the area of forest land, by age class and forest-type group, with 20-year intervals representing stand-age classes. Nearly half of New Mexico's forest land, or 12 million acres, is between 60 and 140 years of age. Stands between 80 and 100 years of age represent the largest single 20-year age class and comprise 3.7 million acres, or 15 percent of New Mexico's forest land area. Forests younger than 60 years cover 5.7 million acres, while forests older than 140 years cover 5.6 million acres. About 12 percent of New Mexico's forest land, or 2.9 million acres, is in stands less than 20 years of age and 6 percent, or 1.4 million acres, is over 200 years of age.

As noted in Goeking et al. (2014), there is a considerable difference in stand age distribution among the major forest-type groups in the New Mexico. Growth and mortality also vary with respect to stand age, as discussed in the following section.

## **Forest Change Components: Growth, Mortality, and Removals**

Forest vigor, sustainability, and timber supply are often assessed by what are collectively referred to as forest change components: growth, mortality, and removals. The relationship among these three change components quantifies the change in tree volume over time. Growth is typically expressed as net annual growth and is defined as the gross, or total, average annual growth in tree volume minus the volume lost through mortality and removals. Mortality is the average annual net volume of trees dying over a given time period and excludes the volume removed through harvesting. Tree mortality often occurs at low and predictable rates due to a combination of insects, disease, drought, suppression by overstory trees, or advanced tree age. Occasionally, highly concentrated and localized losses occur due to insect and disease epidemics, wildfire, or severe weather events. Removals represent the net volume of growing-stock trees removed from the inventory by harvesting or other cultural operations (such as timber-stand improvement) or by land clearing.

### **Methods**

The three components of forest change—growth, mortality, and removals—are typically analyzed using measurements of the same plot at two points in time. It is possible, however, to also estimate growth and mortality rates based on a single inventory, as described below. In contrast, removals cannot be reliably estimated without having two measurements of the same set of plots. The New Mexico inventory began remeasurement in 2015 and will have a sufficiently large sample of remeasured plots for estimating removals in 2020. In the meantime, recent removals can only be estimated using information about the amount of wood cut and processed by the forest products industry (Goeking et al. 2014; Sorenson et al. 2016). Due to this difference in analysis method, only growth and mortality are reported here. For more information on removals, see Sorenson et al. (2016) or the section below on New Mexico's forest products industry, which summarizes the results of Sorenson et al. (2016).

In New Mexico, the procedures used to estimate tree growth and mortality depended on the remeasurement status of the plot. A remeasured or paired plot refers to a plot where a periodic inventory plot was established in the previous inventory (time 1), typically between 1998 and 2000, and during the annual inventory measurement (time 2) when the field crews were able to locate the original plot and account for all trees measured previously. In most cases, the previous and current plots are co-located. About 10 percent of all plots that sample forest land in New Mexico were remeasured, so the same trees were measured at two points in time. For trees that were alive at time 1 and time 2, growth is calculated based on the change in volume over the time interval between plot visits. Mortality volume is based on the volume of any tree that was alive at time 1 but dead at time 2. The time interval between remeasured plot visits in New Mexico varied between 8 and 16 years with an average interval of about 13 years. In contrast to remeasured or paired plot measurements, a new plot is a plot established at locations where there was no previous inventory plot. On new plots, annual growth is estimated from a sample of increment core measurements based on the previous 10 years of radial growth. Mortality is estimated from trees that were deemed to have died less than 10 years prior to measurement.

## Results

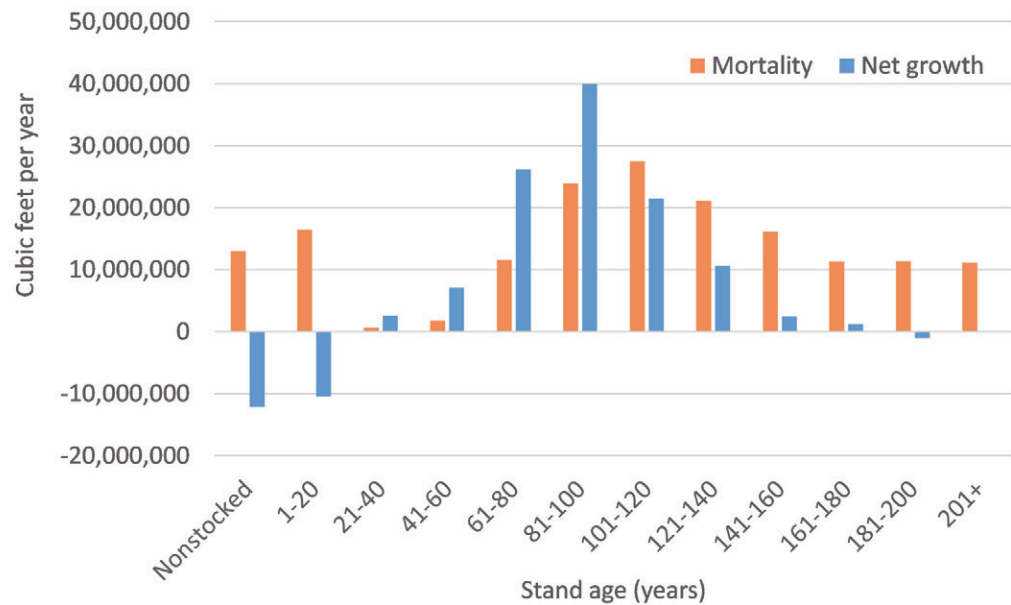
In 2016, the Interior West FIA program revised its algorithm for calculating net growth on remeasurement plots. The updated estimates for net growth during 2008–2012 are presented in Appendix E, tables E1–E4. These tables correspond to the estimates for net growth during the current reporting period, 2008–2014, as shown in Appendix B, tables B21–B24. The results presented in this section focus on differences detected since the previous report on New Mexico’s forest resources, which represented forest conditions during the years 2008–2012 (Goeking et al. 2014).

The annual estimate of gross growth of all live trees 5.0 inches diameter and greater on forest land in New Mexico totaled nearly 254 million cubic feet. Because net growth is calculated as gross growth minus mortality, gross growth is equal to the total net growth reported in Appendix B, tables B21–B23, plus the total mortality reported in Appendix B, tables B25–B27. Gross growth for the previous reporting period, 2008–2012, was also about 254 million cubic feet per year (see Appendix B, tables B25–B27 in Goeking et al. 2014; and Appendix E, tables E1–E4 of this report). Gross growth represents the sum of growth on all survivor and ingrowth trees. Survivor trees include both (1) live trees 5.0 inches and larger in diameter at time 1 and still alive at time 2 on remeasured plots, and (2) live trees determined to be 5.0 inches and larger in diameter 10 years prior to the current measurement on new plots. Ingrowth trees are live trees 5.0 inches and larger in diameter that grew over the 5.0-inch threshold between time 1 and time 2 on remeasured plots or during the previous 10 years on new plots.

Although gross growth did not change between the two reporting periods, average annual mortality and therefore net growth have changed slightly. The average annual mortality of trees 5.0 inches and larger in diameter was 165.7 million cubic feet in 2008–2014 (Appendix B, tables B25–B27), compared to 165.1 million cubic feet in 2008–2012 (Goeking et al. 2014; Appendix B, tables B25–B27). Net annual growth in 2008–2014 was 87.8 million cubic feet (Appendix B, tables B21–B24), compared to 88.9 million cubic feet in 2008–2012 (Appendix E, tables E1–E4). The differences between the 2008–2012 estimates and the current 2008–2014 estimates show a 0.4 percent increase in annual mortality and a 1.2 percent decrease in annual net growth. However, these differences are small relative to the sampling errors for annual net growth and mortality, which are greater than 10 percent. Thus, the increase in mortality and associated decrease in net growth may be attributed to year-to-year sampling error and does not definitively show changes in growth or mortality over time. If larger magnitudes of change are observed in the next few years, and these changes exceed FIA’s calculated sampling error for growth and mortality, this may indicate an actual increase in mortality rather than an artifact of year-to-year sampling error.

The 87.8 million cubic feet of net annual growth in New Mexico signifies an inventory of live trees that is increasing annually in the absence of trees removed from human-caused activities. The annual increase is relatively small, however; net annual growth as a percentage of net volume of all live trees 5.0 inches and larger in diameter (see Appendix B, table B12) averages only 0.5 percent per year. For comparison purposes, O’Brien (2003) reported a total net volume in New Mexico of 15,979 million cubic feet and annual net growth of 259 million cubic feet per year, which equates to a net annual increase of 1.6 percent.

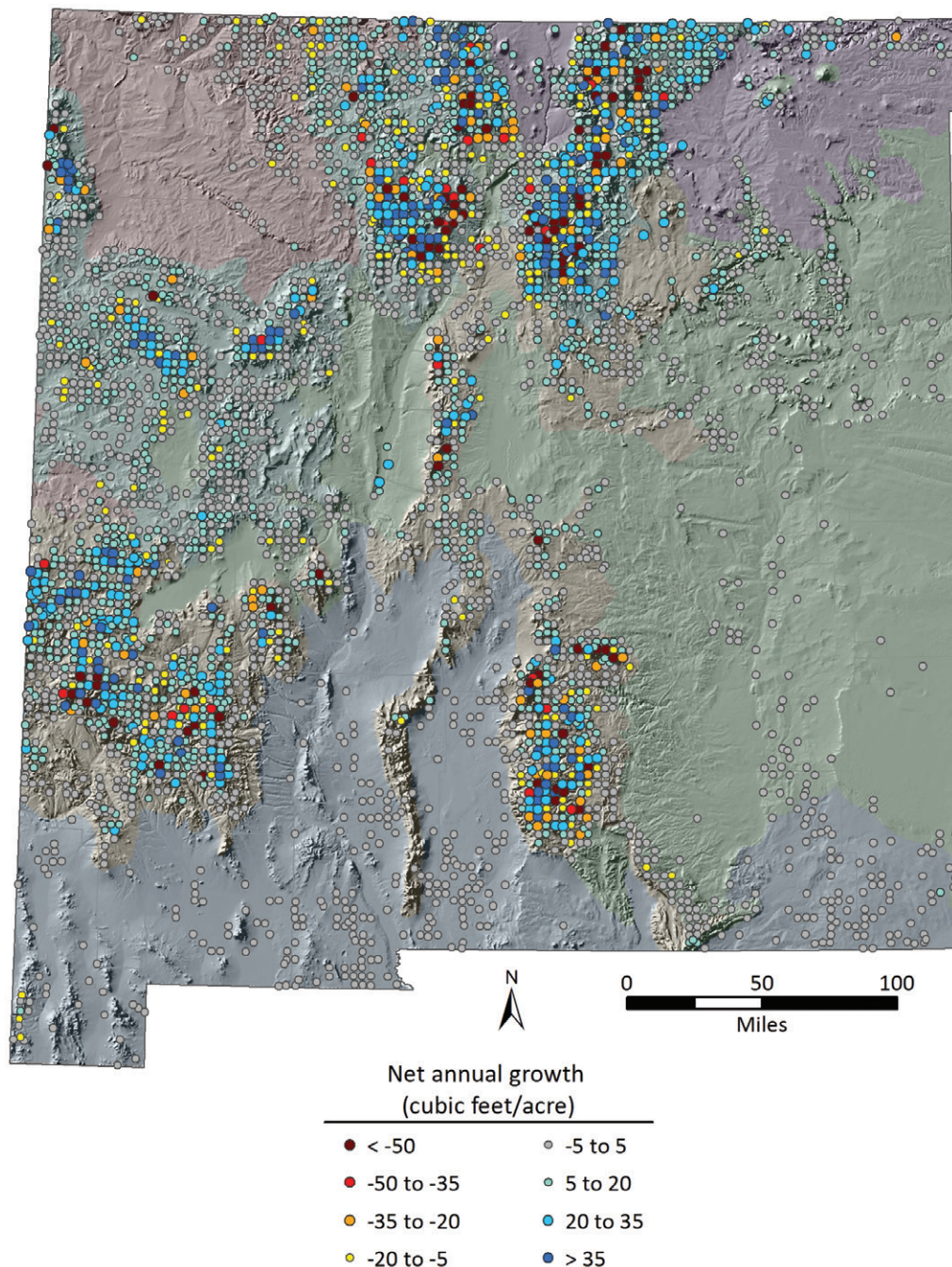
Net growth and mortality typically vary by stand age, owner group, reserved status, forest type, and tree species. Figure 5 shows that nonstocked and very young stands have negative net growth; this is expected because typically these stands represent areas that have recently been disturbed. Average annual net growth is highest for stand ages between 80 and 100 years. Beyond 100 years, average annual net growth drops dramatically and decreases with increasing stand age. Similarly, average annual mortality is highest for stands older than 100 years.



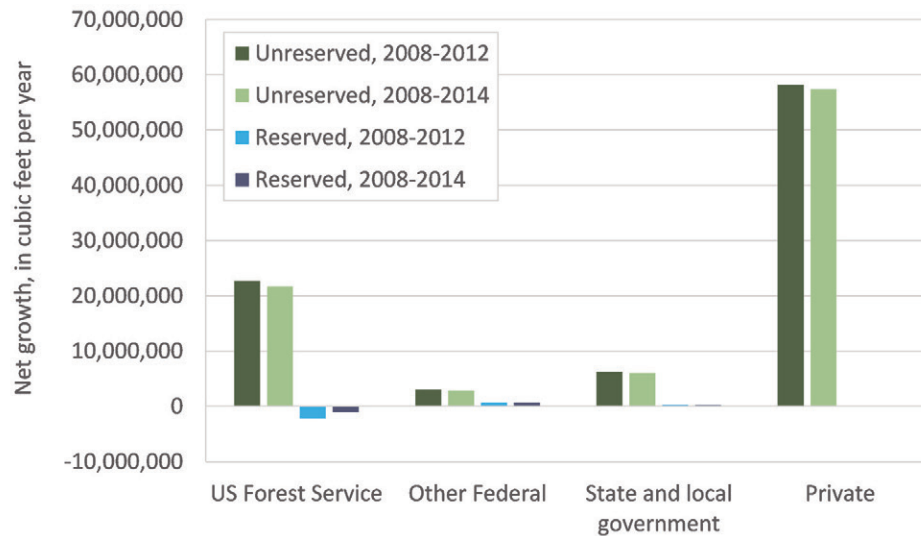
**Figure 5**—Net annual growth and mortality on forest land by stand age class, New Mexico, 2008–2014.

At a Statewide scale, average annual net growth was positive (i.e., gross growth exceeds mortality) on all owner groups (Appendix B, table B21). In figure 6, the map of net annual growth at individual plots shows that plots with large values of net growth, whether positive or negative, are dispersed throughout the State. Some plots with large negative net annual growth are clustered, representing areas affected by major disturbances such as fires. Average annual mortality was highest on NFS lands, with almost 121 million cubic feet per year of mortality (Appendix B, table B25). Both net growth and mortality were higher on unreserved lands than on reserved lands such as National Parks and Wilderness areas (figs. 7 and 8). However, mortality on a per-acre basis was much higher on reserved lands than on unreserved lands (Goeking et al. 2014); the pattern in figures 7 and 8 partly reflects the fact that there is so much more unreserved land than reserved land in New Mexico. Neither net growth nor mortality changed appreciably between the 2008–2012 reporting period and the current 2008–2014 reporting period (figs. 7 and 8). By forest-type group, the pinyon/juniper and ponderosa pine forest-type groups had the highest net growth (Appendix B, table B22). These groups also had high mortality, as did the Douglas-fir and fir/spruce/mountain hemlock groups (Appendix B, table B26).

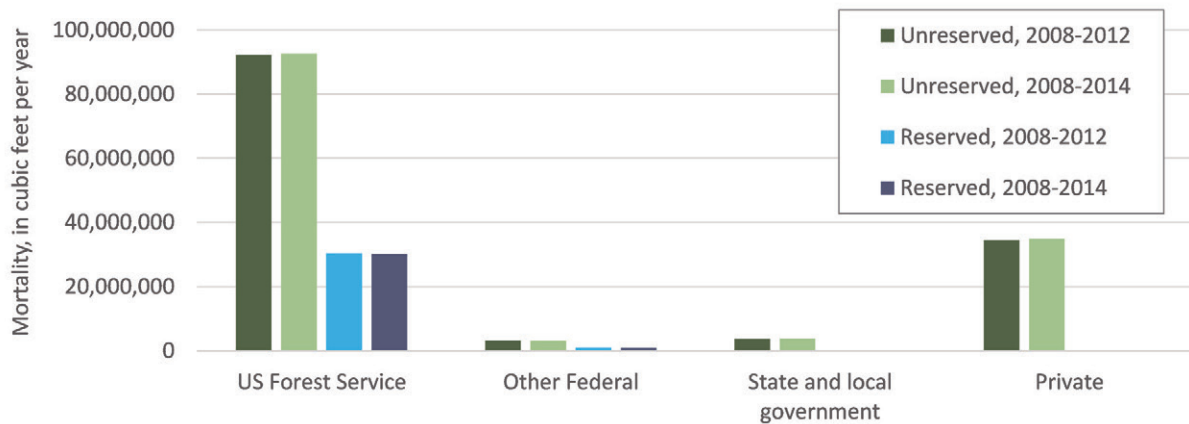
Figure 9 illustrates the relationship between average annual net growth and mortality for the eight major inventory species, or those with the greatest total volume, in New Mexico. White fir and Engelmann spruce recorded negative net growth, while net growth is positive for the other six species. Quaking aspen exhibited lower net growth for the 2008–2014 period than for 2008–2012, although net growth was positive during both periods. Relative to the 2008–2012 reporting period, net growth increased slightly for three of the eight species (alligator juniper, Douglas-fir, and ponderosa pine), and mortality increased for four species (white fir, quaking aspen, Engelmann spruce, and common pinyon).



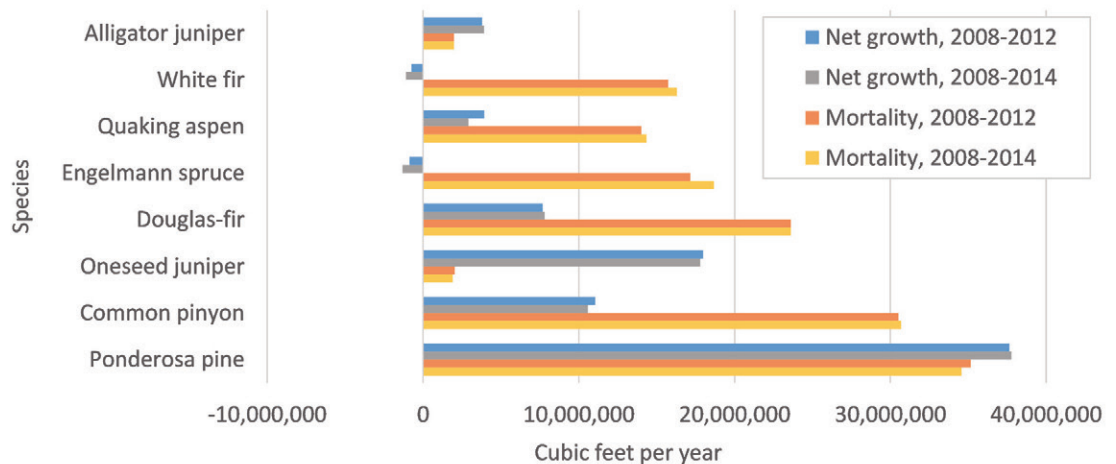
**Figure 6**—Net annual growth at inventory plots on forest land in New Mexico, measured during 2008–2014. Negative values indicate plots where mortality exceeded gross growth. (Note: Plot locations are approximate, and some plots on private land were randomly swapped to protect landowner confidentiality.)



**Figure 7**—Average annual net growth on forest land by owner group and reserved status, New Mexico, 2008–2012 and 2008–2014. Note that all private lands are considered unreserved.



**Figure 8**—Average annual mortality on forest land by owner group and reserved status, New Mexico, 2008–2012 and 2008–2014. Note that all private lands are considered unreserved.



**Figure 9**—Net annual growth and mortality on forest land by eight major tree species, New Mexico, 2008–2014.

## Forest Health in New Mexico

---

New Mexico's forests have experienced a combination of drought, widespread insect epidemics, and wildfire over the past decade. This chapter discusses the effects of large fires, forest pests, pathogens, and other damage agents, and it also summarizes broad-scale patterns of understory vegetation.

### Effects of Large Fires

Fire is an important disturbance that influences the structure and dynamics of New Mexico's forests. In some forest types, such as ponderosa pine, fire can maintain open stands and stimulate the growth of grasses and forbs in the understory. Throughout the Interior West, a century of fire suppression has led to a buildup of fuels and stand densification, which may lead to uncharacteristically intense fires in some areas (Reinhardt et al. 2008). This trend is even more pronounced in the ponderosa pine forests of the southwestern United States, where fire suppression has led to denser stands, which are composed of smaller-diameter trees, as well as diminished cover of understory grasses (Covington et al. 1997).

Many large wildfires have burned in New Mexico during and prior to the period covered by this report. Some FIA plots within fire boundaries were measured before and some were measured after the fires occurred. Some fire perimeters contain both prefire and postfire plots, while others may contain only prefire or only postfire plots. Prefire plots represent the original conditions in areas that later burned, while only postfire plots provide insight into the short-term effects of fire. However, analyzing plot data as prefire or postfire introduces some temporal bias. These limitations on analysis will be reduced as more remeasurement data are acquired. In the meantime, there are some general analyses that can be conducted with the current data to investigate the effects of large fires.

To relate FIA plot data to recent fires, we used data from the Monitoring Trends in Burn Severity (MTBS) program, which delineates the perimeters and severities of large wildland fires across all lands of the United States, including wildfire, wildland fire use, and prescribed fire. In western States such as New Mexico, MTBS delineates all fires larger than 1,000 acres (Eidenshink et al. 2007). The previous report on New Mexico's forest resources (Goeking et al. 2014) briefly summarized an analysis of FIA plot data for plots that were measured during 2008–2012 and that fall within MTBS's fire perimeters for fires that burned between 1984 and 2011. That analysis showed that 325 fire perimeters from 275 different fire complexes burned in New Mexico during 1984–2011. The average size of those fires was 16,300 acres, although the acreage varied widely, with the largest fire being the 151,000-acre Las Conchas fire (Goeking et al. 2014).

After the MTBS program released additional data for the 2012 fires, we conducted additional analyses to estimate the percentage of forest versus nonforest that burned. A total of 1.5 million acres burned at least once in New Mexico between 1984 and 2011, and some areas burned multiple times. This total area burned represents about 2 percent of New Mexico's total land area. Burned areas include 617 FIA plots, and 285 of those plots were forested. Based on the forest/nonforest status of those plots, we estimate that New Mexico's total burned area is about 57 percent forested, with the remaining 43 percent occurring in nonforest cover types (Shaw et al. 2017).

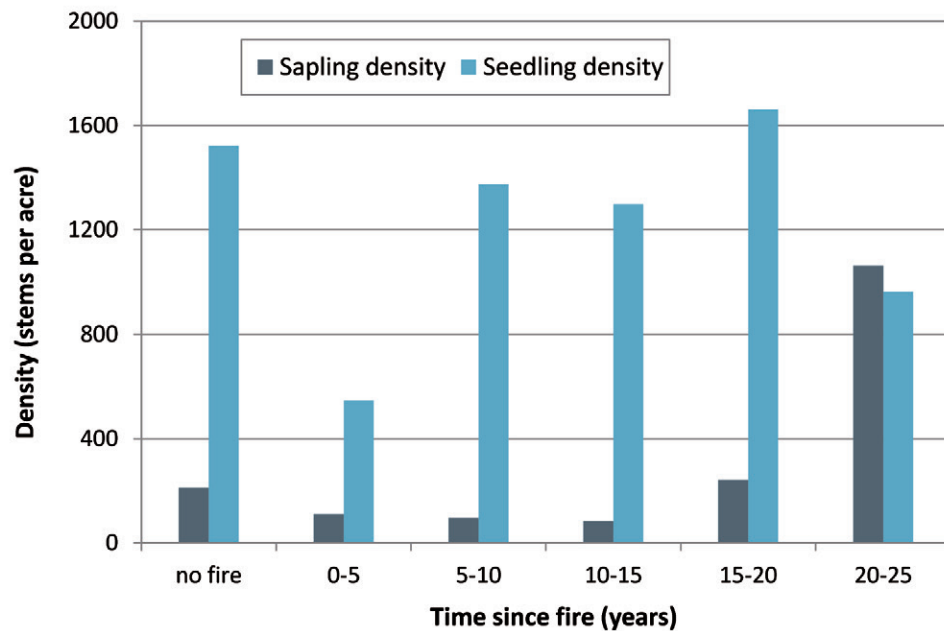
In addition to estimating forest versus nonforest proportions of burned areas, it is also possible to analyze the proportions of burned areas by forest type. Ninety-six percent of the burned area that was classified as forest fell into eight forest types: juniper woodland, pinyon/juniper woodland, Douglas-fir, ponderosa pine, white fir, deciduous oak woodland, evergreen oak woodland, and mesquite woodland. This analysis relied on field-recorded forest types because the calculated forest type is often "nonstocked"

in areas that have recently been disturbed. Juniper woodland, pinyon/juniper woodland, and mesquite woodland burned in lower proportions than their occurrences on the landscape; the remainder burned in higher proportion (table 1). The ponderosa pine forest type burned four times the area in proportion to its Statewide abundance as a forest type.

More than two-thirds of the forest plots within fire perimeters were measured after the fires occurred. The density of seedlings and saplings at these 234 postfire plots, compared to the time since fire for each plot, gives temporal insight into fire recovery. Figure 10 shows that seedling density was much lower on plots that burned 0 to 5 years before measurement than on unburned plots, which is expected because fire likely kills young seedlings. However, up to 15–20 years postfire, seedling density increased with

**Table 1**—Percentage of all forest land area, and proportions of burned plots, for the eight forest types representing most burned area between 1984 and 2011 in New Mexico.

| Forest type             | Percentage of forest land area | Percentage of burned plots |
|-------------------------|--------------------------------|----------------------------|
| Juniper woodland        | 10.7                           | 3.3                        |
| Pinyon/juniper woodland | 40.9                           | 21.7                       |
| Douglas-fir             | 3.7                            | 12.1                       |
| Ponderosa pine          | 10.5                           | 44.5                       |
| White fir               | 1.5                            | 3.7                        |
| Deciduous oak woodland  | 3.5                            | 5.5                        |
| Evergreen oak woodland  | 2.0                            | 3.3                        |
| Mesquite woodland       | 13.8                           | 2.2                        |
| All others combined     | 13.3                           | 3.7                        |
| <b>Total</b>            | <b>100.0</b>                   | <b>100.0</b>               |

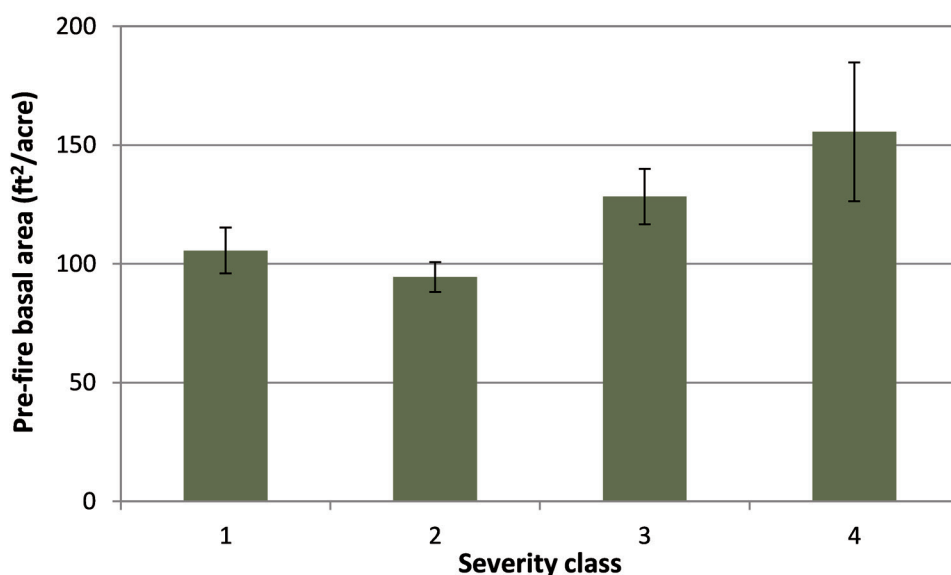


**Figure 10**—Seedling and sapling density with time since fire for plots measured prefire and again postfire, 2008–2012, in New Mexico. Fires included those that burned between 1984 and 2011.

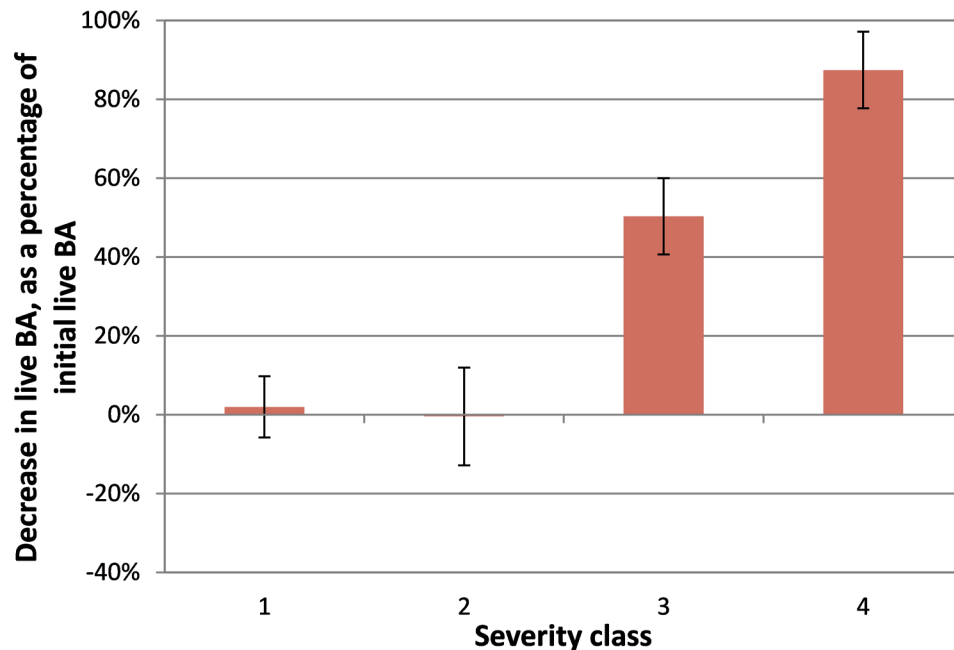
time since fire; after about 20 years, seedling density declined (fig. 10). The decline in seedling density 20 years postfire is likely due to recruitment of seedlings into the sapling size class. Until about 20 years after burning, postfire sapling density was lower than sapling density at unburned plots. At plots that were measured more than 20 years after fire, sapling density increased as seedling density decreased (fig. 10).

The MTBS program not only delineates the perimeters of large fires, but also classifies fire severity using prefire and postfire satellite imagery into four fire severity classes or an increased greenness class. An assessment of the level of mortality associated with each of the four MTBS fire severity classes requires both prefire and postfire measurements of the same plots. Although we do not yet have remeasurement data from New Mexico's annual inventory, FIA does have periodic inventory data for some annual inventory plots, which we call co-located plots. Using the periodic-to-annual analysis methods for co-located plots described by Goeking (2015), we compared the percent basal area reduction due to fire among the four severity classes. There were 124 plots that were measured during the periodic inventory, then burned, and then were measured again during the annual inventory. As we might expect, fires in the higher severity classes (class 3 and class 4) had significantly higher prefire basal area than fires in the two lower severity classes (fig. 11). The percent reduction in live basal area, as a proportion of prefire live basal area, corresponds with the fire severity classes delineated by the MTBS program (fig. 12). The two lowest classes showed changes in live basal area of less than 2 percent. The medium severity class (class 3) was characterized by a 50 percent reduction in live basal area, and plots in the highest severity class (class 4) had an average reduction of 87 percent of live basal area. This analysis was repeated at a broader scale, and Shaw et al. (2017) describe the results of this analysis across eight western States including New Mexico.

When FIA begins collecting remeasurement data, we will be able to assess the frequency at which forest-type conversions occur due to fire. Forest type change is often related to fire severity. Low-severity fires may kill individual stems of fire-sensitive species like aspen, or consume the crowns of low-stature species like Gambel oak, but not affect the fire-resistant overstory component, which is often composed of fire-resistant species such as ponderosa pine. Therefore low-severity fire can actually increase and maintain



**Figure 11**—Prefire live basal area, by fire severity class, in New Mexico. Fire severity classes are 1 = very low or unburned, 2 = low severity, 3 = medium severity, and 4 = high severity. Error bars represent plus/minus one standard error.



**Figure 12**—Percent reduction in live basal area, by fire severity class, in New Mexico. Fire severity classes are 1 = very low or unburned, 2 = low severity, 3 = medium severity, and 4 = high severity. Error bars represent plus/minus one standard error.

the relative dominance of ponderosa pine. High-severity fires, which may kill a major fraction of the overstory, have varying effects by forest type. In stands composed of a combination of seeding and sprouting species, such as ponderosa pine (seeding) with associated aspen or Gambel oak (sprouting), a high-severity fire can kill most trees. When all or most of the ponderosa pine overstory is killed by fire, aspen and/or oak species usually sprout in abundance and can become the dominant species in the stand.

As more forest inventory data are collected in New Mexico, we will have an increased ability to quantify not only the longer-term effects of fire, but also the prefire conditions associated with fire severity. The data thus far confirm that there has been only partial mortality within fire boundaries. Remeasurement data will be necessary to quantify mortality rates, the amount of time standing dead trees remain standing, and how long fire-killed trees remain present in the down woody material pool. Postfire recovery, particularly as measured by seedling and sapling densities, can also be assessed as plots are remeasured in the next cycle of New Mexico’s forest inventory.

## Forest Pests, Pathogens, and Other Damage Agents

FIA crews record damage codes representing a wide range of biotic, abiotic, and human-caused damage agents if they are present on individual live trees. A single tree may be assigned up to three damage agents, in decreasing order of their impact on the tree. The protocol is based on a threshold system, where only trees with evidence of serious physical damage, insect infestation, or pathogen infection are assigned damage agent codes. Although this is somewhat subjective, the general rule is that damage should be recorded when it will cause at least one of the following:

1. Prevent the tree from living to maturity, or surviving 10 more years if already mature.
2. Prevent the tree from producing marketable products.
3. Reduce (or has seriously reduced) the quality of the tree’s products.

These rules roughly correspond to two main categories of damage agents. Agents that are likely to prevent a tree from living to maturity or surviving for 10 years after the inventory date tend to be those related to insects, disease, fire, and atmospheric effects (drought, flooding, wind, etc.), whereas agents that preclude or reduce a tree's merchantability are more likely to be problems with form, such as forks, broken tops, or bole scars. Trees with form-related damages may or may not be affected with respect to survival. Therefore, not all trees with damages recorded are expected to die, and some of those with poor merchantability may live to typical ages for their species. Damage agents are recorded only for live trees, in contrast to mortality agents, which are recorded only for trees that recently died. Although up to three damage agents may be recorded for any live tree, the vast majority of trees with a primary damage agent recorded do not have secondary or tertiary damage agents. Therefore, only primary damage agents are presented here.

New Mexico's annual forest inventory tallied 85,081 trees between 2008 and 2014. About 25 percent of all trees 5.0 inches in diameter or larger had at least one damage agent recorded, compared to 23 percent for the 2008–2012 period (table 2). Most of this slight increase is due to a higher percentage of timber trees with diseases recorded (10 percent) or woodland trees with animal damage recorded (5 percent) in 2013 and 2014, relative to the previous measurement years. (See Appendix D for definitions of timber and woodland species.) The overall percentage of timber trees with damages recorded during 2008–2014 is about the same as for 2008–2012. In contrast, the overall percentage of woodland trees with damages recorded has increased by about 4 percentage points over the past 2 years to 22 percent.

Damage agents related to form or merchantability accounted for the majority of primary damage agents (table 2). Note that temporal discrepancies in thresholds for recording form-related damage agents account for the magnitude of the differences in total damage percentages between the two inventories. Diseases were recorded for 10 percent of all live timber trees and 3 percent of live woodland trees between 2008 and 2014. The most common diseases were stem and butt rots (including conks) and dwarf mistletoe. Insects were recorded as the primary damage agent for about 3 percent of trees between 2008 and 2014, and insects were recorded more frequently for timber than woodland trees. Defoliators accounted for the vast majority of timber trees with insect damage, while nearly twice as many woodland trees were damaged by bark beetles compared

**Table 2**—Damage agents recorded for live trees, 2008–2012 and 2008–2014, by timber and woodland species groups.

| Damage agent group             | Annual inventory (2008–2012) |              |              | Annual inventory (2008–2014) |              |              |
|--------------------------------|------------------------------|--------------|--------------|------------------------------|--------------|--------------|
|                                | Timber                       | Woodland     | All species  | Timber                       | Woodland     | All species  |
|                                | <i>Percent</i>               |              |              |                              |              |              |
| No damage                      | 70.5                         | 81.0         | 77.1         | 70.2                         | 77.7         | 74.8         |
| Insects                        | 4.8                          | 2.6          | 3.4          | 4.7                          | 2.5          | 3.4          |
| Diseases                       | 4.5                          | 3.6          | 3.9          | 10.4                         | 2.7          | 5.6          |
| Fire                           | 1.0                          | 0.4          | 0.6          | 0.9                          | 0.4          | 0.6          |
| Animals                        | 0.6                          | 0.6          | 0.6          | 1.7                          | 5.3          | 4.0          |
| Weather                        | 0.3                          | 1.3          | 1.0          | 0.3                          | 1.3          | 0.9          |
| Suppression                    | 0.7                          | 0.4          | 0.5          | 0.7                          | 0.6          | 0.6          |
| Form                           | 17.5                         | 9.2          | 12.3         | 10.9                         | 8.7          | 9.5          |
| Human                          | 0.1                          | 0.9          | 0.6          | 0.1                          | 0.8          | 0.5          |
| <b>All damage agent groups</b> | <b>100.0</b>                 | <b>100.0</b> | <b>100.0</b> | <b>100.0</b>                 | <b>100.0</b> | <b>100.0</b> |

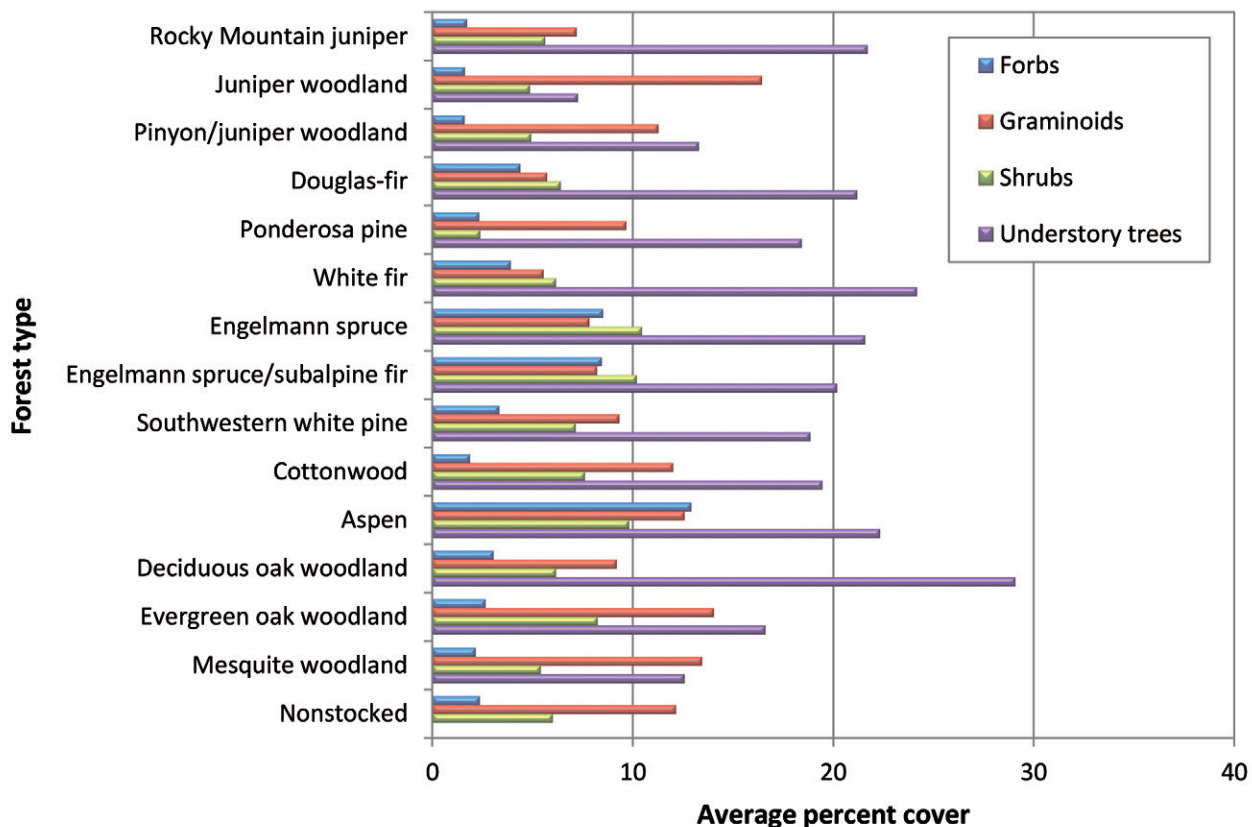
to defoliators. Each of the other primary damage agents affected less than 1 percent of all trees between 2008 and 2014, and none changed appreciably since the previous reporting period. These damage agents include fire, animals, weather, suppression, and human impacts. The primary human-caused damage agent consisted of woodland cutting.

## Understory Vegetation

The structure and composition of understory vegetation affects the overall diversity, productivity, and habitat quality of forested ecosystems. Understory vegetation data are collected on all plots by using two distinct protocols that characterize overall vegetation structure as well as species composition. Under the vegetation structure protocol, FIA field crews record the height class and percent cover that is occupied by each of four plant growth habits: forbs, graminoids, shrubs, and trees with diameters less than 5.0 inches. Under the species composition protocol, the following variables are recorded for plant species that individually occupy at least 3 percent of the ground area: height class, growth habit, and percent cover. In New Mexico, the threshold for recording individual species was lowered from 5 percent to 3 percent beginning in 2012 (USDA Forest Service 2006, 2011). If more than four species occupy more than the cover threshold, then only the most abundant four species per life form are recorded. Note that the vegetation structure protocol also includes all species that have less than the minimum thresholds for being recorded under the species composition protocol. On plots where many species are present but where each species occupies less area than the cover threshold for individual species, there are no species recorded under the species composition protocol yet a much higher percentage cover is recorded within the structure protocol.

Figure 13 depicts the average percent cover of each plant growth habit within each of New Mexico's 15 main forest types. This analysis was completed by summarizing data from FIA's protocols for understory vegetation structure, where the average cover of each life form was calculated for each plot, and averaging the cover across plots within each forest type. Understory trees cover more area than the other three growth habits in all forest types except for juniper woodland, mesquite woodlands, and nonstocked stands. Average understory tree cover ranges from 0 percent in nonstocked forest areas to 29 percent in deciduous oak woodland. After understory tree cover, graminoids are the plant growth habit with the highest average cover in most forest types. Exceptions to this pattern are the aspen forest type, which has slightly higher cover of forbs than of graminoids, and the following coniferous forest types that have higher shrub cover than graminoid or forb: Douglas-fir, white fir, Engelmann spruce, and Engelmann spruce/subalpine fir. Average graminoid cover ranges from less than 6 percent in white fir stands to more than 16 percent in juniper woodlands. Shrub cover ranges from 2 percent in ponderosa pine stands to 10 percent in Engelmann spruce stands. Average forb cover was less than 5 percent in all forest types except for aspen, Engelmann spruce, and Engelmann spruce/subalpine fir (13 percent, 8 percent, and 8 percent, respectively).

More than 500 individual plant species were recorded on New Mexico's forest inventory plots. The four most frequently recorded species within each growth habit are listed in table 3. New Mexico's State grass, blue grama (*Bouteloua gracilis*), was the most frequently encountered species by a large margin and was recorded on more than one-third of all forested plots. On average, blue grama covered 16 percent of all plots where it occurred. Thus, this species is not only common but is also relatively abundant where it occurs, compared to the other understory species listed in table 3.



**Figure 13**—Average percent cover of the four understory vegetation growth habits (forb, graminoid, shrub, and understory tree), by forest type, New Mexico, 2005–2014. Forest types represented on fewer than 10 plots are not shown. Cover of understory trees includes both tally and non-tally species with stem diameters of less than 5.0 inches in diameter.

**Table 3**—The four most frequently recorded plant species in each growth habit, as well as the number of plots where they occurred and their average percent cover, New Mexico, 2005–2014.

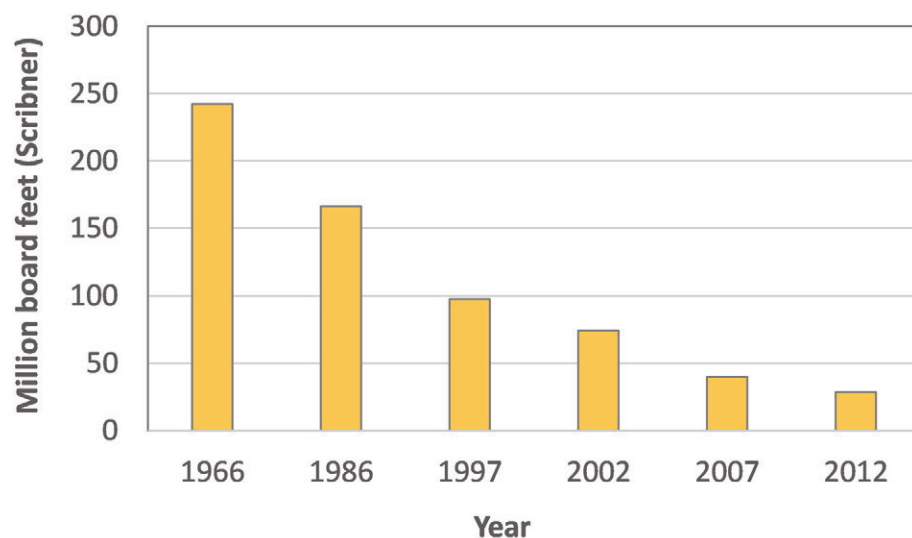
| Growth habit    | Species                       | Common name                 | Number of plots | Average cover |
|-----------------|-------------------------------|-----------------------------|-----------------|---------------|
| Forb            | <i>Erigeron</i> sp.           | fleabane                    | 22              | 7.3%          |
|                 | <i>Chenopodium graveolens</i> | fetid goosefoot             | 14              | 6.9%          |
|                 | <i>Achillea millefolium</i>   | common yarrow               | 11              | 6.2%          |
|                 | <i>Fragaria virginiana</i>    | wild strawberry             | 11              | 6.2%          |
| Graminoid       | <i>Bouteloua gracilis</i>     | blue grama                  | 1088            | 15.5%         |
|                 | <i>Bouteloua curtipendula</i> | sideoats grama              | 285             | 9.5%          |
|                 | <i>Festuca arizonica</i>      | Arizona fescue              | 185             | 9.3%          |
|                 | <i>Muhlenbergia montana</i>   | mountain muhly              | 165             | 11.1%         |
| Shrub           | <i>Cercocarpus montanus</i>   | alderleaf mountain mahogany | 312             | 9.5%          |
|                 | <i>Gutierrezia sarothrae</i>  | broom snakeweed             | 285             | 7.0%          |
|                 | <i>Artemisia tridentata</i>   | big sagebrush               | 159             | 10.6%         |
|                 | <i>Atriplex canescens</i>     | fourwing saltbush           | 93              | 6.6%          |
| Understory tree | <i>Pinus edulis</i>           | common pinyon               | 633             | 7.3%          |
|                 | <i>Quercus gambelii</i>       | Gambel oak                  | 587             | 16.2%         |
|                 | <i>Prosopis glandulosa</i>    | honey mesquite              | 412             | 14.0%         |
|                 | <i>Juniperus monosperma</i>   | oneseed juniper             | 235             | 7.3%          |

Note that each of the most common graminoid, shrub, and understory tree species were typically recorded on hundreds of plots, while the most commonly encountered forbs were encountered on fewer than two dozen plots (table 3). Further, the most common forbs had lower average percent cover than the most common species in other growth habits. There were as many forb species recorded as there were graminoid species, indicating that overall the species diversity of forbs occupying at least 3 percent cover is similar to that of graminoid species occupying at least 3 percent cover. However, forb species were not as widespread as other growth habits, and where they occurred, they occupied less cover (fig. 13), which may be an artifact of the ephemeral nature of forbs and the timing of plot measurements.

## New Mexico's Forest Products Industry

The University of Montana's Bureau of Business and Economic Research (BBER), in cooperation with the Interior West FIA Program, conducts periodic censuses of New Mexico's primary forest products industry. The most recent census was conducted in 2012 (Sorenson et al. 2016). The two previous censuses in New Mexico measured 2002 (Morgan et al. 2006) and 2007 (Hayes et al. 2012) activities. This section summarizes key aspects of the 2012 industry census, including timber harvest levels by product and ownership class as well as forest industry conditions like employment, sales value, and production levels.

The commercial timber harvest in New Mexico during 2012 was 28.8 million board feet Scribner (Sorenson et al. 2016), which is 73 percent of the 2007 harvest. The 2007 harvest was just over half of the 2002 harvest and 40 percent of the 1997 harvest (Hayes et al. 2012). Previous reports of timber harvests in New Mexico show that this decrease is a decades-long trend (fig. 14). About 44 percent of the 2012 harvest was from NFS lands (14.4 million board feet Scribner), with the remaining harvest split between forests on private lands (8.0 million board feet Scribner) and tribal lands (6.5 million board feet Scribner; Sorenson et al. 2016). The 2012 harvest from NFS lands was more than double the amount harvested from NFS lands in 2007, and it was also higher than in



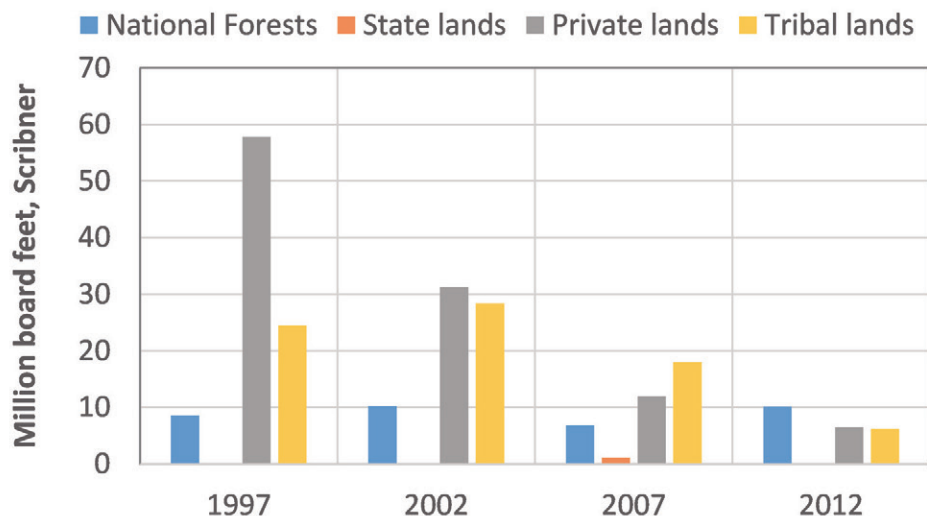
**Figure 14**—Timber harvest in New Mexico, in million board feet Scribner, for selected years when timber harvest censuses were conducted. Harvests for individual years (1966, 1986, 1997, 2002, 2007, and 2012) were reported by Setzer and Wilson (1970), McLain (1989), Keegan et al. (2001), Morgan et al. (2006), Hayes et al. (2012), and Sorenson et al. (2016), respectively.

1997 and 2002 (Sorenson et al. 2016). Similarly, the source of the timber processed by New Mexico's forest products facilities in 2012 included a greater proportion from NFS lands (fig. 15).

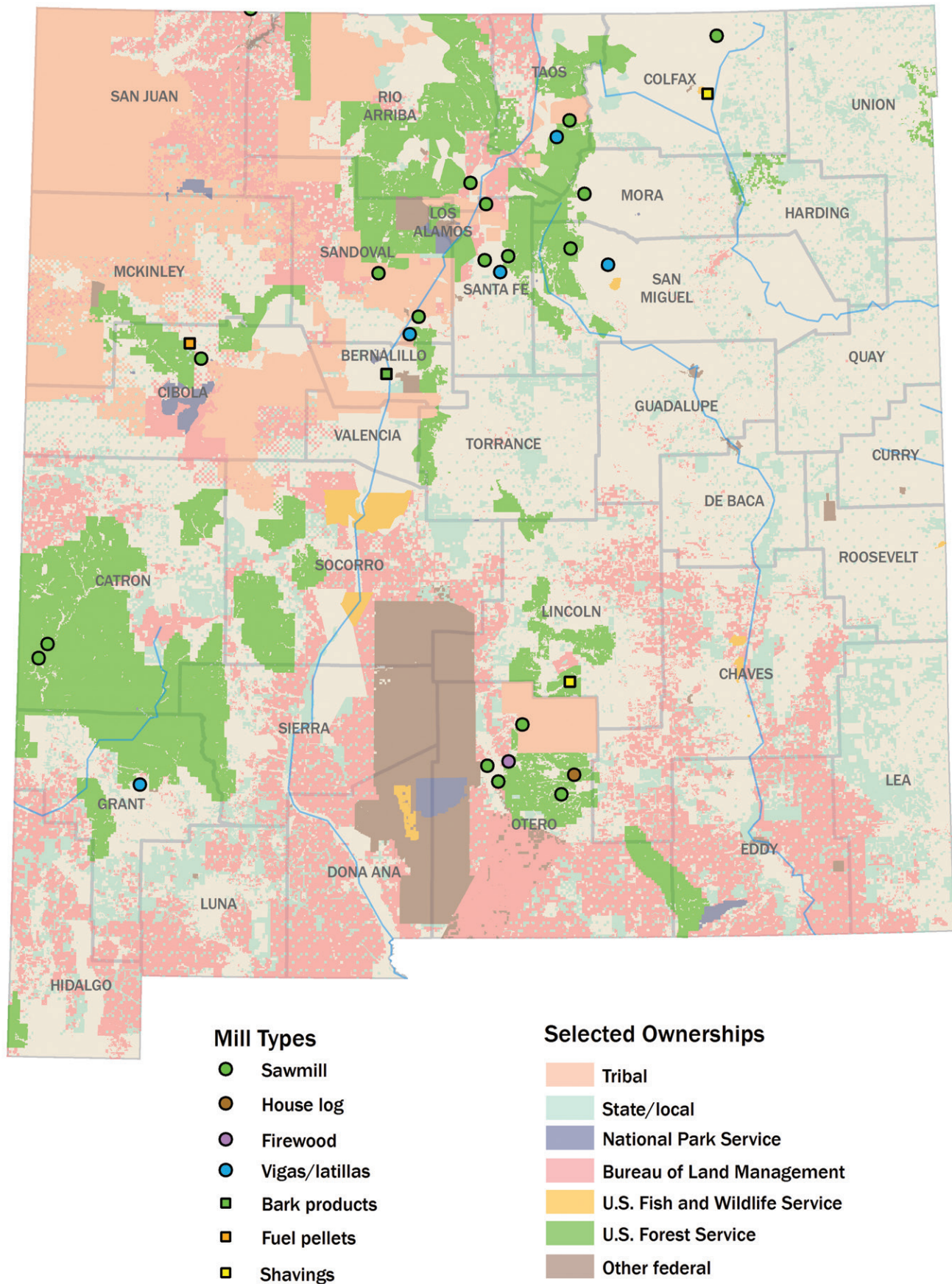
The 2012 census of Sorenson et al. (2016) showed that ponderosa pine was the leading species harvested, accounting for 54 percent of harvest volume, followed by Douglas-fir (19 percent), other species (15 percent), true firs (8 percent), and Engelmann spruce (4 percent). Otero County in south-central New Mexico produced 18 percent of the commercial timber harvest volume, down from 47 percent in 2007, and Colfax County in the northeast accounted for 14 percent (24 percent in 2007). Three counties that included less than 10 percent of the 2007 harvest showed increases in the proportion of New Mexico's total timber harvest in 2012 (Sorenson et al. 2016): Catron County (4 percent in 2007 and 10 percent in 2012), Lincoln County (5 percent versus 19 percent), and Rio Arriba County (4 percent versus 16 percent).

New Mexico timber facilities processed 22.9 million board feet (Scribner) in 2012, including 0.4 million board feet from Colorado and Montana that were processed in New Mexico (Sorenson et al. 2016). The majority (78 percent) of timber harvested in New Mexico during 2012 was processed within the State. Almost 4 million board feet (Scribner) of New Mexico's timber harvest was processed outside the State, primarily in Colorado, and 2.5 million board feet (Scribner) were processed in Texas.

Primary forest products facilities process timber (i.e., logs) into manufactured products such as lumber and also include facilities that use bark or wood residue directly from timber processors. The total number of active facilities increased from 24 facilities in 12 counties in 2007 to 28 facilities in 13 counties in 2012 (fig. 16). The 28 active facilities in 2012 include 17 sawmills (five more than in 2007), five *viga* and *latilla* manufacturers (same as 2007), and eight other facilities (one more than 2007), producing log homes, firewood, bark, and a combination of posts and poles. New Mexico's forest products industry produced sales of \$37.1 million in 2012 (Sorenson et al. 2016). The 17 sawmills in the State produced lumber with sales value of \$10.7 million (all sales value figures in 2012 dollars). The five *viga* and *latilla* manufacturers operating in 2012 had sales of \$3.7 million. Manufacturers of other wood products, including log homes, log furniture, post, poles, firewood, and bark products, had combined sales of \$22.7 million.



**Figure 15**—Source of timber processed in New Mexico, in million board feet Scribner, for selected years when timber harvest censuses were conducted. Harvests for individual years (1966, 1986, 1997, 2002, 2007, and 2012) were reported by Setzer and Wilson (1970), McLain (1989), Keegan et al. (2001), Morgan et al. (2006), Hayes et al. (2012), and Sorenson et al. (2016), respectively.



**Figure 16**—Active primary forest products facilities in New Mexico in 2012, by mill type.

The forest products industry includes private sector foresters, loggers, and other forest workers, as well as employees at primary and secondary wood and paper products manufacturing facilities. Employment data from the U.S. Department of Commerce, Bureau of Economic Analysis, Regional Economic Information System (U.S. Dept. of Commerce, BEA 2014) showed employment in the State's forest products industry totaled about 2,300 workers in 2012, or about 29 percent less than in 2007. Sorenson et al.'s (2016) census of 2012 found that most of this decline was due to a decrease in wood products manufacturing. The State's industry, like much of the U.S. West, continues to wrestle with the impacts of steep timber harvest reductions from Federal lands from the 1990s (Keegan et al. 2006; Morgan et al. 2006), as well as the more recent Great Recession and U.S. home-building collapse (Keegan et al. 2012). Collaborative efforts at forest restoration and fire hazard reduction treatments in the region (Bradley 2009; Shultz et al. 2012) along with recovery of U.S. home-building and increasing domestic demand for wood products are offering some potential for timber harvest increases and improved forest industry operating conditions in New Mexico.

## Conclusions

---

Many of the analyses included in this report demonstrate the utility of FIA data as a monitoring and planning tool for a wide range of objectives. Given that private landowners manage 43 percent of the State's forest lands, and more than half of the 2012 commercial timber harvest came from private and tribal lands, it is critical that the FIA program work with landowners and landowner associations to communicate the value of this inventory and enlist their support in obtaining sample data from private forest lands. Because the natural processes that affect forest dynamics do not observe ownership boundaries, a representative sample of all forest lands is necessary to fully understand current trends and make predictions about the future of New Mexico's forests.

Not all relevant analyses could be included here, however, and more in-depth analyses will be conducted in the future by FIA analysts and/or FIA data users on a wide range of topics. A few examples of future research and analyses include, but are not limited to:

- Expanding per-acre estimates of down woody materials attributes to the State level, and also using down woody materials data to update fuel and fire models for New Mexico.
- Quantifying the effects of fire on specific forest types, using immediate postfire data from the Accelerated Remeasurement and Evaluation of Burned Areas project in addition to regularly scheduled plot remeasurements, and quantifying the rate of recovery in burned areas.
- Using remeasurement data to identify type changes, such as conversion of shrublands to woodlands (e.g., expansion of mesquite or juniper woodlands) or coniferous forests to woodlands (e.g., ponderosa pine forest to oak woodland following severe fire), over long time scales.

All of these issues have been identified as important by land managers in New Mexico. As soon as New Mexico's forest inventory includes 5 years of remeasurement data from 2015–2019, the existence of sufficient remeasurement data will enable more robust analyses of trends in forest dynamics.

## References

---

- Bechtold, W.A.; Patterson, P.L., eds. 2005. The enhanced Forest Inventory and Analysis program—National sampling design and estimation procedures. Gen. Tech. Rep. SRS-80. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southern Research Station. 85 p.
- Bradley, A. 2009. The New Mexico forest restoration principles: Creating a common vision. *Ecological Restoration*. 27(1): 22–24.
- Cleland, D.T.; Freeouf, J.A.; Keys, J.E., Jr.; [et al.]. 2007. Ecological subregions: Sections and subsections for the conterminous United States. Gen. Tech. Rep. GTR-WO-76. Washington, DC: U.S. Department of Agriculture, Forest Service.
- Covington, W.W.; Fule, P.Z.; Moore, M.M.; [et al.]. 1997. Restoring ecosystem health in ponderosa pine forests of the Southwest. *Journal of Forestry*. 95(4): 23–29.
- Eidenshink J.; Schwind, B.; Brewer, K.; [et al.]. 2007. A project for monitoring trends in burn severity. *Fire Ecology Special Issue*. 3(1): 3–21.
- Eyre, F.H. 1980. Forest cover types of the United States and Canada. Society of American Foresters. 148 p.
- Gillespie, A.J.R. 1999. Rationale for a national annual forest inventory program. *Journal of Forestry*. 97(12): 16–20.
- Goeking, Sara A. 2015. Disentangling forest change from forest inventory change: A case study from the US Interior West. *Journal of Forestry*. 113(5): 475–483.
- Goeking, S.A.; Patterson, P.L. 2013. Stratifying to reduce bias caused by high nonresponse rates: A case study from New Mexico's forest inventory. Res. Note RMRS-RN-59. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 22 p.
- Goeking, S.A.; Shaw, J.D.; Witt, C.; [et al.]. 2014. New Mexico's forest resources, 2008–2012. Resour. Bull. RMRS-RB-18. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 144 p.
- Hansen, M.H.; Hahn, J.T. 1992. Determining stocking, forest type, and stand-size class from forest inventory data. *Northern Journal of Applied Forestry*. 9(3): 82–89.
- Hayes, S.W.; Morgan, T.A.; Berg, E.C.; [et al.]. 2012. The Four Corners timber harvest and forest products industry, 2007. Resour. Bull. RMRS-RB-13. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 61 p.
- Keegan, C.E.; Morgan, T.A.; Gebert, K.M.; [et al.]. 2006. Timber-processing capacity and capabilities in the western United States. *Journal of Forestry*. 104 (5): 262–268.
- Keegan, C.E.; Sorenson, C.B.; Morgan, T.A.; [et al.]. 2012. Impact of the Great Recession and housing collapse on the forest products industry in the western United States. *Forest Products Journal*. 61(8): 625–634.
- McLain, W.H. 1989. New Mexico's timber production and mill residue, 1986. Resour. Bull. INT-RB-59. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 17 p.
- Miller, R.F.; Tausch, R.J.; McArthur, E.D.; [et al.]. 2008. Age structure and expansion of pinon-juniper woodlands: A regional perspective in the Intermountain west. Res. Pap. RMRS-RP-69. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 15 p.
- Morgan, T.A.; Dillon, T.; Keegan, C.E., III; [et al.]. 2006. Four Corners timber harvest and forest products industry, 2002. Resour. Bull. RMRS-RB-7. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 64 p.
- O'Brien, R.A. 2003. New Mexico's Forests, 2000. Resour. Bull. RMRS-RB-3. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 117 p.

- O'Connell, B.M.; LaPoint, E.B.; Turner, J.A.; [et al.]. 2015. The Forest Inventory and Analysis Database: Database description and user guide version 6.0.2 for Phase 2. U.S. Department of Agriculture, Forest Service. 748 p. <http://www.fia.fs.fed.us/library/database-documentation/>.
- Reineke, L.H. 1933. Perfecting a stand density index for even-aged forests. *Journal of Agricultural Research*. 46(7): 627–638.
- Reinhardt, E.D.; Keane, R.E.; Calkin, D.E.; [et al.]. 2008. Objectives and considerations for wildland fuel treatment in forested ecosystems of the interior western United States. *Forest Ecology and Management*. 256: 1997–2006.
- Setzer, T.S.; Wilson, A.K. 1970. Timber products in the Rocky Mountain States, 1966. *Resour. Bull. INT-9*. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Forest and Range Experiment Station. 93 p.
- Shaw, J.D.; Goeking, S.A.; Menlove, J.; [et al.]. 2017. Assessment of fire effects based on Forest Inventory and Analysis data and a long-term fire mapping data set. *Journal of Forestry*. 115: 258–269.
- Shultz, C.A.; Jedd, T.; Beam, R.D. 2012. The Collaborative Forest Landscape Restoration Program: A history and overview of the first projects. *Journal of Forestry*. 110 (7): 381–391.
- Sorenson, C.B.; Hayes, S.W.; Morgan, T.A.; [et al.]. 2016. The Four Corners timber harvest and forest products industry, 2012. *Resour. Bull. RMRS-RB-21*. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 62 p.
- Stuever, M.; Capuano, J. 2014. New Mexico Forest Inventory and Analysis: American Recovery and Reinvestment Act Project, Field Report: 2010–2012. *Res. Note RMRS-RN-68*. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 34 p.
- U.S. Department of Agriculture, Forest Service. 2006. Interior West Forest Inventory and Analysis Forest Survey field procedures, Ver. 4.0. [http://www.fs.fed.us/rm/ogden/data-collection/pdf/p2\\_midas\\_40\\_final\\_reduced.pdf](http://www.fs.fed.us/rm/ogden/data-collection/pdf/p2_midas_40_final_reduced.pdf). [Accessed June 2013.]
- U.S. Department of Agriculture, Forest Service. 2011. Interior West Forest Inventory and Analysis Forest Survey field procedures, Ver. 5.0. [http://www.fs.fed.us/rm/ogden/data-collection/pdf/iwfia\\_p2\\_50.pdf](http://www.fs.fed.us/rm/ogden/data-collection/pdf/iwfia_p2_50.pdf). [Accessed June 2013.]
- U.S. Department of Commerce, Bureau of Economic Analysis [BEA]. 2014. Regional economic accounts, Table SA25N. Washington, DC: U.S. Department of Commerce. <http://www.bea.gov/regional>. [Accessed September 30, 2014].
- United States National Vegetation Classification [USNVC]. 2016. United States National Vegetation Classification Database, V2.0. Washington DC. Federal Geographic Data Committee, Vegetation Subcommittee, [usnvc.org] [Accessed January 27, 2017].
- Van Hooser, D.D.; O'Brien, R.A.; Collins, D.C. 1993. New Mexico's forest resources. *Resour. Bull. INT-79*. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station. 110 p.
- Wilson, M.J.; Deblander, L.T.; Halverson, K.A. 2010. Resource impacts of the 1910 fires: A Forest Inventory and Analysis (FIA) perspective. Powerpoint presentation given at: 1910 Fires: A century later; 2010 May 20–22; Wallace, ID.
- Woudenberg, S.W.; Conkling, B.L.; O'Connell, B.M.; [et al.]. 2010. The Forest Inventory and Analysis Database: Database description and users manual version 4.0 for Phase 2. *Gen. Tech. Rep. RMRS-GTR-245*. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 339 p.

## Appendix A—Standard Forest Inventory and Analysis Terminology \_\_\_\_\_

*Note:* For the FIA national glossary please go to <https://www.nrs.fs.fed.us/fia/data-tools/state-reports/glossary/default.asp>

**Average annual mortality**—The average annual volume of trees 5.0 inches d.b.h./d.r.c. and larger that died from natural causes.

**Average annual net growth**—Average annual net change in volume of trees 5.0 inches d.b.h./d.r.c. and larger in the absence of cutting (average annual gross growth minus average annual mortality).

**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 calculated for trees 1.0 inch and larger in diameter, and 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 d.b.h./d.r.c. and larger, expressed in terms of oven-dry weight. It includes above-ground portions of trees: bole/stem (trunk), bark, and branches. Biomass estimates can be computed for live and/or dead trees.

**Board-foot volume**—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 (note: board-foot cull deductions are limited to rotten/missing material and form defect—referred to as the **merchantability factor—board-foot**). 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.

**Census water**—Streams, sloughs, estuaries, canals, and other moving bodies of water 200 feet wide and greater, and lakes, reservoirs, ponds, and other permanent bodies of water 4.5 acres in area and greater.

**Coarse woody debris**—Down pieces of wood leaning more than 45 degrees from vertical with a diameter of at least 3.0 inches and a length of at least 3.0 feet.

**Condition class**—The combination of discrete landscape and forest attributers that identify, define, and stratify the area associated with a plot. Such attributes include reserved status, owner group, forest type, stand-size class, stand origin, and tree density.

**Crown class**—A classification of trees based on dominance in relation to adjacent trees in the stand as indicated by crown development and amount of sunlight received from above and the sides.

**Crown cover (Canopy cover)**—The percentage of the ground surface area covered by a vertical projection of plant crowns. Tree crown cover for a sample site includes the combined cover of timber and woodland trees 1.0 inch d.b.h./d.r.c. and larger. Maximum crown cover for a site is 100 percent; overlapping cover is not double counted.

**Cubic-foot volume (merchantable)**—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 timber and woodland species; the merchantable portion for timber species includes that part of a bole from a 1-foot stump to a minimum 4-inch top d.o.b, or above the place(s) of diameter measurement for any woodland tree with a single 5.0-inch stem or larger or a cumulative (calculated) d.r.c. of at least 5.0 inches to the 1.5-inch ends of all branches. **Net cubic-foot volume** is calculated as the gross cubic-foot volume in the merchantable portion of a tree, less deductions for cull.

**Diameter at breast height (d.b.h.)**—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.)**—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 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 (e.g., 4", 6", 8") 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.

**Diameter outside bark (d.o.b.)**—Tree diameter measurement inclusive of the outside perimeter of the tree bark. The d.o.b. measurement may be taken at various points on a tree (e.g., breast height, tree top) or log, and is sometimes estimated.

**Field plot/field location**—A reference to the sample site or plot; an area containing the field location center and all sample points. A field location consists of four subplots and four microplots.

- **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 12 feet from the center of each subplot at an azimuth of 90 degrees, 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 land**—Land that has at least 10 percent cover of live tally tree species of any size, or land formerly having such tree cover, and not currently developed for a nonforest use. The minimum area for classification as forest land is 1 acre. Roadside, stream-side, and shelterbelt strips of trees must be at least 120 feet wide to qualify as forest land. Unimproved roads and trails, streams and other bodies of water, or natural clearings in forested areas are classified as forest if less than 120 feet in width or 1 acre in size. Grazed woodlands, reverting fields, and pastures that are not actively maintained are included if the above qualifications are satisfied. (Note that the canopy cover threshold for forest land was formerly 5 percent rather than 10 percent, and field crews in New Mexico from 2008 to 2012 used the 5 percent threshold. However, sampled conditions with 5–9 percent cover were treated as nonforest for the purposes of this report, and forest attributes are therefore based on the new 10-percent threshold.)

**Forest type**—A classification of forest land based on the species forming a plurality of live-tree stocking.

**Forest type group**: A combination of forest types that share closely associated species or site requirements.

**Gross growth**—The annual increase in volume of trees 5.0 inches d.b.h. and larger in absence of cutting and mortality. Gross growth includes survivor growth, ingrowth, growth on ingrowth, growth on removals before removal, and growth on mortality prior to death.

**Growing-stock trees**—A live timber species, 5.0 inches d.b.h. or larger, with less than 2/3 (67 percent) of the merchantable volume cull, and containing at least one solid 8-foot section, now or prospectively, reasonably free of form defect, on the merchantable portion of the tree.

**Growing-stock volume**—The cubic-foot volume of sound wood in growing-stock trees at least 5.0 inches d.b.h. from a 1-foot stump to a minimum 4-inch top d.o.b. to the central stem.

**Hardwood trees**—Dicotyledonous trees, usually broadleaf and deciduous.

**Inventory year**—The year in which a plot was scheduled to be completed. Within each subpanel, all plots have the same inventory year. Inventory year may differ from measurement year.

**Land use**—The classification of a land condition by use or type.

**Litter**—The uppermost layer of organic debris on a forest floor; that is, essentially the freshly fallen, or only slightly decomposed material, mainly foliage, but also bark fragments, twigs, flowers, fruits, and so forth. Humus is the organic layer, unrecognizable as to origin, immediately beneath the litter layer from which it is derived. Litter and humus together are often termed duff.

**Logging residue/products**—

- **Bolt**—A short piece of pulpwood; a short log.
- **Industrial wood**—All commercial roundwood products, excluding fuelwood.
- **Logging residue**—The unused sections within the merchantable portions of sound (growing-stock) trees cut or killed during logging operations.
- **Mill or plant residue**—Wood material from mills or other primary manufacturing plants that is not used for the mill's or plant's primary products. Mill or plant residue includes bark, slabs, edgings, trimmings, miscuts, sawdust, and shavings. Much of the mill and plant residue is used as fuel and as the raw material for such products as pulp, palletized fuel, fiberwood, mulch, and animal bedding. Mill or plant residue includes bark and the following components:
  - **Coarse residue**—Wood material suitable for chipping, such as slabs, edgings, and trim.
  - **Fine residue**—Wood material unsuitable for chipping, such as sawdust and shavings.
- **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 (delineates or 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 reserved status, owner group, forest type, stand-size class, stand origin, and stand density, given that each distinct area meets minimum size requirements.

**Measurement year**—The year in which a plot was completed. Measurement year may differ from inventory year.

**Merchantable portion**—For trees measured at d.b.h. and 5.0-inches d.b.h. and larger, the merchantable portion (or “merchantable bole”) includes the part of the tree bole from a 1-foot stump to a 4.0-inch top (d.o.b.). For trees measured at d.r.c., the merchantable portion includes all qualifying segments above the place(s) of diameter measurement for any tree with a single 5.0-inch stem or larger or a cumulative (calculated) d.r.c. of at least 5.0 inches to the 1.5-inch ends of all branches; sections below the place(s) of diameter measurement are not included. Qualifying segments are stems or branches that are a minimum of 1 foot in length and at least 1.0 inch in diameter; portions of stems or branches smaller than 1.0 inch in diameter, such as branch tips, are not included in the merchantable portion of the tree.

**Mortality tree**—All standing or down dead trees 5.0 inches d.b.h./d.r.c. and larger that were alive within the previous 5 years (in most States); for the 2008–2012 New Mexico inventory, this includes trees that were alive within the previous 10 years.

**National Forest System (NFS) lands**—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 lands**—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.

**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.

**Nonforest land**—Land that does not support, or has never supported, forests, and lands formerly forested where tree regeneration is precluded by development for other uses. Includes areas used for crops, improved pasture, residential areas, city parks, improved roads of any width and adjoining rights-of-way, power line clearings of any width, and noncensus water. If intermingled in forest areas, unimproved roads and nonforest strips must be more than 120 feet wide, and clearings, etc., more than 1 acre in size, to qualify as nonforest land.

**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.

**Other Federal lands**—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.

**Other public lands**—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.

**Poletimber-size trees**—For trees measured at d.b.h., softwoods 5.0 to 8.9 inches d.b.h. and hardwoods 5.0 to 10.9 inches d.b.h. For trees measured at d.r.c., all live trees 5.0 to 8.9 inches d.r.c.

**Primary wood processing plants**—An industrial plant that processes roundwood products, such as sawlogs, pulpwood bolts, or veneer logs.

**Private lands**—All lands not owned or managed by a Federal, State, or other public entity, including lands owned by corporations, trusts, or individuals, as well as Tribal lands.

**Productive forest land**—Forest land capable of producing 20 cubic feet per acre per year of wood from trees classified as a timber species (see Appendix D) on forest land classified as a timber forest type (see Appendix C).

**Productivity**—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 mean annual increment). 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. 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.”

**Removals**—The net volume of sound (growing-stock) trees 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 Wilderness designation).

**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.

**Sampling error**—A statistical term used to describe the accuracy of the inventory estimates. Expressed on a percentage basis in order to enable comparisons between the precision of different estimates, sampling errors are computed by dividing the estimate into the square root of its variance.

**Sapling**—A live tree 1.0 to 4.9 inches d.b.h./d.r.c.

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

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

**Sawtimber-size trees**—Softwoods 9.0 inches d.b.h. and larger and hardwoods 11.0 inches and larger.

**Sawtimber volume**—The growing-stock volume in the sawlog portion of sawtimber-size trees in board feet.

**Seedlings**—Live trees less than 1.0 inch d.b.h./d.r.c.

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

**Site tree**—A 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.

**Snag**—A standing dead tree.

**Softwood trees**—Coniferous trees, usually evergreen, having needle- or scale-like 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, etc.

**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) and is an index that expresses relative stand density based on a comparison of measured stand values with some standard condition; **relative stand density** is the ratio, proportion, or percent of absolute stand density to a reference level defined by some standard level of competition. 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.

**Standing dead tree**—To qualify as a standing dead tally tree, dead trees must be at least 5.0 inches in diameter, have a bole that has an unbroken actual length of at least 4.5 feet, and lean less than 45 degrees from vertical as measured from the base of the tree to 4.5 feet. Portions of boles on dead trees that are separated greater than 50 percent (either above or below 4.5 feet) are considered severed and are included in down woody material (DWM) if they otherwise meet DWM tally criteria. For western woodland species with multiple stems, a tree is considered down if more than 2/3 of the volume is no longer attached or upright; do not consider cut and removed volume. For western woodland species with single stems to qualify as a standing dead tally tree, dead trees must be at least 5.0 inches in diameter, be at least 1.0 foot in unbroken actual length, and lean less than 45 degrees from vertical.

**Stand-size class**—A classification of forest land based on the predominant diameter size of live trees presently forming the plurality 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.

**Timber species**—Tally tree species traditionally used for industrial wood products. These include all species of conifers, except pinyon and juniper. Diameters for timber species are measured at breast height (d.b.h.).

**Timber-stand improvement**—A term comprising all intermediate cuttings or treatments, such as thinning, pruning, release cutting, girdling, weeding, or poisoning, made to improve the composition, health, and growth of the remaining trees in the stand.

**Timberland**—Unreserved forest land capable of producing 20 cubic feet per acre per year of wood from trees classified as a timber species (see Appendix D) on forest land designated as a timber forest type (see Appendix C).

**Unproductive forest land**—Forest land not capable of producing 20 cubic feet per acre per year of wood from trees classified as a timber species (see Appendix D) on forest land designated as a timber forest type and all forest lands designated as a woodland forest type (see Appendix C).

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

**Wilderness area**—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 species**—Tally 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, mesquite, locust, mountain-mahogany (*Cercocarpus* spp.), Rocky Mountain maple, bigtooth maple, desert ironwood, and most oaks (note: bur oak and chinkapin oak are classified as timber species). Because most woodland trees are extremely variable in form, diameter is measured at root collar (d.r.c.).

## Appendix B—Standard Forest Resource Tables

**Table B1**—Percentage of plot area by land status, New Mexico, 2008–2014.

| Land status                            | Percentage of sample |
|----------------------------------------|----------------------|
| <b>Accessible forest land</b>          |                      |
| Unreserved forest land                 |                      |
| Timberland                             | 5.1                  |
| Unproductive                           | 20.5                 |
| Total unreserved forest land           | 25.5                 |
| Reserved forest land                   |                      |
| Productive                             | 1.0                  |
| Unproductive                           | 1.0                  |
| Total reserved forest land             | 2.0                  |
| <b>Total accessible forest land</b>    | <b>27.5</b>          |
| <b>Nonforest and other areas</b>       |                      |
| Nonforest land                         | 63.6                 |
| Water                                  | 0.2                  |
| Census                                 | 0.1                  |
| Non-Census                             | 0.1                  |
| <b>Total nonforest and other areas</b> | <b>63.7</b>          |
| <b>Non-response</b>                    |                      |
| Access denied                          | 8.1                  |
| Hazardous conditions                   | 0.3                  |
| Other                                  | 0.3                  |
| <b>Total non-response</b>              | <b>8.7</b>           |
| <b>All land</b>                        | <b>100.0</b>         |

All table cells without observations in the inventory sample are indicated by --.

Table value of 0.0 indicates the percentage rounds to less

than 0.1 percent. Columns and rows may not add to their totals due to rounding.

**Table B2**—Area of accessible forest land, in thousand acres, by owner class and forest land status, New Mexico, 2008–2014.

| Owner class                       | Unreserved forests |              |          | Reserved forests |              |         | All forest land |
|-----------------------------------|--------------------|--------------|----------|------------------|--------------|---------|-----------------|
|                                   | Timberland         | Unproductive | Total    | Productive       | Unproductive | Total   |                 |
| Forest Service                    |                    |              |          |                  |              |         |                 |
| National Forest                   | 2,609              | 3,990        | 6,599    | 719              | 493          | 1,212   | 7,811           |
| National Grassland                | --                 | 12           | 12       | --               | --           | --      | 12              |
| Other National Forest             | 58.1               | --           | 58.1     | 6.1              | --           | 6.1     | 64.3            |
| Other Federal                     |                    |              |          |                  |              |         |                 |
| National Park Service             | --                 | --           | --       | 49.5             | 80.7         | 130.2   | 130.2           |
| Bureau of Land Management         | 38.3               | 2,717.1      | 2,755.4  | --               | 139.3        | 139.3   | 2,894.7         |
| U.S. Fish and Wildlife Service    | --                 | --           | --       | --               | 55.1         | 55.1    | 55.1            |
| Departments of Defense and Energy | --                 | 702.0        | 702.0    | --               | --           | --      | 702.0           |
| Other Federal                     | --                 | 63.7         | 63.7     | --               | 6.1          | 6.1     | 69.8            |
| State and local government        |                    |              |          |                  |              |         |                 |
| State                             | 135.8              | 2,067.3      | 2,203.0  | 6.5              | 13.0         | 19.5    | 2,222.5         |
| County and Municipal              | --                 | 37.1         | 37.1     | --               | --           | --      | 37.1            |
| Private                           |                    |              |          |                  |              |         |                 |
| Undifferentiated private          | 1,438.7            | 9,266.0      | 10,704.6 | --               | --           | --      | 10,704.6        |
| All owners                        | 4,279.7            | 18,855.2     | 23,134.9 | 781.6            | 786.7        | 1,568.3 | 24,703.2        |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

**Table B3**—Area of accessible forest land, in thousand acres, by forest type group and productivity class, New Mexico, 2008–2014.

| Forest-type group                     | Site-productivity class (cubic feet/acre/year) |                |                |              |             |           |            | Total all classes |
|---------------------------------------|------------------------------------------------|----------------|----------------|--------------|-------------|-----------|------------|-------------------|
|                                       | 0-19                                           | 20-49          | 50-84          | 85-119       | 120-164     | 165-224   | 225+       |                   |
| Pinyon / juniper group                | 13,476.1                                       | --             | --             | --           | --          | --        | --         | 13,476.1          |
| Douglas-fir group                     | 12.0                                           | 637.2          | 250.9          | 22.9         | --          | --        | --         | 923.1             |
| Ponderosa pine group                  | 51.3                                           | 2,177.7        | 349.5          | 12.7         | --          | --        | 6.3        | 2,597.5           |
| Fir / spruce / mountain hemlock group | 6.1                                            | 349.0          | 442.2          | 85.4         | 4.7         | --        | --         | 887.3             |
| Other western softwoods group         | 6.5                                            | 73.7           | 17.1           | --           | 5.5         | --        | --         | 102.7             |
| Elm / ash / cottonwood group          | 18.2                                           | 37.8           | 8.4            | --           | --          | --        | --         | 64.4              |
| Aspen / birch group                   | 6.5                                            | 183.6          | 181.0          | 24.0         | --          | --        | --         | 395.1             |
| Other hardwoods group                 | --                                             | 1.4            | --             | --           | --          | --        | --         | 1.4               |
| Woodland hardwoods group              | 4,785.7                                        | --             | --             | --           | --          | --        | --         | 4,785.7           |
| Exotic hardwoods group                | 7.0                                            | 7.0            | --             | --           | --          | --        | --         | 14.0              |
| Nonstocked                            | 1,272.5                                        | 165.5          | 17.8           | --           | --          | --        | --         | 1,455.8           |
| <b>All forest-type groups</b>         | <b>19,641.9</b>                                | <b>3,633.0</b> | <b>1,266.8</b> | <b>145.0</b> | <b>10.2</b> | <b>--</b> | <b>6.3</b> | <b>24,703.2</b>   |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

**Table B4**—Area of accessible forest land, in thousand acres, by forest type group, ownership group, and land status, New Mexico, 2008–2014.

| Forest-type group                     | Forest Service |                   | Other Federal |                   | State and local government |                   | Undifferentiated private |                   | All forest land |
|---------------------------------------|----------------|-------------------|---------------|-------------------|----------------------------|-------------------|--------------------------|-------------------|-----------------|
|                                       | Timber-land    | Other forest land | Timber-land   | Other forest land | Timber-land                | Other forest land | Timber-land              | Other forest land |                 |
| Pinyon / juniper group                | --             | 3,640.2           | --            | 1,727.1           | --                         | 1,140.0           | --                       | 6,968.9           | 13,476.1        |
| Douglas-fir group                     | 446.8          | 187.9             | --            | --                | 30.1                       | --                | 258.1                    | --                | 923.1           |
| Ponderosa pine group                  | 1,378.8        | 267.4             | 38.3          | 49.8              | 66.5                       | 6.5               | 768.9                    | 21.4              | 2,597.5         |
| Fir / spruce / mountain hemlock group | 442.3          | 226.8             | --            | --                | 24.1                       | --                | 194.2                    | --                | 887.3           |
| Other western softwoods group         | 56.4           | 8.8               | --            | --                | --                         | --                | 31.0                     | 6.5               | 102.7           |
| Elm / ash / cottonwood group          | 6.1            | --                | --            | --                | 7.6                        | 2.4               | 32.5                     | 15.8              | 64.4            |
| Aspen / birch group                   | 242.0          | 41.2              | --            | --                | 6.0                        | --                | 99.4                     | 6.5               | 395.1           |
| Other hardwoods group                 | --             | --                | --            | --                | 1.4                        | --                | --                       | --                | 1.4             |
| Woodland hardwoods group              | --             | 755.9             | --            | 1,348.5           | --                         | 811.6             | --                       | 1,869.7           | 4,785.7         |
| Exotic hardwoods group                | --             | --                | --            | --                | --                         | --                | 7.0                      | 7.0               | 14.0            |
| Nonstocked                            | 94.7           | 91.9              | --            | 688.2             | --                         | 163.3             | 47.5                     | 370.2             | 1,455.8         |
| <b>All forest-type groups</b>         | <b>2,667.0</b> | <b>5,220.2</b>    | <b>38.3</b>   | <b>3,813.5</b>    | <b>135.8</b>               | <b>2,123.8</b>    | <b>1,438.7</b>           | <b>9,266.0</b>    | <b>24,703.2</b> |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

**Table B5**—Area of accessible forest land, in thousand acres, by forest type group and stand-size class, New Mexico, 2008–2014.

| Forest-type group                     | Stand-size class |                 |                | Nonstocked     | All size classes |
|---------------------------------------|------------------|-----------------|----------------|----------------|------------------|
|                                       | Large diameter   | Medium diameter | Small diameter |                |                  |
| Pinyon / juniper group                | 11,543.4         | 1,545.0         | 387.7          | --             | 13,476.1         |
| Douglas-fir group                     | 826.2            | 79.1            | 17.7           | --             | 923.1            |
| Ponderosa pine group                  | 2,299.6          | 199.7           | 98.3           | --             | 2,597.5          |
| Fir / spruce / mountain hemlock group | 804.2            | 70.8            | 12.3           | --             | 887.3            |
| Other western softwoods group         | 96.7             | --              | 6.0            | --             | 102.7            |
| Elm / ash / cottonwood group          | 37.3             | 14.4            | 12.7           | --             | 64.4             |
| Aspen / birch group                   | 150.8            | 169.6           | 74.7           | --             | 395.1            |
| Other hardwoods group                 | --               | --              | 1.4            | --             | 1.4              |
| Woodland hardwoods group              | 746.4            | 341.0           | 3,698.2        | --             | 4,785.7          |
| Exotic hardwoods group                | --               | --              | 14.0           | --             | 14.0             |
| Nonstocked                            | --               | --              | --             | 1,455.8        | 1,455.8          |
| <b>All forest-type groups</b>         | <b>16,504.6</b>  | <b>2,419.7</b>  | <b>4,323.1</b> | <b>1,455.8</b> | <b>24,703.2</b>  |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

**Table B6**—Area of accessible forest land, in thousand acres, by forest type group and stand-age class, New Mexico, 2008–2014.

| Forest-type group                     | Non-stocked    | Stand-age class (years) |                |                |                |                |                |                |                |                |              |                | All classes     |
|---------------------------------------|----------------|-------------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|--------------|----------------|-----------------|
|                                       |                | 1-20                    | 21-40          | 41-60          | 61-80          | 81-100         | 101-120        | 121-140        | 141-160        | 161-180        | 181-200      | 201+           |                 |
| Pinyon / juniper group                | --             | 221.0                   | 360.2          | 917.5          | 1,702.1        | 2,153.1        | 1,802.9        | 1,766.6        | 1,388.7        | 1,160.6        | 787.7        | 1,215.8        | 13,476.1        |
| Douglas-fir group                     | --             | 17.7                    | --             | 1.7            | 81.0           | 224.1          | 210.6          | 141.0          | 98.0           | 27.5           | 48.6         | 72.7           | 923.1           |
| Ponderosa pine group                  | --             | 59.0                    | 51.8           | 68.5           | 417.9          | 776.2          | 595.8          | 350.5          | 117.3          | 83.0           | 46.6         | 31.1           | 2,597.5         |
| Fir / spruce / mountain hemlock group | --             | 12.3                    | --             | 6.7            | 56.0           | 208.5          | 196.8          | 153.1          | 73.3           | 86.8           | 64.5         | 29.4           | 887.3           |
| Other western softwoods group         | --             | --                      | 6.0            | --             | --             | 14.9           | 11.1           | 14.5           | 19.6           | 17.6           | 12.8         | 6.2            | 102.7           |
| Elm / ash / cottonwood group          | --             | 12.7                    | --             | --             | 16.0           | 15.6           | 13.7           | 2.1            | 4.4            | --             | --           | --             | 64.4            |
| Aspen / birch group                   | --             | 71.5                    | 3.1            | 9.1            | 102.3          | 94.4           | 93.3           | 12.1           | 9.2            | --             | --           | --             | 395.1           |
| Other hardwoods group                 | --             | 1.4                     | --             | --             | --             | --             | --             | --             | --             | --             | --           | --             | 1.4             |
| Woodland hardwoods group              | --             | 2,488.2                 | 964.8          | 405.6          | 260.9          | 222.8          | 150.5          | 110.9          | 95.1           | 17.2           | 17.2         | 42.5           | 4,785.7         |
| Exotic hardwoods group                | --             | 7.0                     | --             | --             | --             | --             | --             | --             | --             | --             | --           | --             | 14.0            |
| Nonstocked                            | 1,455.8        | --                      | --             | --             | --             | --             | --             | --             | --             | --             | --           | --             | 1,455.8         |
| <b>All forest-type groups</b>         | <b>1,455.8</b> | <b>2,900.8</b>          | <b>1,392.9</b> | <b>1,409.3</b> | <b>2,636.2</b> | <b>3,709.6</b> | <b>3,074.6</b> | <b>2,550.7</b> | <b>1,805.5</b> | <b>1,392.7</b> | <b>977.3</b> | <b>1,397.8</b> | <b>24,703.2</b> |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

**Table B7**—Area of accessible forest land, in thousand acres, by forest type group and stand origin, New Mexico, 2008–2014.

| Forest-type group                     | Stand origin    |                         | All forest land |
|---------------------------------------|-----------------|-------------------------|-----------------|
|                                       | Natural stands  | Artificial regeneration |                 |
| Pinyon / juniper group                | 13,476.1        | --                      | 13,476.1        |
| Douglas-fir group                     | 923.1           | --                      | 923.1           |
| Ponderosa pine group                  | 2,590.6         | 7.0                     | 2,597.5         |
| Fir / spruce / mountain hemlock group | 887.3           | --                      | 887.3           |
| Other western softwoods group         | 102.7           | --                      | 102.7           |
| Elm / ash / cottonwood group          | 64.4            | --                      | 64.4            |
| Aspen / birch group                   | 395.1           | --                      | 395.1           |
| Other hardwoods group                 | 1.4             | --                      | 1.4             |
| Woodland hardwoods group              | 4,777.0         | 8.7                     | 4,785.7         |
| Exotic hardwoods group                | 14.0            | --                      | 14.0            |
| Nonstocked                            | 1,455.8         | --                      | 1,455.8         |
| <b>All forest-type groups</b>         | <b>24,687.5</b> | <b>15.7</b>             | <b>24,703.2</b> |

All table cells without observations in the inventory sample are indicated by --.

Table value of 0.0 indicates the acres round to less than 0.1 thousand acres.

Columns and rows may not add to their totals due to rounding.

**Table B8**—Area of forest land. In thousand acres, by forest type group and primary disturbance class, New Mexico, 2008–2014.

| Forest-type group                     | Disturbance class |                |              |              |              |                  |              |             |             |              |             | All forest land |
|---------------------------------------|-------------------|----------------|--------------|--------------|--------------|------------------|--------------|-------------|-------------|--------------|-------------|-----------------|
|                                       | None              | Insects        | Disease      | Fire         | Wild animals | Domestic animals | Weather      | Vegetation  | Other       | Human        | Geological  |                 |
| Pinyon / juniper group                | 11,664.4          | 560.3          | 279.4        | 164.7        | 13.7         | 340.3            | 272.0        | 10.7        | 46.8        | 107.0        | 17.0        | 13,476.1        |
| Douglas-fir group                     | 659.4             | 149.0          | 72.6         | 23.5         | -            | --               | 11.0         | --          | --          | 7.5          | --          | 923.1           |
| Ponderosa pine group                  | 2,143.8           | 26.7           | 158.4        | 193.3        | 5.7          | 11.0             | 32.9         | 18.9        | --          | 6.9          | --          | 2,597.5         |
| Fir / spruce / mountain hemlock group | 609.4             | 178.9          | 50.0         | 4.2          | --           | 22.7             | 16.0         | --          | 6.1         | --           | --          | 887.3           |
| Other western softwoods group         | 90.2              | 12.5           | --           | --           | --           | --               | --           | --          | --          | --           | --          | 102.7           |
| Elm / ash / cottonwood group          | 52.4              | --             | 6.1          | --           | --           | --               | --           | --          | --          | 5.9          | --          | 64.4            |
| Aspen / birch group                   | 232.0             | 63.2           | 49.9         | 31.9         | 6.0          | 12.1             | --           | --          | --          | --           | --          | 395.1           |
| Other hardwoods group                 | 1.4               | --             | --           | --           | --           | --               | --           | --          | --          | --           | --          | 1.4             |
| Woodland hardwoods group              | 4,118.6           | 38.0           | 63.2         | 116.4        | 3.3          | 264.8            | 141.4        | --          | --          | 34.0         | 6.1         | 4,785.7         |
| Exotic hardwoods group                | 14.0              | --             | --           | --           | --           | --               | --           | --          | --          | --           | --          | 14.0            |
| Nonstocked                            | 1,206.8           | 9.7            | 6.3          | 100.7        | --           | 66.0             | 35.1         | --          | --          | 26.7         | 4.6         | 1,455.8         |
| <b>All forest-type groups</b>         | <b>20,792.5</b>   | <b>1,038.3</b> | <b>685.8</b> | <b>634.6</b> | <b>28.7</b>  | <b>716.9</b>     | <b>508.4</b> | <b>29.5</b> | <b>52.8</b> | <b>187.9</b> | <b>27.7</b> | <b>24,703.2</b> |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

**Table B9**—Area of timberland, in thousand acres, by forest type group and stand-size class, New Mexico, 2008–2014.

| Forest-type group                     | Stand-size class |                 |                |              | All size classes |
|---------------------------------------|------------------|-----------------|----------------|--------------|------------------|
|                                       | Large diameter   | Medium diameter | Small diameter | Nonstocked   |                  |
| Douglas-fir group                     | 651.6            | 65.8            | 17.7           | --           | 735.1            |
| Ponderosa pine group                  | 2,022.7          | 150.8           | 78.8           | --           | 2,252.4          |
| Fir / spruce / mountain hemlock group | 598.5            | 49.7            | 12.3           | --           | 660.5            |
| Other western softwoods group         | 87.4             | --              | --             | --           | 87.4             |
| Elm / ash / cottonwood group          | 31.3             | 7.6             | 7.2            | --           | 46.2             |
| Aspen / birch group                   | 141.7            | 144.8           | 61.0           | --           | 347.4            |
| Other hardwoods group                 | --               | --              | 1.4            | --           | 1.4              |
| Exotic hardwoods group                | --               | --              | 7.0            | --           | 7.0              |
| Nonstocked                            | --               | --              | --             | 142.2        | 142.2            |
| <b>All forest-type groups</b>         | <b>3,533.1</b>   | <b>418.8</b>    | <b>185.5</b>   | <b>142.2</b> | <b>4,279.7</b>   |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

**Table B10**—Number of live trees (at least 1 inch d.b.h./d.r.c.), in thousand trees, on forest land by species group and diameter class, New Mexico, 2008–2014.

| Species group                   | Diameter class (inches) |             |             |             |              |               |               |               |               |               |               |               |               |               |       |           | All classes |
|---------------------------------|-------------------------|-------------|-------------|-------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|-------|-----------|-------------|
|                                 | 1.0-<br>2.9             | 3.0-<br>4.9 | 5.0-<br>6.9 | 7.0-<br>8.9 | 9.0-<br>10.9 | 11.0-<br>12.9 | 13.0-<br>14.9 | 15.0-<br>16.9 | 17.0-<br>18.9 | 19.0-<br>20.9 | 21.0-<br>24.9 | 25.0-<br>28.9 | 29.0-<br>32.9 | 33.0-<br>36.9 | 37.0+ |           |             |
| Softwood species groups         |                         |             |             |             |              |               |               |               |               |               |               |               |               |               |       |           |             |
| Western softwood species groups |                         |             |             |             |              |               |               |               |               |               |               |               |               |               |       |           |             |
| Douglas-fir                     | 109,157                 | 64,223      | 46,382      | 35,424      | 25,448       | 18,482        | 12,321        | 7,893         | 4,982         | 2,941         | 3,829         | 1,361         | 646           | 149           | 42    | 333,277   |             |
| Ponderosa and Jeffrey pine      | 139,812                 | 98,802      | 90,307      | 80,885      | 62,917       | 45,762        | 31,969        | 19,822        | 11,956        | 7,829         | 7,138         | 2,163         | 498           | 242           | 81    | 600,184   |             |
| True fir                        | 118,667                 | 52,788      | 33,894      | 23,104      | 16,771       | 11,585        | 7,848         | 4,506         | 2,740         | 1,678         | 1,929         | 481           | 267           | --            | --    | 276,257   |             |
| Engelmann and other spruces     | 52,369                  | 41,413      | 23,809      | 19,834      | 15,407       | 11,188        | 7,180         | 5,211         | 2,545         | 1,286         | 1,063         | 269           | 73            | --            | --    | 181,646   |             |
| Other western softwoods         | 19,499                  | 11,494      | 9,098       | 6,641       | 4,371        | 3,504         | 2,001         | 987           | 892           | 444           | 510           | 152           | --            | --            | --    | 59,592    |             |
| Other                           |                         |             |             |             |              |               |               |               |               |               |               |               |               |               |       |           |             |
| Western woodland softwoods      | 869,482                 | 594,835     | 436,333     | 326,895     | 214,943      | 141,676       | 92,677        | 59,830        | 40,469        | 25,804        | 23,817        | 8,579         | 3,093         | 1,505         | 904   | 2,840,841 |             |
| All softwoods                   | 1,308,985               | 863,555     | 639,823     | 492,782     | 339,857      | 232,197       | 153,995       | 98,249        | 63,585        | 39,982        | 38,285        | 13,004        | 4,576         | 1,896         | 1,027 | 4,291,798 |             |
| Hardwood species groups         |                         |             |             |             |              |               |               |               |               |               |               |               |               |               |       |           |             |
| Western hardwood species groups |                         |             |             |             |              |               |               |               |               |               |               |               |               |               |       |           |             |
| Cottonwood and aspen            | 42,653                  | 34,054      | 29,623      | 22,852      | 17,028       | 8,294         | 3,610         | 2,195         | 941           | 443           | 350           | 82            | 43            | 44            | --    | 162,214   |             |
| Other western hardwoods         | 5,027                   | 2,478       | 443         | 210         | 33           | 67            | --            | --            | --            | --            | --            | --            | --            | --            | --    | 8,257     |             |
| Other                           |                         |             |             |             |              |               |               |               |               |               |               |               |               |               |       |           |             |
| Western woodland hardwoods      | 1,463,848               | 381,315     | 126,154     | 52,957      | 23,614       | 11,807        | 5,771         | 3,453         | 2,321         | 995           | 901           | 334           | 36            | 78            | 42    | 2,073,628 |             |
| All hardwoods                   | 1,511,528               | 417,847     | 156,220     | 76,020      | 40,674       | 20,169        | 9,381         | 5,648         | 3,263         | 1,438         | 1,252         | 416           | 79            | 122           | 42    | 2,244,098 |             |
| All species groups              | 2,820,513               | 1,281,402   | 796,043     | 568,802     | 380,531      | 252,365       | 163,376       | 103,897       | 66,847        | 41,420        | 39,537        | 13,419        | 4,656         | 2,018         | 1,069 | 6,535,896 |             |

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates the number of trees rounds to less than 1 thousand trees. Columns and rows may not add to their totals due to rounding.

**Table B11**—Number of growing stock trees (at least 5 inches d.b.h.), in thousand trees, on timberland by species group and diameter class, New Mexico, 2008–2014.

| Species group                   | Diameter class (inches) |         |         |        |        |        |        |       |       |       |       |       |       | All classes |
|---------------------------------|-------------------------|---------|---------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------------|
|                                 | 5.0-                    | 7.0-    | 9.0-    | 11.0-  | 13.0-  | 15.0-  | 17.0-  | 19.0- | 21.0- | 25.0- | 29.0- | 33.0- |       |             |
|                                 | 6.9                     | 8.9     | 10.9    | 12.9   | 14.9   | 16.9   | 18.9   | 20.9  | 24.9  | 28.9  | 32.9  | 36.9  | 37.0+ |             |
| Softwood species groups         |                         |         |         |        |        |        |        |       |       |       |       |       |       |             |
| Western softwood species groups |                         |         |         |        |        |        |        |       |       |       |       |       |       |             |
| Douglas-fir                     | 35,192                  | 27,492  | 19,492  | 13,343 | 8,882  | 5,385  | 3,830  | 1,934 | 2,783 | 697   | 350   | 74    | 42    | 119,494     |
| Ponderosa and Jeffrey pine      | 61,495                  | 57,705  | 45,039  | 32,986 | 22,331 | 13,462 | 8,388  | 5,185 | 4,898 | 1,364 | 345   | 242   | 81    | 253,522     |
| True fir                        | 24,139                  | 16,999  | 13,154  | 9,214  | 5,545  | 3,340  | 1,767  | 1,172 | 1,324 | 334   | 267   | --    | --    | 77,254      |
| Engelmann and other spruces     | 16,144                  | 13,817  | 11,275  | 6,984  | 4,880  | 3,388  | 1,266  | 774   | 224   | 158   | 73    | --    | --    | 58,985      |
| Other western softwoods         | 6,772                   | 4,828   | 3,346   | 2,680  | 1,368  | 661    | 560    | 305   | 473   | 152   | --    | --    | --    | 21,145      |
| All softwoods                   | 143,742                 | 120,841 | 92,305  | 65,207 | 43,006 | 26,237 | 15,811 | 9,369 | 9,701 | 2,705 | 1,035 | 316   | 123   | 530,400     |
| Hardwood species groups         |                         |         |         |        |        |        |        |       |       |       |       |       |       |             |
| Western hardwood species groups |                         |         |         |        |        |        |        |       |       |       |       |       |       |             |
| Cottonwood and aspen            | 20,541                  | 18,202  | 14,039  | 7,022  | 3,044  | 1,791  | 639    | 299   | 279   | 82    | --    | 44    | --    | 65,982      |
| Other western hardwoods         | 75                      | 34      | --      | 34     | --     | --     | --     | --    | --    | --    | --    | --    | --    | 143         |
| All hardwoods                   | 20,615                  | 18,236  | 14,039  | 7,056  | 3,044  | 1,791  | 639    | 299   | 279   | 82    | --    | 44    | --    | 66,124      |
| All species groups              | 164,357                 | 139,077 | 106,344 | 72,264 | 46,050 | 28,028 | 16,450 | 9,669 | 9,980 | 2,787 | 1,035 | 360   | 123   | 596,524     |

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates the number of trees rounds to less than 1 thousand trees. Columns and rows may not add to their totals due to rounding.

**Table B12**—Net volume of all live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, by owner class and forest land status, New Mexico, 2008–2014.

| Owner class                       | Unreserved forests |              |          | Reserved forests |              |         | All forest land |
|-----------------------------------|--------------------|--------------|----------|------------------|--------------|---------|-----------------|
|                                   | Timberland         | Unproductive | Total    | Productive       | Unproductive | Total   |                 |
| Forest Service                    |                    |              |          |                  |              |         |                 |
| National Forest                   | 4,871.8            | 2,711.1      | 7,582.9  | 1,830.0          | 334.3        | 2,164.3 | 9,747.2         |
| National Grassland                | --                 | 2.1          | 2.1      | --               | --           | --      | 2.1             |
| Other Forest Service              | 143.8              | --           | 143.8    | 0.2              | --           | 0.2     | 144.1           |
| Other Federal                     |                    |              |          |                  |              |         |                 |
| National Park Service             | --                 | --           | --       | 18.9             | 24.9         | 43.8    | 43.8            |
| Bureau of Land Management         | 46.5               | 581.4        | 627.9    | --               | 83.5         | 83.5    | 711.4           |
| U.S. Fish and Wildlife Service    | --                 | --           | --       | --               | 10.5         | 10.5    | 10.5            |
| Departments of Defense and Energy | --                 | 52.0         | 52.0     | --               | --           | --      | 52.0            |
| Other Federal                     | --                 | 0.2          | 0.2      | --               | 5.2          | 5.2     | 5.4             |
| State and local government        |                    |              |          |                  |              |         |                 |
| State                             | 218.6              | 549.6        | 768.2    | 13.7             | 5.0          | 18.7    | 786.9           |
| County and Municipal              | --                 | 6.6          | 6.6      | --               | --           | --      | 6.6             |
| Private                           |                    |              |          |                  |              |         |                 |
| Undifferentiated private          | 2,360.9            | 3,717.0      | 6,077.9  | --               | --           | --      | 6,077.9         |
| All owners                        | 7,641.7            | 7,620.0      | 15,261.6 | 1,862.9          | 463.3        | 2,326.2 | 17,587.9        |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B13**—Net volume of all live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by forest type group and stand-size class, New Mexico, 2008–2014.

| Forest-type group                     | Stand-size class |                 |                |             | All size classes |
|---------------------------------------|------------------|-----------------|----------------|-------------|------------------|
|                                       | Large diameter   | Medium diameter | Small diameter | Nonstocked  |                  |
| Pinyon / juniper group                | 6,547.6          | 608.2           | 34.4           | --          | 7,190.2          |
| Douglas-fir group                     | 1,912.4          | 119.2           | 6.6            | --          | 2,038.3          |
| Ponderosa pine group                  | 3,876.9          | 153.4           | 33.5           | --          | 4,063.8          |
| Fir / spruce / mountain hemlock group | 2,376.8          | 97.2            | 0.8            | --          | 2,474.8          |
| Other western softwoods group         | 182.5            | --              | 0.8            | --          | 183.3            |
| Elm / ash / cottonwood group          | 45.1             | 7.1             | 0.8            | --          | 53.0             |
| Aspen / birch group                   | 450.1            | 319.3           | 9.4            | --          | 778.7            |
| Woodland hardwoods group              | 415.7            | 153.2           | 201.1          | --          | 769.9            |
| Exotic hardwoods group                | --               | --              | 1.1            | --          | 1.1              |
| Nonstocked                            | --               | --              | --             | 34.7        | 34.7             |
| <b>All forest-type groups</b>         | <b>15,807.1</b>  | <b>1,457.6</b>  | <b>288.5</b>   | <b>34.7</b> | <b>17,587.9</b>  |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B14**—Net volume of all live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by species group and ownership group, New Mexico, 2008–2014.

| Species group                   | Ownership group |               |                            |                          | All owners |
|---------------------------------|-----------------|---------------|----------------------------|--------------------------|------------|
|                                 | Forest Service  | Other Federal | State and local government | Undifferentiated private |            |
| Softwood species groups         |                 |               |                            |                          |            |
| Western softwood species groups |                 |               |                            |                          |            |
| Douglas-fir                     | 1,526.8         | 1.7           | 53.2                       | 480.4                    | 2,062.1    |
| Ponderosa and Jeffrey pine      | 2,940.7         | 80.0          | 102.4                      | 1,456.1                  | 4,579.2    |
| True fir                        | 921.3           | --            | 38.7                       | 247.6                    | 1,207.6    |
| Engelmann and other spruces     | 995.1           | --            | 18.4                       | 248.7                    | 1,262.2    |
| Other western softwoods         | 209.1           | --            | 0.4                        | 71.5                     | 281.1      |
| Other                           |                 |               |                            |                          |            |
| Western woodland softwoods      | 2,298.3         | 715.8         | 526.1                      | 3,140.2                  | 6,680.5    |
| All softwoods                   | 8,891.4         | 797.5         | 739.3                      | 5,644.4                  | 16,072.6   |
| Hardwood species groups         |                 |               |                            |                          |            |
| Western hardwood species groups |                 |               |                            |                          |            |
| Cottonwood and aspen            | 610.0           | --            | 32.4                       | 214.9                    | 857.3      |
| Other western hardwoods         | 1.4             | --            | --                         | 0.2                      | 1.6        |
| Other                           |                 |               |                            |                          |            |
| Western woodland hardwoods      | 390.5           | 25.7          | 21.8                       | 218.4                    | 656.3      |
| All hardwoods                   | 1,001.9         | 25.7          | 54.2                       | 433.4                    | 1,515.2    |
| All species groups              | 9,893.3         | 823.1         | 793.5                      | 6,077.9                  | 17,587.9   |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B15**—Net volume of all live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by species group and diameter class, New Mexico, 2008–2014.

|                                 | 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 | 21.0-24.9 | 25.0-28.9 | 29.0-32.9 | 33.0-36.9 | 37.0+ |             |
| Species group                   | 6.9                     | 8.9     | 10.9     | 12.9      | 14.9      | 16.9      | 18.9      | 20.9      | 24.9      | 28.9      | 32.9      | 36.9      | 37.0+ |             |
| Softwood species groups         |                         |         |          |           |           |           |           |           |           |           |           |           |       |             |
| Western softwood species groups |                         |         |          |           |           |           |           |           |           |           |           |           |       |             |
| Douglas-fir                     | 81                      | 152     | 208      | 246       | 240       | 224       | 193       | 147       | 284       | 141       | 102       | 30        | 13    | 2,062       |
| Ponderosa and Jeffrey pine      | 130                     | 315     | 477      | 588       | 617       | 551       | 465       | 402       | 590       | 270       | 89        | 61        | 25    | 4,579       |
| True fir                        | 55                      | 101     | 140      | 166       | 178       | 140       | 115       | 83        | 137       | 52        | 41        | --        | --    | 1,208       |
| Engelmann and other spruces     | 46                      | 106     | 159      | 192       | 183       | 196       | 130       | 85        | 107       | 42        | 16        | --        | --    | 1,262       |
| Other western softwoods         | 16                      | 27      | 33       | 40        | 35        | 27        | 34        | 19        | 34        | 15        | --        | --        | --    | 281         |
| Other                           |                         |         |          |           |           |           |           |           |           |           |           |           |       |             |
| Western woodland softwoods      | 524                     | 814     | 928      | 885       | 792       | 676       | 574       | 434       | 497       | 262       | 137       | 78        | 79    | 6,680       |
| All softwoods                   | 852                     | 1,516   | 1,945    | 2,117     | 2,045     | 1,814     | 1,512     | 1,171     | 1,649     | 782       | 385       | 169       | 116   | 16,073      |
| Hardwood species groups         |                         |         |          |           |           |           |           |           |           |           |           |           |       |             |
| Western hardwood species groups |                         |         |          |           |           |           |           |           |           |           |           |           |       |             |
| Cottonwood and aspen            | 68                      | 141     | 191      | 153       | 101       | 87        | 44        | 27        | 23        | 7         | 7         | 8         | --    | 857         |
| Other western hardwoods         | 1                       | 1       | 0        | 0         | --        | --        | --        | --        | --        | --        | --        | --        | --    | 2           |
| Other                           |                         |         |          |           |           |           |           |           |           |           |           |           |       |             |
| Western woodland hardwoods      | 153                     | 126     | 92       | 73        | 56        | 46        | 35        | 23        | 29        | 11        | 1         | 7         | 3     | 656         |
| All hardwoods                   | 222                     | 268     | 283      | 226       | 157       | 133       | 79        | 50        | 52        | 17        | 8         | 15        | 3     | 1,515       |
| All species groups              | 1,073                   | 1,784   | 2,228    | 2,344     | 2,202     | 1,947     | 1,590     | 1,221     | 1,702     | 799       | 393       | 184       | 120   | 17,588      |

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates the volume rounds to less than 1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B16**—Net volume of all live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by forest type group and stand origin, New Mexico, 2008–2014.

| Forest-type group                     | Stand origin    |                         | All forest land |
|---------------------------------------|-----------------|-------------------------|-----------------|
|                                       | Natural stands  | Artificial regeneration |                 |
| Pinyon / juniper group                | 7,190.2         | --                      | 7,190.2         |
| Douglas-fir group                     | 2,038.3         | --                      | 2,038.3         |
| Ponderosa pine group                  | 4,062.9         | 0.9                     | 4,063.8         |
| Fir / spruce / mountain hemlock group | 2,474.8         | --                      | 2,474.8         |
| Other western softwoods group         | 183.3           | --                      | 183.3           |
| Elm / ash / cottonwood group          | 53.0            | --                      | 53.0            |
| Aspen / birch group                   | 778.7           | --                      | 778.7           |
| Woodland hardwoods group              | 769.9           | --                      | 769.9           |
| Exotic hardwoods group                | 1.1             | --                      | 1.1             |
| Nonstocked                            | 34.7            | --                      | 34.7            |
| <b>All forest-type groups</b>         | <b>17,586.9</b> | <b>0.9</b>              | <b>17,587.9</b> |

All table cells without observations in the inventory sample are indicated by --.  
Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet.  
Columns and rows may not add to their totals due to rounding.

**Table B17**—Net volume of growing stock trees (at least 5 inches d.b.h.), in million cubic feet, on timberland by species group and diameter class, New Mexico, 2008–2014.

| Species group                   | 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 | 21.0-24.9 | 25.0-28.9 | 29.0-32.9 | 33.0-36.9 | 37.0+ |             |
| Softwood species groups         |                         |         |          |           |           |           |           |           |           |           |           |           |       |             |
| Western softwood species groups |                         |         |          |           |           |           |           |           |           |           |           |           |       |             |
| Douglas-fir                     | 61                      | 119     | 160      | 178       | 176       | 156       | 150       | 98        | 210       | 75        | 58        | 12        | 13    | 1,466       |
| Ponderosa and Jeffrey pine      | 92                      | 235     | 354      | 435       | 451       | 386       | 333       | 260       | 398       | 173       | 60        | 61        | 25    | 3,263       |
| True fir                        | 38                      | 73      | 106      | 128       | 119       | 103       | 72        | 63        | 98        | 37        | 41        | --        | --    | 879         |
| Engelmann and other spruces     | 31                      | 73      | 114      | 117       | 122       | 124       | 64        | 45        | 21        | 23        | 16        | --        | --    | 749         |
| Other western softwoods         | 12                      | 20      | 25       | 31        | 25        | 17        | 23        | 15        | 32        | 15        | --        | --        | --    | 215         |
| All softwoods                   | 234                     | 520     | 759      | 890       | 892       | 785       | 642       | 481       | 760       | 323       | 175       | 73        | 38    | 6,572       |
| Hardwood species groups         |                         |         |          |           |           |           |           |           |           |           |           |           |       |             |
| Western hardwood species groups |                         |         |          |           |           |           |           |           |           |           |           |           |       |             |
| Cottonwood and aspen            | 49                      | 116     | 162      | 131       | 87        | 73        | 34        | 20        | 20        | 7         | --        | 8         | --    | 707         |
| Other western hardwoods         | 0                       | 0       | --       | 0         | --        | --        | --        | --        | --        | --        | --        | --        | --    | 0           |
| All hardwoods                   | 49                      | 116     | 162      | 132       | 87        | 73        | 34        | 20        | 20        | 7         | --        | 8         | --    | 707         |
| All species groups              | 283                     | 636     | 921      | 1,021     | 980       | 858       | 676       | 501       | 779       | 330       | 175       | 81        | 38    | 7,279       |

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates the volume rounds to less than 1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B18**—Net volume of growing stock trees (at least 5 inches d.b.h.), in million cubic feet, on timberland by species group and ownership group, New Mexico, 2008–2014.

| Species group                   | Ownership group |               |                            |                          | All owners |
|---------------------------------|-----------------|---------------|----------------------------|--------------------------|------------|
|                                 | Forest Service  | Other Federal | State and local government | Undifferentiated private |            |
| Softwood species groups         |                 |               |                            |                          |            |
| Western softwood species groups |                 |               |                            |                          |            |
| Douglas-fir                     | 1,008.9         | 0.4           | 53.1                       | 403.8                    | 1,466.2    |
| Ponderosa and Jeffrey pine      | 2,048.6         | 39.6          | 73.9                       | 1,100.7                  | 3,262.8    |
| True fir                        | 609.5           | --            | 34.1                       | 235.1                    | 878.6      |
| Engelmann and other spruces     | 483.9           | --            | 18.4                       | 247.1                    | 749.4      |
| Other western softwoods         | 149.7           | --            | 0.4                        | 65.0                     | 215.2      |
| All softwoods                   | 4,300.5         | 39.9          | 179.9                      | 2,051.8                  | 6,572.1    |
| Hardwood species groups         |                 |               |                            |                          |            |
| Western hardwood species groups |                 |               |                            |                          |            |
| Cottonwood and aspen            | 496.9           | --            | 30.3                       | 179.4                    | 706.6      |
| Other western hardwoods         | 0.5             | --            | --                         | 0.0                      | 0.5        |
| All hardwoods                   | 497.3           | --            | 30.3                       | 179.4                    | 707.1      |
| All species groups              | 4,797.9         | 39.9          | 210.2                      | 2,231.2                  | 7,279.2    |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B19**—Net volume of sawtimber trees, in million board feet (International 1/4-inch rule), on timberland by species group and diameter class, New Mexico, 2008–2014.

| Species group                   | Diameter class (inches) |           |           |           |           |           |           |           |           |           |       | 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 | 21.0-24.9 | 25.0-28.9 | 29.0-32.9 | 33.0-36.9 | 37.0+ |             |
| Softwood species groups         |                         |           |           |           |           |           |           |           |           |           |       |             |
| Western softwood species groups |                         |           |           |           |           |           |           |           |           |           |       |             |
| Douglas-fir                     | 529                     | 767       | 861       | 819       | 824       | 549       | 1,220     | 432       | 357       | 75        | 83    | 6,517       |
| Ponderosa and Jeffrey pine      | 1,200                   | 1,919     | 2,293     | 2,098     | 1,946     | 1,563     | 2,396     | 1,032     | 389       | 380       | 159   | 15,374      |
| True fir                        | 411                     | 581       | 579       | 516       | 372       | 335       | 523       | 198       | 209       | --        | --    | 3,724       |
| Engelmann and other spruces     | 490                     | 593       | 662       | 692       | 369       | 258       | 119       | 135       | 92        | --        | --    | 3,411       |
| Other western softwoods         | 79                      | 126       | 115       | 86        | 125       | 79        | 185       | 93        | --        | --        | --    | 888         |
| All softwoods                   | 2,709                   | 3,986     | 4,510     | 4,211     | 3,637     | 2,784     | 4,443     | 1,889     | 1,047     | 455       | 242   | 29,913      |
| Hardwood species groups         |                         |           |           |           |           |           |           |           |           |           |       |             |
| Western hardwood species groups |                         |           |           |           |           |           |           |           |           |           |       |             |
| Cottonwood and aspen            | --                      | 697       | 487       | 426       | 189       | 115       | 110       | 33        | --        | 46        | --    | 2,104       |
| Other western hardwoods         | --                      | 1         | --        | --        | --        | --        | --        | --        | --        | --        | --    | 1           |
| All hardwoods                   | --                      | 698       | 487       | 426       | 189       | 115       | 110       | 33        | --        | 46        | --    | 2,105       |
| All species groups              | 2,709                   | 4,683     | 4,997     | 4,637     | 3,826     | 2,899     | 4,553     | 1,922     | 1,047     | 502       | 242   | 32,019      |

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates the volume rounds to less than 1 million board feet. Columns and rows may not add to their totals due to rounding.

**Table B20**—Net volume of sawlog portion of sawtimber trees, in million cubic feet, on timberland by species group and ownership group, New Mexico, 2008–2014.

| Species group                   | Ownership group |               |                            |                          | All owners |
|---------------------------------|-----------------|---------------|----------------------------|--------------------------|------------|
|                                 | Forest Service  | Other Federal | State and local government | Undifferentiated private |            |
| Softwood species groups         |                 |               |                            |                          |            |
| Western softwood species groups |                 |               |                            |                          |            |
| Douglas-fir                     | 869.7           | 0.3           | 40.1                       | 311.2                    | 1,221.4    |
| Ponderosa and Jeffrey pine      | 1,763.4         | 34.8          | 61.5                       | 946.7                    | 2,806.4    |
| True fir                        | 508.4           | --            | 29.8                       | 190.4                    | 728.6      |
| Engelmann and other spruces     | 397.6           | --            | 15.3                       | 194.8                    | 607.6      |
| Other western softwoods         | 123.4           | --            | --                         | 52.0                     | 175.4      |
| All softwoods                   | 3,662.5         | 35.1          | 146.8                      | 1,695.0                  | 5,539.4    |
| Hardwood species groups         |                 |               |                            |                          |            |
| Western hardwood species groups |                 |               |                            |                          |            |
| Cottonwood and aspen            | 247.1           | --            | 10.7                       | 71.9                     | 329.7      |
| Other western hardwoods         | 0.2             | --            | --                         | --                       | 0.2        |
| All hardwoods                   | 247.3           | --            | 10.7                       | 71.9                     | 329.9      |
| All species groups              | 3,909.8         | 35.1          | 157.5                      | 1,766.9                  | 5,869.3    |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B21**—Average annual net growth of all live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, by owner class and forest land status, New Mexico, 2008–2014.

| Owner class                       | Unreserved forests |              |       | Reserved forests |              |       | All forest land |
|-----------------------------------|--------------------|--------------|-------|------------------|--------------|-------|-----------------|
|                                   | Timberland         | Unproductive | Total | Productive       | Unproductive | Total |                 |
| Forest Service                    |                    |              |       |                  |              |       |                 |
| National Forest                   | 14.4               | 5.6          | 20.0  | -0.5             | 0.4          | -0.1  | 19.9            |
| National Grassland                | --                 | 0.0          | 0.0   | --               | --           | --    | 0.0             |
| Other Forest Service              | 1.7                | --           | 1.7   | -1.0             | --           | -1.0  | 0.7             |
| Other Federal                     |                    |              |       |                  |              |       |                 |
| National Park Service             | --                 | --           | --    | -0.1             | 0.1          | 0.0   | 0.0             |
| Bureau of Land Management         | 0.3                | 2.2          | 2.5   | --               | 0.4          | 0.4   | 2.9             |
| U.S. Fish and Wildlife Service    | --                 | --           | --    | --               | 0.3          | 0.3   | 0.3             |
| Departments of Defense and Energy | --                 | 0.4          | 0.4   | --               | --           | --    | 0.4             |
| Other Federal                     | --                 | 0.0          | 0.0   | --               | 0.0          | 0.0   | 0.1             |
| State and local government        |                    |              |       |                  |              |       |                 |
| State                             | 2.3                | 3.7          | 6.0   | 0.2              | 0.0          | 0.2   | 6.2             |
| County and Municipal              | --                 | 0.0          | 0.0   | --               | --           | --    | 0.0             |
| Private                           |                    |              |       |                  |              |       |                 |
| Undifferentiated private          | 26.2               | 31.2         | 57.4  | --               | --           | --    | 57.4            |
| All owners                        | 44.9               | 43.1         | 88.0  | -1.4             | 1.2          | -0.1  | 87.8            |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B22**—Average annual net growth of all live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by forest type group and stand-size class, New Mexico, 2008–2014.

| Forest-type group                     | Stand-size class |                 |                |              | All size classes |
|---------------------------------------|------------------|-----------------|----------------|--------------|------------------|
|                                       | Large diameter   | Medium diameter | Small diameter | Nonstocked   |                  |
| Pinyon / juniper group                | 36.1             | 9.8             | -0.1           | --           | 45.8             |
| Douglas-fir group                     | 6.9              | 1.7             | 0.1            | --           | 8.7              |
| Ponderosa pine group                  | 39.1             | 3.1             | 0.9            | --           | 43.0             |
| Fir / spruce / mountain hemlock group | -0.7             | 1.2             | 0.1            | --           | 0.6              |
| Other western softwoods group         | -0.9             | --              | 0.0            | --           | -0.9             |
| Elm / ash / cottonwood group          | 0.5              | 0.2             | 0.0            | --           | 0.7              |
| Aspen / birch group                   | 2.2              | 5.0             | -6.8           | --           | 0.4              |
| Woodland hardwoods group              | 2.2              | 2.4             | -2.8           | --           | 1.8              |
| Exotic hardwoods group                | --               | --              | -0.2           | --           | -0.2             |
| Nonstocked                            | --               | --              | --             | -12.2        | -12.2            |
| <b>All forest-type groups</b>         | <b>85.4</b>      | <b>23.4</b>     | <b>-8.9</b>    | <b>-12.2</b> | <b>87.8</b>      |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B23**—Average annual net growth of all live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by species group and ownership group, New Mexico, 2008–2014.

| Species group                   | Ownership group |               |                            |                          | All owners |
|---------------------------------|-----------------|---------------|----------------------------|--------------------------|------------|
|                                 | Forest Service  | Other Federal | State and local government | Undifferentiated private |            |
| Softwood species groups         |                 |               |                            |                          |            |
| Western softwood species groups |                 |               |                            |                          |            |
| Douglas-fir                     | 2.3             | 0.0           | 0.0                        | 5.5                      | 7.8        |
| Ponderosa and Jeffrey pine      | 17.6            | 0.1           | 1.2                        | 18.8                     | 37.8       |
| True fir                        | -8.6            | --            | 0.2                        | -0.3                     | -8.6       |
| Engelmann and other spruces     | -2.1            | --            | 0.0                        | 1.8                      | -0.2       |
| Other western softwoods         | 0.4             | --            | 0.0                        | 1.0                      | 1.3        |
| Other                           |                 |               |                            |                          |            |
| Western woodland softwoods      | 7.0             | 3.0           | 3.8                        | 25.5                     | 39.3       |
| All softwoods                   | 16.6            | 3.2           | 5.2                        | 52.3                     | 77.4       |
| Hardwood species groups         |                 |               |                            |                          |            |
| Western hardwood species groups |                 |               |                            |                          |            |
| Cottonwood and aspen            | 1.0             | --            | 0.6                        | 2.1                      | 3.7        |
| Other western hardwoods         | 0.0             | --            | --                         | 0.0                      | 0.0        |
| Other                           |                 |               |                            |                          |            |
| Western woodland hardwoods      | 3.1             | 0.3           | 0.4                        | 2.9                      | 6.8        |
| All hardwoods                   | 4.1             | 0.3           | 1.0                        | 5.0                      | 10.4       |
| All species groups              | 20.7            | 3.5           | 6.2                        | 57.4                     | 87.8       |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B24**—Average annual net growth of growing stock trees (at least 5 inches d.b.h.), in million cubic feet, on timberland by species group and ownership group, New Mexico, 2008–2014.

| Species group                   | Ownership group |               |                            |                          | All owners |
|---------------------------------|-----------------|---------------|----------------------------|--------------------------|------------|
|                                 | Forest Service  | Other Federal | State and local government | Undifferentiated private |            |
| Softwood species groups         |                 |               |                            |                          |            |
| Western softwood species groups |                 |               |                            |                          |            |
| Douglas-fir                     | 3.5             | 0.0           | 0.3                        | 5.1                      | 9.0        |
| Ponderosa and Jeffrey pine      | 17.0            | 0.2           | 1.0                        | 15.3                     | 33.6       |
| True fir                        | -5.0            | --            | 0.2                        | -0.5                     | -5.4       |
| Engelmann and other spruces     | -1.8            | --            | 0.0                        | 1.8                      | 0.0        |
| Other western softwoods         | -0.1            | --            | 0.0                        | 1.0                      | 0.9        |
| All softwoods                   | 13.7            | 0.2           | 1.5                        | 22.7                     | 38.1       |
| Hardwood species groups         |                 |               |                            |                          |            |
| Western hardwood species groups |                 |               |                            |                          |            |
| Cottonwood and aspen            | 1.5             | --            | 0.5                        | 2.7                      | 4.7        |
| Other western hardwoods         | 0.0             | --            | --                         | 0.0                      | 0.0        |
| All hardwoods                   | 1.5             | --            | 0.5                        | 2.7                      | 4.7        |
| All species groups              | 15.2            | 0.2           | 2.1                        | 25.4                     | 42.8       |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B25**—Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by owner class and forest land status, New Mexico, 2008–2014.

| Owner class                       | Unreserved forests |              |       | Reserved forests |              |       | All forest land |
|-----------------------------------|--------------------|--------------|-------|------------------|--------------|-------|-----------------|
|                                   | Timberland         | Unproductive | Total | Productive       | Unproductive | Total |                 |
| Forest Service                    |                    |              |       |                  |              |       |                 |
| National Forest                   | 64.5               | 27.2         | 91.6  | 24.8             | 4.4          | 29.2  | 120.8           |
| Other Forest Service              | 1.0                | --           | 1.0   | 1.0              | --           | 1.0   | 2.0             |
| Other Federal                     |                    |              |       |                  |              |       |                 |
| National Park Service             | --                 | --           | --    | 0.3              | 0.1          | 0.4   | 0.4             |
| Bureau of Land Management         | 0.2                | 2.6          | 2.9   | --               | 0.5          | 0.5   | 3.4             |
| U.S. Fish and Wildlife Service    | --                 | --           | --    | --               | 0.0          | 0.0   | 0.0             |
| Departments of Defense and Energy | --                 | 0.3          | 0.3   | --               | --           | --    | 0.3             |
| State and local government        |                    |              |       |                  |              |       |                 |
| State                             | 1.7                | 2.0          | 3.7   | 0.0              | -            | 0.0   | 3.7             |
| County and Municipal              | --                 | 0.1          | 0.1   | --               | --           | --    | 0.1             |
| Private                           |                    |              |       |                  |              |       |                 |
| Undifferentiated private          | 16.5               | 18.4         | 34.9  | --               | --           | --    | 34.9            |
| All owners                        | 83.9               | 50.7         | 134.6 | 26.2             | 5.0          | 31.2  | 165.7           |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B26**—Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by forest type group and stand-size class, New Mexico, 2008–2014.

| Forest-type group                     | Stand-size class |                 |                |             | All size classes |
|---------------------------------------|------------------|-----------------|----------------|-------------|------------------|
|                                       | Large diameter   | Medium diameter | Small diameter | Nonstocked  |                  |
| Pinyon / juniper group                | 33.3             | 4.0             | 1.2            | --          | 38.5             |
| Douglas-fir group                     | 20.4             | 0.5             | 0.1            | --          | 21.0             |
| Ponderosa pine group                  | 20.7             | 1.3             | 0.5            | --          | 22.5             |
| Fir / spruce / mountain hemlock group | 36.0             | 1.1             | --             | --          | 37.1             |
| Other western softwoods group         | 3.3              | --              | --             | --          | 3.3              |
| Elm / ash / cottonwood group          | 0.4              | 0.0             | --             | --          | 0.4              |
| Aspen / birch group                   | 6.1              | 3.9             | 7.4            | --          | 17.5             |
| Woodland hardwoods group              | 3.2              | 1.5             | 7.7            | --          | 12.3             |
| Exotic hardwoods group                | --               | --              | 0.2            | --          | 0.2              |
| Nonstocked                            | --               | --              | --             | 12.9        | 12.9             |
| <b>All forest-type groups</b>         | <b>123.5</b>     | <b>12.2</b>     | <b>17.1</b>    | <b>12.9</b> | <b>165.7</b>     |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B27**—Average annual mortality of trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by species group and ownership group, New Mexico, 2008–2014.

| Species group                   | Ownership group |               |                            |                          | All owners |
|---------------------------------|-----------------|---------------|----------------------------|--------------------------|------------|
|                                 | Forest Service  | Other Federal | State and local government | Undifferentiated private |            |
| Softwood species groups         |                 |               |                            |                          |            |
| Western softwood species groups |                 |               |                            |                          |            |
| Douglas-fir                     | 19.3            | --            | 0.7                        | 3.6                      | 23.6       |
| Ponderosa and Jeffrey pine      | 27.4            | 0.8           | 0.7                        | 5.7                      | 34.6       |
| True fir                        | 24.1            | --            | 0.4                        | 5.2                      | 29.7       |
| Engelmann and other spruces     | 16.7            | --            | 0.1                        | 2.6                      | 19.5       |
| Other western softwoods         | 2.6             | --            | 0.0                        | 0.1                      | 2.7        |
| Other                           |                 |               |                            |                          |            |
| Western woodland softwoods      | 18.3            | 3.3           | 1.4                        | 12.5                     | 35.5       |
| All softwoods                   | 108.5           | 4.1           | 3.3                        | 29.7                     | 145.6      |
| Hardwood species groups         |                 |               |                            |                          |            |
| Western hardwood species groups |                 |               |                            |                          |            |
| Cottonwood and aspen            | 11.1            | --            | 0.4                        | 3.2                      | 14.6       |
| Other western hardwoods         | 0.0             | --            | --                         | 0.0                      | 0.0        |
| Other                           |                 |               |                            |                          |            |
| Western woodland hardwoods      | 3.3             | 0.0           | 0.2                        | 2.0                      | 5.5        |
| All hardwoods                   | 14.3            | 0.0           | 0.5                        | 5.2                      | 20.1       |
| All species groups              | 122.8           | 4.1           | 3.8                        | 34.9                     | 165.7      |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B28**—Average annual mortality of growing stock trees (at least 5 inches d.b.h.), in million cubic feet, on timberland by species group and ownership group, New Mexico, 2008–2014.

| Species group                   | Ownership group |               |                            |                          | All owners |
|---------------------------------|-----------------|---------------|----------------------------|--------------------------|------------|
|                                 | Forest Service  | Other Federal | State and local government | Undifferentiated private |            |
| Softwood species groups         |                 |               |                            |                          |            |
| Western softwood species groups |                 |               |                            |                          |            |
| Douglas-fir                     | 11.3            | --            | 0.3                        | 2.3                      | 13.9       |
| Ponderosa and Jeffrey pine      | 15.0            | 0.2           | 0.4                        | 2.7                      | 18.3       |
| True fir                        | 15.7            | --            | 0.3                        | 5.1                      | 21.1       |
| Engelmann and other spruces     | 10.0            | --            | 0.1                        | 2.6                      | 12.7       |
| Other western softwoods         | 2.1             | --            | 0.0                        | 0.1                      | 2.2        |
| All softwoods                   | 54.0            | 0.2           | 1.2                        | 12.8                     | 68.2       |
| Hardwood species groups         |                 |               |                            |                          |            |
| Western hardwood species groups |                 |               |                            |                          |            |
| Cottonwood and aspen            | 8.3             | --            | 0.3                        | 2.1                      | 10.7       |
| Other western hardwoods         | --              | --            | --                         | 0.0                      | 0.0        |
| All hardwoods                   | 8.3             | --            | 0.3                        | 2.1                      | 10.7       |
| All species groups              | 62.3            | 0.2           | 1.6                        | 14.9                     | 78.9       |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table B29**—Aboveground dry weight of all live trees (at least 1 inch d.b.h./d.r.c.), in thousand dry short tons, by owner class and forest land status, New Mexico, 2008–2014.

| Owner class                       | Unreserved forests |              |         | Reserved forests |              |        | All forest land |
|-----------------------------------|--------------------|--------------|---------|------------------|--------------|--------|-----------------|
|                                   | Timberland         | Unproductive | Total   | Productive       | Unproductive | Total  |                 |
| Forest Service                    |                    |              |         |                  |              |        |                 |
| National Forest                   | 90,991             | 48,320       | 139,311 | 32,522           | 6,430        | 38,952 | 178,262         |
| National Grassland                | --                 | 31           | 31      | --               | --           | --     | 31              |
| Other Forest Service              | 2,505              | --           | 2,505   | 4                | --           | 4      | 2,509           |
| Other Federal                     |                    |              |         |                  |              |        |                 |
| National Park Service             | --                 | --           | --      | 347              | 404          | 751    | 751             |
| Bureau of Land Management         | 837                | 10,306       | 11,144  | --               | 1,329        | 1,329  | 12,473          |
| U.S. Fish and Wildlife Service    | --                 | --           | --      | --               | 182          | 182    | 182             |
| Departments of Defense and Energy | --                 | 1,016        | 1,016   | --               | --           | --     | 1,016           |
| Other Federal                     | --                 | 43           | 43      | --               | 76           | 76     | 119             |
| State and local government        |                    |              |         |                  |              |        |                 |
| State                             | 4,247              | 9,312        | 13,559  | 271              | 88           | 359    | 13,918          |
| County and Municipal              | --                 | 110          | 110     | --               | --           | --     | 110             |
| Private                           |                    |              |         |                  |              |        |                 |
| Undifferentiated private          | 44,319             | 64,778       | 109,096 | --               | --           | --     | 109,096         |
| All owners                        | 142,899            | 133,915      | 276,815 | 33,143           | 8,509        | 41,652 | 318,466         |

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates the aboveground tree biomass rounds to less than 1 thousand dry tons. Columns and rows may not add to their totals due to rounding.

**Table B30**—Aboveground dry weight of all live trees (at least 1 inch d.b.h./d.r.c.), in thousand dry short tons, on forest land by species group and diameter class, New Mexico, 2008–2014.

| Species group                   | Diameter class (inches) |         |         |         |          |           |           |           |           |           |           |           |           |           |        | 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+  |             |
| Softwood species groups         |                         |         |         |         |          |           |           |           |           |           |           |           |           |           |        |             |
| Western softwood species groups |                         |         |         |         |          |           |           |           |           |           |           |           |           |           |        |             |
| Douglas-fir                     | 333                     | 1,048   | 1,696   | 3,132   | 4,219    | 4,961     | 4,805     | 4,462     | 3,828     | 2,913     | 3,415     | 2,174     | 1,519     | 1,240     | 2,836  | 42,581      |
| Ponderosa and Jeffrey pine      | 251                     | 989     | 2,434   | 5,794   | 8,657    | 10,559    | 11,011    | 9,779     | 8,220     | 7,089     | 6,196     | 4,171     | 2,610     | 2,111     | 3,039  | 82,908      |
| True fir                        | 304                     | 828     | 937     | 1,696   | 2,328    | 2,738     | 2,909     | 2,293     | 1,869     | 1,355     | 1,299     | 933       | 492       | 353       | 665    | 20,999      |
| Engelmann and other spruces     | 130                     | 507     | 726     | 1,616   | 2,399    | 2,855     | 2,705     | 2,875     | 1,920     | 1,234     | 1,080     | 475       | 241       | 372       | 238    | 19,373      |
| Other western softwoods         | 39                      | 120     | 301     | 495     | 585      | 722       | 635       | 476       | 615       | 349       | 316       | 288       | 31        | 235       | --     | 5,206       |
| Other                           |                         |         |         |         |          |           |           |           |           |           |           |           |           |           |        |             |
| Western woodland softwoods      | 2,355                   | 5,180   | 7,798   | 12,072  | 13,749   | 13,013    | 11,547    | 9,898     | 8,477     | 6,362     | 4,444     | 2,813     | 2,290     | 1,518     | 4,237  | 105,752     |
| All softwoods                   | 3,412                   | 8,672   | 13,891  | 24,805  | 31,937   | 34,847    | 33,612    | 29,783    | 24,928    | 19,302    | 16,748    | 10,854    | 7,183     | 5,828     | 11,016 | 276,818     |
| Hardwood species groups         |                         |         |         |         |          |           |           |           |           |           |           |           |           |           |        |             |
| Western hardwood species groups |                         |         |         |         |          |           |           |           |           |           |           |           |           |           |        |             |
| Cottonwood and aspen            | 147                     | 667     | 1,391   | 2,663   | 3,448    | 2,667     | 1,725     | 1,484     | 733       | 459       | 264       | 126       | 117       | --        | 262    | 16,153      |
| Other western hardwoods         | 17                      | 82      | 15      | 15      | 1        | 10        | --        | --        | --        | --        | --        | --        | --        | --        | --     | 139         |
| Other                           |                         |         |         |         |          |           |           |           |           |           |           |           |           |           |        |             |
| Western woodland hardwoods      | 6,425                   | 6,302   | 2,958   | 2,447   | 1,773    | 1,409     | 1,083     | 890       | 660       | 438       | 239       | 320       | 183       | 15        | 216    | 25,356      |
| All hardwoods                   | 6,588                   | 7,051   | 4,363   | 5,125   | 5,222    | 4,086     | 2,808     | 2,374     | 1,393     | 897       | 503       | 445       | 300       | 15        | 479    | 41,648      |
| All species groups              | 10,000                  | 15,723  | 18,255  | 29,930  | 37,159   | 38,933    | 36,420    | 32,157    | 26,321    | 20,199    | 17,251    | 11,300    | 7,483     | 5,843     | 11,494 | 318,466     |

All table cells without observations in the inventory sample are indicated by --. Table value of 0 indicates the aboveground tree biomass rounds to less than 1 thousand dry tons. Columns and rows may not add to their totals due to rounding.

**Table B31**—Area of accessible forest land, in thousand acres, by survey unit, county and forest land status, New Mexico, 2008–2014.

| Survey unit and county | Unreserved forests |              |          | Reserved forests |              |         | All forest land |
|------------------------|--------------------|--------------|----------|------------------|--------------|---------|-----------------|
|                        | Timberland         | Unproductive | Total    | Productive       | Unproductive | Total   |                 |
| Northwestern           |                    |              |          |                  |              |         |                 |
| Bernalillo             | --                 | 146.6        | 146.6    | 11.6             | 5.8          | 17.4    | 164.0           |
| Cibola                 | 235.8              | 1,106.8      | 1,342.7  | 37.4             | 114.2        | 151.7   | 1,494.3         |
| Los Alamos             | 17.9               | 26.6         | 44.5     | 6.0              | --           | 6.0     | 50.4            |
| McKinley               | 88.8               | 1,227.7      | 1,316.5  | --               | --           | --      | 1,316.5         |
| Rio Arriba             | 746.3              | 1,621.0      | 2,367.3  | 96.8             | 36.1         | 132.9   | 2,500.2         |
| Sandoval               | 273.1              | 587.1        | 860.2    | 41.2             | 50.7         | 91.8    | 952.0           |
| San Juan               | 93.5               | 473.8        | 567.3    | --               | 5.6          | 5.6     | 572.9           |
| Santa Fe               | 62.3               | 451.5        | 513.8    | 60.7             | 10.9         | 71.7    | 585.5           |
| Taos                   | 437.1              | 244.8        | 681.9    | 36.0             | 49.9         | 85.9    | 767.8           |
| Valencia               | 14.5               | 38.9         | 53.4     | --               | 1.1          | 1.1     | 54.5            |
| Total                  | 1,969.4            | 5,924.8      | 7,894.2  | 289.7            | 274.3        | 564.0   | 8,458.2         |
| Northeastern           |                    |              |          |                  |              |         |                 |
| Colfax                 | 543.6              | 447.7        | 991.3    | 6.5              | --           | 6.5     | 997.8           |
| Guadalupe              | --                 | 443.7        | 443.7    | --               | --           | --      | 443.7           |
| Harding                | --                 | 235.8        | 235.8    | --               | --           | --      | 235.8           |
| Mora                   | 229.8              | 149.5        | 379.2    | 55.8             | 9.4          | 65.3    | 444.5           |
| Quay                   | 7.0                | 237.3        | 244.4    | --               | --           | --      | 244.4           |
| San Miguel             | 285.1              | 1,117.4      | 1,402.5  | 48.7             | 12.2         | 60.8    | 1,463.3         |
| Torrance               | 15.3               | 580.3        | 595.5    | --               | 8.7          | 8.7     | 604.2           |
| Union                  | --                 | 235.7        | 235.7    | --               | --           | --      | 235.7           |
| Total                  | 1,080.7            | 3,447.5      | 4,528.2  | 111.0            | 30.3         | 141.3   | 4,669.5         |
| Southwestern           |                    |              |          |                  |              |         |                 |
| Catron                 | 638.0              | 1,911.0      | 2,549.0  | 147.4            | 137.4        | 284.8   | 2,833.7         |
| Dona Ana               | --                 | 684.3        | 684.3    | --               | 11.9         | 11.9    | 696.2           |
| Grant                  | 75.2               | 769.3        | 844.6    | 69.0             | 187.9        | 256.9   | 1,101.5         |
| Hidalgo                | --                 | 332.2        | 332.2    | --               | --           | --      | 332.2           |
| Luna                   | --                 | 320.4        | 320.4    | --               | --           | --      | 320.4           |
| Sierra                 | 66.7               | 381.0        | 447.7    | 94.3             | 29.0         | 123.3   | 571.0           |
| Socorro                | 96.1               | 859.4        | 955.5    | 21.0             | 71.9         | 92.9    | 1,048.5         |
| Total                  | 876.0              | 5,257.5      | 6,133.5  | 331.7            | 438.1        | 769.8   | 6,903.4         |
| Southeastern           |                    |              |          |                  |              |         |                 |
| Chaves                 | --                 | 844.8        | 844.8    | --               | --           | --      | 844.8           |
| DeBaca                 | --                 | 172.2        | 172.2    | --               | --           | --      | 172.2           |
| Eddy                   | 7.2                | 663.5        | 670.7    | --               | 5.8          | 5.8     | 676.5           |
| Lea                    | --                 | 436.0        | 436.0    | --               | --           | --      | 436.0           |
| Lincoln                | 51.9               | 749.9        | 801.8    | 49.2             | 38.2         | 87.4    | 889.2           |
| Otero                  | 294.4              | 1,350.2      | 1,644.6  | --               | --           | --      | 1,644.6         |
| Roosevelt              | --                 | 8.8          | 8.8      | --               | --           | --      | 8.8             |
| Total                  | 353.5              | 4,225.4      | 4,578.9  | 49.2             | 44.0         | 93.2    | 4,672.1         |
| All counties           | 4,279.7            | 18,855.2     | 23,134.9 | 781.6            | 786.7        | 1,568.3 | 24,703.2        |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

**Table B32**—Area of accessible forest land, in thousand acres, by survey unit, county, ownership group and forest land status, New Mexico, 2008–2014.

| Survey unit<br>and county | Forest Service  |                         | Other Federal   |                         | State and local<br>government |                         | Undifferentiated<br>private |                         | All<br>forest<br>land |
|---------------------------|-----------------|-------------------------|-----------------|-------------------------|-------------------------------|-------------------------|-----------------------------|-------------------------|-----------------------|
|                           | Timber-<br>land | Other<br>forest<br>land | Timber-<br>land | Other<br>forest<br>land | Timber-<br>land               | Other<br>forest<br>land | Timber-<br>land             | Other<br>forest<br>land |                       |
| Northwestern              |                 |                         |                 |                         |                               |                         |                             |                         |                       |
| Bernalillo                | --              | 52.5                    | --              | --                      | --                            | 10.1                    | --                          | 101.4                   | 164.0                 |
| Cibola                    | 151.9           | 121.4                   | 16.2            | 260.8                   | --                            | 53.7                    | 67.7                        | 822.6                   | 1,494.3               |
| Los Alamos                | 17.9            | 17.9                    | --              | 14.7                    | --                            | --                      | --                          | --                      | 50.4                  |
| McKinley                  | 39.4            | 103.8                   | --              | 94.7                    | 5.7                           | 81.4                    | 43.7                        | 947.8                   | 1,316.5               |
| Rio Arriba                | 552.8           | 682.2                   | --              | 306.1                   | 12.1                          | 86.6                    | 181.4                       | 679.0                   | 2,500.2               |
| Sandoval                  | 253.4           | 189.0                   | 6.1             | 142.8                   | --                            | 6.2                     | 13.5                        | 341.0                   | 952.0                 |
| San Juan                  | --              | --                      | --              | 222.8                   | --                            | 54.8                    | 93.5                        | 201.9                   | 572.9                 |
| Santa Fe                  | 62.3            | 149.8                   | --              | 54.1                    | --                            | 48.4                    | --                          | 270.9                   | 585.5                 |
| Taos                      | 326.7           | 138.7                   | 6.0             | 76.4                    | 6.0                           | --                      | 98.4                        | 115.5                   | 767.8                 |
| Valencia                  | --              | 1.1                     | --              | --                      | --                            | 0.9                     | 14.5                        | 38.0                    | 54.5                  |
| Total                     | 1,404.4         | 1,456.3                 | 28.4            | 1,172.5                 | 23.8                          | 342.0                   | 512.8                       | 3,518.0                 | 8,458.2               |
| Northeastern              |                 |                         |                 |                         |                               |                         |                             |                         |                       |
| Colfax                    | 58.2            | 6.0                     | --              | --                      | 80.3                          | 19.0                    | 405.2                       | 429.2                   | 997.8                 |
| Guadalupe                 | --              | --                      | --              | --                      | --                            | 72.4                    | --                          | 371.3                   | 443.7                 |
| Harding                   | --              | 11.8                    | --              | --                      | --                            | 54.8                    | --                          | 169.2                   | 235.8                 |
| Mora                      | 22.6            | 55.8                    | --              | 15.5                    | 6.1                           | 25.9                    | 201.1                       | 117.5                   | 444.5                 |
| Quay                      | --              | --                      | --              | --                      | --                            | 48.4                    | 7.0                         | 188.9                   | 244.4                 |
| San Miguel                | 150.1           | 158.3                   | --              | 34.8                    | 1.5                           | 119.7                   | 133.5                       | 865.5                   | 1,463.3               |
| Torrance                  | 15.3            | 121.9                   | --              | --                      | --                            | 80.9                    | --                          | 386.2                   | 604.2                 |
| Union                     | --              | --                      | --              | --                      | --                            | 69.1                    | --                          | 166.6                   | 235.7                 |
| Total                     | 246.1           | 353.8                   | --              | 50.3                    | 87.9                          | 490.3                   | 746.8                       | 2,694.4                 | 4,669.5               |
| Southwestern              |                 |                         |                 |                         |                               |                         |                             |                         |                       |
| Catron                    | 612.2           | 1,387.7                 | 6.3             | 188.2                   | 6.3                           | 114.9                   | 13.2                        | 505.0                   | 2,833.7               |
| Dona Ana                  | --              | --                      | --              | 583.7                   | --                            | 83.4                    | --                          | 29.1                    | 696.2                 |
| Grant                     | 71.6            | 710.7                   | 3.6             | 42.5                    | --                            | 52.0                    | --                          | 221.0                   | 1,101.5               |
| Hidalgo                   | --              | 37.2                    | --              | 64.3                    | --                            | 83.7                    | --                          | 147.0                   | 332.2                 |
| Luna                      | --              | --                      | --              | 144.7                   | --                            | 61.3                    | --                          | 114.4                   | 320.4                 |
| Sierra                    | 66.7            | 249.9                   | --              | 153.9                   | --                            | 36.5                    | --                          | 63.9                    | 571.0                 |
| Socorro                   | 74.3            | 302.6                   | --              | 232.2                   | 7.6                           | 146.3                   | 14.2                        | 271.2                   | 1,048.5               |
| Total                     | 824.8           | 2,688.0                 | 9.9             | 1,409.6                 | 13.9                          | 578.1                   | 27.4                        | 1,351.7                 | 6,903.4               |
| Southeastern              |                 |                         |                 |                         |                               |                         |                             |                         |                       |
| Chaves                    | --              | 24.3                    | --              | 149.2                   | --                            | 201.1                   | --                          | 470.3                   | 844.8                 |
| DeBaca                    | --              | --                      | --              | --                      | --                            | 74.0                    | --                          | 98.1                    | 172.2                 |
| Eddy                      | 5.8             | 89.5                    | --              | 300.5                   | 1.4                           | 201.6                   | --                          | 77.7                    | 676.5                 |
| Lea                       | --              | --                      | --              | 101.1                   | --                            | 112.4                   | --                          | 222.5                   | 436.0                 |
| Lincoln                   | 42.4            | 334.3                   | --              | 44.4                    | 4.7                           | 66.6                    | 4.7                         | 392.0                   | 889.2                 |
| Otero                     | 143.4           | 274.1                   | --              | 586.1                   | 4.1                           | 50.3                    | 146.9                       | 439.7                   | 1,644.6               |
| Roosevelt                 | --              | --                      | --              | --                      | --                            | 7.3                     | --                          | 1.5                     | 8.8                   |
| Total                     | 191.6           | 722.1                   | --              | 1,181.2                 | 10.3                          | 713.4                   | 151.6                       | 1,701.8                 | 4,672.1               |
| All counties              | 2,667.0         | 5,220.2                 | 38.3            | 3,813.5                 | 135.8                         | 2,123.8                 | 1,438.7                     | 9,266.0                 | 24,703.2              |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

**Table B33**—Area of timberland, in thousand acres, by survey unit, county and stand-size class, New Mexico, 2008–2014.

| Survey unit and county |              | Stand-size class |                 |                |              | All size classes |
|------------------------|--------------|------------------|-----------------|----------------|--------------|------------------|
|                        |              | Large diameter   | Medium diameter | Small diameter | Nonstocked   |                  |
| <b>Northwestern</b>    | Cibola       | 197.3            | 19.2            | 12.5           | 6.8          | 235.8            |
|                        | Los Alamos   | 6.0              | --              | 11.9           | --           | 17.9             |
|                        | McKinley     | 70.9             | 11.7            | 6.2            | --           | 88.8             |
|                        | Rio Arriba   | 597.9            | 98.4            | 36.4           | 13.6         | 746.3            |
|                        | Sandoval     | 243.9            | 6.1             | 18.4           | 4.6          | 273.1            |
|                        | San Juan     | 86.4             | 7.2             | --             | --           | 93.5             |
|                        | Santa Fe     | 62.3             | --              | --             | --           | 62.3             |
|                        | Taos         | 347.7            | 83.5            | 6.0            | --           | 437.1            |
|                        | Valencia     | 14.5             | --              | --             | --           | 14.5             |
|                        | <b>Total</b> | 1,626.7          | 226.2           | 91.5           | 25.1         | 1,969.4          |
| <b>Northeastern</b>    | Colfax       | 429.4            | 64.1            | 26.8           | 23.3         | 543.6            |
|                        | Mora         | 197.4            | 9.4             | 18.2           | 4.7          | 229.8            |
|                        | Quay         | --               | --              | 7.0            | --           | 7.0              |
|                        | San Miguel   | 220.0            | 31.6            | 20.9           | 12.6         | 285.1            |
|                        | Torrance     | 15.3             | --              | --             | --           | 15.3             |
|                        | <b>Total</b> | 862.0            | 105.2           | 72.9           | 40.7         | 1,080.7          |
| <b>Southwestern</b>    | Catron       | 532.1            | 36.1            | 14.1           | 55.7         | 638.0            |
|                        | Grant        | 71.1             | 1.5             | --             | 2.6          | 75.2             |
|                        | Sierra       | 66.7             | --              | --             | --           | 66.7             |
|                        | Socorro      | 68.3             | 22.2            | 5.6            | --           | 96.1             |
|                        | <b>Total</b> | 738.3            | 59.7            | 19.7           | 58.3         | 876.0            |
| <b>Southeastern</b>    | Eddy         | 5.8              | --              | 1.4            | --           | 7.2              |
|                        | Lincoln      | 40.6             | --              | --             | 11.3         | 51.9             |
|                        | Otero        | 259.8            | 27.7            | --             | 7.0          | 294.4            |
|                        | <b>Total</b> | 306.1            | 27.7            | 1.4            | 18.2         | 353.5            |
| <b>All counties</b>    |              | <b>3,533.1</b>   | <b>418.8</b>    | <b>185.5</b>   | <b>142.2</b> | <b>4,279.7</b>   |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

**Table B34**—Area of timberland, in thousand acres, by survey unit, county and stocking class, New Mexico, 2008–2014.

| Survey unit and county |              | Stocking class of growing-stock trees |                |                    |               |              | All classes    |
|------------------------|--------------|---------------------------------------|----------------|--------------------|---------------|--------------|----------------|
|                        |              | Nonstocked                            | Poorly stocked | Moderately stocked | Fully stocked | Over-stocked |                |
| <b>Northwestern</b>    | Cibola       | 7.3                                   | 75.7           | 96.0               | 56.8          | --           | 235.8          |
|                        | Los Alamos   | --                                    | 6.0            | 6.0                | 6.0           | --           | 17.9           |
|                        | McKinley     | --                                    | 49.3           | 33.3               | 6.2           | --           | 88.8           |
|                        | Rio Arriba   | 14.1                                  | 286.1          | 261.9              | 158.0         | 26.2         | 746.3          |
|                        | Sandoval     | 10.8                                  | 73.7           | 107.9              | 80.8          | --           | 273.1          |
|                        | San Juan     | --                                    | 28.8           | 50.4               | 14.4          | --           | 93.5           |
|                        | Santa Fe     | --                                    | 12.5           | 43.6               | 6.2           | --           | 62.3           |
|                        | Taos         | --                                    | 94.7           | 159.7              | 172.2         | 10.5         | 437.1          |
|                        | Valencia     | --                                    | 14.5           | --                 | --            | --           | 14.5           |
| <b>Total</b>           |              | 32.2                                  | 641.2          | 758.8              | 500.6         | 36.7         | 1,969.4        |
| <b>Northeastern</b>    | Colfax       | 24.4                                  | 236.4          | 157.2              | 113.5         | 12.2         | 543.6          |
|                        | Mora         | 5.2                                   | 59.6           | 117.5              | 45.9          | 1.7          | 229.8          |
|                        | Quay         | --                                    | 7.0            | --                 | --            | --           | 7.0            |
|                        | San Miguel   | 12.6                                  | 59.1           | 133.1              | 80.3          | --           | 285.1          |
|                        | Torrance     | --                                    | 6.5            | --                 | 8.7           | --           | 15.3           |
| <b>Total</b>           |              | 42.2                                  | 368.6          | 407.7              | 248.4         | 13.9         | 1,080.7        |
| <b>Southwestern</b>    | Catron       | 55.7                                  | 341.7          | 213.9              | 26.7          | --           | 638.0          |
|                        | Grant        | 2.6                                   | 33.0           | 33.6               | 6.0           | --           | 75.2           |
|                        | Sierra       | --                                    | 38.6           | 28.1               | --            | --           | 66.7           |
|                        | Socorro      | --                                    | 60.0           | 31.9               | 4.2           | --           | 96.1           |
| <b>Total</b>           |              | 58.3                                  | 473.3          | 307.6              | 36.9          | --           | 876.0          |
| <b>Southeastern</b>    | Eddy         | --                                    | 5.8            | --                 | --            | 1.4          | 7.2            |
|                        | Lincoln      | 11.3                                  | 20.9           | 16.9               | --            | 2.8          | 51.9           |
|                        | Otero        | 7.0                                   | 94.1           | 127.3              | 66.1          | --           | 294.4          |
|                        | <b>Total</b> | 18.2                                  | 120.7          | 144.2              | 66.1          | 4.2          | 353.5          |
| <b>All counties</b>    |              | <b>150.9</b>                          | <b>1,603.8</b> | <b>1,618.3</b>     | <b>851.9</b>  | <b>54.8</b>  | <b>4,279.7</b> |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the acres round to less than 0.1 thousand acres. Columns and rows may not add to their totals due to rounding.

**Table B35**—Net volume of growing stock trees (at least 5 inches d.b.h.), in million cubic feet, and sawtimber trees, in million board feet (International 1/4-inch rule), on timberland by survey unit, county, and major species group, New Mexico, 2008–2014.

| Survey unit<br>and county | Growing stock           |                    |                   |                   |                | Sawtimber               |                    |                   |                   |                |
|---------------------------|-------------------------|--------------------|-------------------|-------------------|----------------|-------------------------|--------------------|-------------------|-------------------|----------------|
|                           | Major species group     |                    |                   |                   |                | Major species group     |                    |                   |                   |                |
|                           | Pine                    | Other<br>softwoods | Soft<br>hardwoods | Hard<br>hardwoods | All<br>species | Pine                    | Other<br>softwoods | Soft<br>hardwoods | Hard<br>hardwoods | All<br>species |
|                           | (In million cubic feet) |                    |                   |                   |                | (In million board feet) |                    |                   |                   |                |
| Northwestern              |                         |                    |                   |                   |                |                         |                    |                   |                   |                |
| Cibola                    | 312.4                   | 49.4               | 16.8              | --                | 378.7          | 1,429.9                 | 199.9              | 46.2              | --                | 1,676.1        |
| Los Alamos                | --                      | 31.2               | 3.5               | --                | 34.7           | --                      | 178.0              | 19.6              | --                | 197.6          |
| McKinley                  | 100.7                   | 2.6                | --                | --                | 103.3          | 451.3                   | 15.2               | --                | --                | 466.4          |
| Rio Arriba                | 446.5                   | 630.4              | 289.3             | --                | 1,366.2        | 2,165.1                 | 2,915.9            | 911.2             | --                | 5,992.2        |
| Sandoval                  | 252.9                   | 311.4              | 57.7              | --                | 622.0          | 1,169.7                 | 1,458.9            | 175.0             | --                | 2,803.5        |
| San Juan                  | 184.9                   | 13.7               | 19.1              | --                | 217.7          | 1,068.5                 | 44.9               | 55.4              | --                | 1,168.7        |
| Santa Fe                  | 83.3                    | 30.2               | 0.5               | --                | 113.9          | 442.1                   | 111.0              | --                | --                | 553.1          |
| Taos                      | 150.7                   | 609.8              | 178.7             | --                | 939.2          | 759.1                   | 2,663.8            | 471.6             | --                | 3,894.5        |
| Valencia                  | --                      | --                 | --                | 13.5              | 13.5           | --                      | --                 | --                | 68.9              | 68.9           |
| Total                     | 1,531.3                 | 1,678.7            | 565.7             | 13.5              | 3,789.2        | 7,485.7                 | 7,587.5            | 1,679.0           | 68.9              | 16,821.1       |
| Northeastern              |                         |                    |                   |                   |                |                         |                    |                   |                   |                |
| Colfax                    | 331.7                   | 343.5              | 73.8              | --                | 749.0          | 1,382.0                 | 1,314.2            | 197.3             | --                | 2,893.5        |
| Mora                      | 213.6                   | 138.0              | 3.0               | --                | 354.5          | 986.3                   | 612.2              | --                | --                | 1,598.5        |
| San Miguel                | 207.1                   | 253.1              | 14.2              | --                | 474.4          | 841.7                   | 989.8              | 51.0              | --                | 1,882.6        |
| Torrance                  | 22.4                    | 2.0                | --                | --                | 24.4           | 70.7                    | 7.0                | --                | --                | 77.7           |
| Total                     | 774.7                   | 736.6              | 91.0              | --                | 1,602.3        | 3,280.8                 | 2,923.2            | 248.3             | --                | 6,452.3        |
| Southwestern              |                         |                    |                   |                   |                |                         |                    |                   |                   |                |
| Catron                    | 722.8                   | 143.7              | 9.4               | --                | 876.0          | 3,395.9                 | 638.2              | 45.3              | --                | 4,079.3        |
| Grant                     | 95.9                    | 25.9               | --                | --                | 121.9          | 452.0                   | 118.5              | --                | --                | 570.5          |
| Sierra                    | 76.8                    | 5.4                | --                | --                | 82.2           | 352.5                   | 22.1               | --                | --                | 374.6          |
| Socorro                   | 65.2                    | 30.8               | 0.9               | 12.3              | 109.3          | 295.7                   | 133.5              | 0.7               | 34.1              | 464.1          |
| Total                     | 960.8                   | 205.9              | 10.4              | 12.3              | 1,189.3        | 4,496.1                 | 912.2              | 46.0              | 34.1              | 5,488.5        |
| Southeastern              |                         |                    |                   |                   |                |                         |                    |                   |                   |                |
| Eddy                      | 2.5                     | --                 | --                | --                | 2.5            | 8.8                     | --                 | --                | --                | 8.8            |
| Lincoln                   | 28.9                    | 42.1               | --                | 0.3               | 71.3           | 136.0                   | 197.6              | --                | 0.8               | 334.4          |
| Otero                     | 179.8                   | 431.0              | 13.9              | 0.0               | 624.6          | 855.1                   | 2,030.3            | 28.1              | --                | 2,913.4        |
| Total                     | 211.1                   | 473.0              | 13.9              | 0.4               | 698.4          | 999.9                   | 2,227.8            | 28.1              | 0.8               | 3,256.6        |
| All counties              | 3,477.9                 | 3,094.2            | 680.9             | 26.2              | 7,279.2        | 16,262.4                | 13,650.8           | 2,001.3           | 103.9             | 32,018.5       |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic or board feet. Columns and rows may not add to their totals due to rounding.

**Table B36**—Average annual net growth of growing stock trees (at least 5 inches d.b.h.), in million cubic feet, and sawtimber trees, in million board feet (International 1/4-inch rule), on timberland by survey unit, county, and major species group, New Mexico, 2008–2014.

| Survey unit<br>and county | Growing stock           |                    |                   |                   |                | Sawtimber               |                    |                   |                   |                |
|---------------------------|-------------------------|--------------------|-------------------|-------------------|----------------|-------------------------|--------------------|-------------------|-------------------|----------------|
|                           | Major species group     |                    |                   |                   |                | Major species group     |                    |                   |                   |                |
|                           | Pine                    | Other<br>softwoods | Soft<br>hardwoods | Hard<br>hardwoods | All<br>species | Pine                    | Other<br>softwoods | Soft<br>hardwoods | Hard<br>hardwoods | All<br>species |
|                           | (In million cubic feet) |                    |                   |                   |                | (In million board feet) |                    |                   |                   |                |
| Northwestern              |                         |                    |                   |                   |                |                         |                    |                   |                   |                |
| Cibola                    | 4.6                     | 0.4                | 0.4               | --                | 5.4            | 28.3                    | 2.6                | 1.6               | --                | 32.5           |
| Los Alamos                | -0.3                    | -0.5               | -0.3              | --                | -1.1           | -0.9                    | -2.4               | 0.1               | --                | -3.2           |
| McKinley                  | 1.4                     | 0.0                | --                | --                | 1.4            | 9.1                     | 0.1                | -                 | --                | 9.2            |
| Rio Arriba                | 4.1                     | 0.0                | 1.0               | --                | 5.1            | 26.3                    | 18.4               | 24.6              | --                | 69.2           |
| Sandoval                  | 2.7                     | 1.9                | 0.3               | --                | 5.0            | 15.0                    | 15.2               | -0.6              | --                | 29.7           |
| San Juan                  | 2.2                     | 0.1                | 0.2               | --                | 2.5            | 14.2                    | 1.4                | 0.2               | --                | 15.8           |
| Santa Fe                  | 0.1                     | 0.2                | -0.1              | --                | 0.2            | 2.7                     | 2.7                | --                | --                | 5.4            |
| Taos                      | 1.7                     | -1.2               | 2.5               | --                | 3.0            | 10.9                    | 11.6               | 15.2              | -                 | 37.8           |
| Valencia                  | --                      | --                 | --                | 0.3               | 0.3            | --                      | --                 | --                | 1.1               | 1.1            |
| Total                     | 16.6                    | 0.9                | 4.0               | 0.3               | 21.7           | 105.6                   | 49.7               | 41.1              | 1.1               | 197.5          |
| Northeastern              |                         |                    |                   |                   |                |                         |                    |                   |                   |                |
| Colfax                    | 4.0                     | 1.2                | 0.6               | --                | 5.8            | 26.9                    | 16.7               | 2.2               | --                | 45.9           |
| Mora                      | 2.8                     | -1.2               | 0.1               | --                | 1.6            | 15.0                    | -1.6               | 0.1               | --                | 13.5           |
| San Miguel                | 2.2                     | -1.8               | -0.2              | --                | 0.2            | 15.5                    | -1.9               | 0.2               | --                | 13.9           |
| Torrance                  | 0.2                     | 0.1                | --                | --                | 0.3            | 0.6                     | 0.6                | --                | --                | 1.2            |
| Total                     | 9.2                     | -1.7               | 0.4               | --                | 7.9            | 58.1                    | 13.8               | 2.5               | --                | 74.4           |
| Southwestern              |                         |                    |                   |                   |                |                         |                    |                   |                   |                |
| Catron                    | 8.3                     | 1.4                | -0.2              | --                | 9.5            | 47.6                    | 9.3                | -1.0              | --                | 55.9           |
| Grant                     | 0.7                     | 0.2                | --                | --                | 1.0            | 4.9                     | 2.5                | --                | --                | 7.4            |
| Sierra                    | 0.4                     | 0.1                | --                | --                | 0.4            | 1.5                     | 0.1                | --                | --                | 1.7            |
| Socorro                   | 0.1                     | -0.3               | 0.0               | 0.3               | 0.1            | 0.5                     | -1.6               | 0.0               | 3.0               | 1.9            |
| Total                     | 9.4                     | 1.4                | -0.2              | 0.3               | 11.0           | 54.6                    | 10.4               | -1.0              | 3.0               | 67.0           |
| Southeastern              |                         |                    |                   |                   |                |                         |                    |                   |                   |                |
| Eddy                      | 0.0                     | --                 | --                | --                | 0.0            | 0.4                     | --                 | --                | --                | 0.4            |
| Lincoln                   | -1.7                    | 0.0                | --                | 0.0               | -1.7           | -7.7                    | 0.2                | --                | 0.0               | -7.4           |
| Otero                     | 0.9                     | 3.0                | 0.0               | 0.0               | 3.9            | 6.5                     | 26.6               | 3.1               | --                | 36.3           |
| Total                     | -0.7                    | 3.0                | 0.0               | 0.0               | 2.2            | -0.8                    | 26.8               | 3.1               | 0.0               | 29.2           |
| All counties              | 34.4                    | 3.7                | 4.2               | 0.6               | 42.8           | 217.5                   | 100.8              | 45.7              | 4.2               | 368.1          |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic or board feet. Columns and rows may not add to their totals due to rounding.

**Table B37**—Percent sampling errors by survey unit and county for area of timberland, volume, average annual net growth, average annual removals, and average annual mortality on timberland, New Mexico, 2008–2014.

| Survey unit and county | Forest area | Timberland area | Growing stock (on timberland) |        |          |           | Sawtimber (on timberland) |        |          |           |
|------------------------|-------------|-----------------|-------------------------------|--------|----------|-----------|---------------------------|--------|----------|-----------|
|                        |             |                 | Volume                        | Growth | Removals | Mortality | Volume                    | Growth | Removals | Mortality |
| Northwestern           |             |                 |                               |        |          |           |                           |        |          |           |
| Bernalillo             | 11.07       | --              | --                            | --     | --       | --        | --                        | --     | --       | --        |
| Cibola                 | 3.28        | 14.75           | 18.33                         | 24.00  | --       | 50.44     | 19.38                     | 23.77  | --       | 54.08     |
| Los Alamos             | 16.30       | 52.22           | 100.00                        | 75.37  | --       | 67.53     | 100.00                    | 67.94  | --       | 73.12     |
| McKinley               | 3.63        | 24.79           | 28.17                         | 36.63  | --       | 72.97     | 28.33                     | 46.71  | --       | 77.75     |
| Rio Arriba             | 2.11        | 7.52            | 10.20                         | 64.92  | --       | 18.34     | 11.34                     | 30.85  | --       | 21.33     |
| Sandoval               | 4.09        | 10.55           | 15.36                         | 31.99  | --       | 25.39     | 16.28                     | 27.21  | --       | 27.75     |
| San Juan               | 7.22        | 21.00           | 26.33                         | 31.91  | --       | 39.94     | 27.85                     | 27.85  | --       | 43.00     |
| Santa Fe               | 5.81        | 30.10           | 33.07                         | 100.00 | --       | 48.47     | 34.20                     | 77.60  | --       | 51.77     |
| Taos                   | 3.08        | 7.76            | 10.15                         | 72.56  | --       | 18.43     | 11.42                     | 29.08  | --       | 22.08     |
| Valencia               | 27.05       | 63.69           | 81.56                         | 74.65  | --       | --        | 87.04                     | 81.61  | --       | --        |
| Total                  | 1.35        | 4.47            | 5.86                          | 21.38  | --       | 10.91     | 6.44                      | 13.98  | --       | 12.62     |
| Northeastern           |             |                 |                               |        |          |           |                           |        |          |           |
| Colfax                 | 2.74        | 6.92            | 9.84                          | 25.12  | --       | 17.54     | 10.62                     | 18.11  | --       | 20.55     |
| Guadalupe              | 9.39        | --              | --                            | --     | --       | --        | --                        | --     | --       | --        |
| Harding                | 11.68       | --              | --                            | --     | --       | --        | --                        | --     | --       | --        |
| Mora                   | 5.40        | 11.97           | 16.54                         | 70.13  | --       | 33.93     | 17.75                     | 35.54  | --       | 41.45     |
| Quay                   | 13.73       | 82.25           | --                            | --     | --       | --        | --                        | --     | --       | --        |
| San Miguel             | 3.93        | 14.26           | 17.63                         | 100.00 | --       | 44.58     | 18.95                     | 100.00 | --       | 49.81     |
| Torrance               | 5.87        | 63.96           | 77.66                         | 81.81  | --       | 88.71     | 75.31                     | 75.78  | --       | 91.78     |
| Union                  | 10.42       | --              | --                            | --     | --       | --        | --                        | --     | --       | --        |
| Total                  | 2.15        | 5.82            | 7.95                          | 54.34  | --       | 20.89     | 8.57                      | 27.29  | --       | 24.76     |
| Southwestern           |             |                 |                               |        |          |           |                           |        |          |           |
| Catron                 | 1.74        | 8.46            | 11.08                         | 25.72  | --       | 37.20     | 11.88                     | 24.49  | --       | 43.28     |
| Dona Ana               | 7.65        | --              | --                            | --     | --       | --        | --                        | --     | --       | --        |
| Grant                  | 4.15        | 28.10           | 35.26                         | 64.40  | --       | 79.18     | 37.57                     | 49.39  | --       | 93.59     |
| Hidalgo                | 12.34       | --              | --                            | --     | --       | --        | --                        | --     | --       | --        |
| Luna                   | 12.43       | --              | --                            | --     | --       | --        | --                        | --     | --       | --        |
| Sierra                 | 6.43        | 27.93           | 31.16                         | 100.00 | --       | 95.61     | 33.58                     | 100.00 | --       | 100.00    |
| Socorro                | 5.19        | 23.78           | 29.62                         | 100.00 | --       | 46.46     | 34.23                     | 100.00 | --       | 50.27     |
| Total                  | 1.77        | 7.42            | 9.58                          | 24.94  | --       | 27.79     | 10.34                     | 23.38  | --       | 32.06     |
| Southeastern           |             |                 |                               |        |          |           |                           |        |          |           |
| Chaves                 | 7.22        | --              | --                            | --     | --       | --        | --                        | --     | --       | --        |
| DeBaca                 | 16.47       | --              | --                            | --     | --       | --        | --                        | --     | --       | --        |
| Eddy                   | 7.78        | 82.99           | 100.00                        | 100.00 | --       | --        | 100.00                    | 100.00 | --       | --        |
| Lea                    | 10.07       | --              | --                            | --     | --       | --        | --                        | --     | --       | --        |
| Lincoln                | 4.61        | 32.21           | 45.08                         | 100.00 | --       | 63.08     | 46.23                     | 100.00 | --       | 73.06     |
| Otero                  | 3.79        | 11.68           | 13.73                         | 34.28  | --       | 20.61     | 14.25                     | 22.01  | --       | 21.58     |
| Roosevelt              | 78.21       | --              | --                            | --     | --       | --        | --                        | --     | --       | --        |
| Total                  | 2.61        | 10.95           | 13.12                         | 100.00 | --       | 23.94     | 13.60                     | 42.84  | --       | 29.06     |
| All counties           | 0.93        | 3.08            | 4.05                          | 16.96  | --       | 8.76      | 4.42                      | 10.79  | --       | 10.28     |

All table cells without observations in the inventory sample are indicated by --. Sampling errors that exceed 100% are reported as 100%.

## **Appendix C—New Mexico’s Forest-Type Groups and Forest Types, With Descriptions and Timber (T) or Woodland (W) Designations**

---

Forest types are usually named for the predominant species (or group of species) on the condition. In order to determine the forest type, the stocking (site occupancy) of trees is estimated by softwoods and hardwoods. If softwoods predominate, then the forest type will be one of the softwood types; and if hardwoods predominate, then the forest type will be one of the hardwood types. Some other special stocking rules apply to individual forest types and are described below.

Associate species are defined as those that regularly form the majority of the non-predominant species stocking of mixed-species conditions. These descriptions are applicable to the current inventory; species importance, including predominance in some cases, will vary for other States or inventory years. When species are listed, they are in decreasing order of overall forest type stocking.

### **ASPEN/BIRCH GROUP (T)**

#### **Aspen**

Predominant species: quaking aspen

Associate species: Engelmann spruce, white fir, Douglas-fir, ponderosa pine, corkbark fir, blue spruce

Other species: Gambel oak, limber pine, Rocky Mountain bristlecone pine, Rocky Mountain juniper, subalpine fir, common or two-needle pinyon, southwestern white pine

### **DOUGLAS-FIR GROUP (T)**

#### **Douglas-fir**

Predominant species: Douglas-fir

Associate species: ponderosa pine, quaking aspen, white fir, Gambel oak, southwestern white pine, Engelmann spruce, limber pine, common or two-needle pinyon

Other species: Rocky Mountain juniper, Rocky Mountain bristlecone pine, blue spruce, corkbark fir, alligator juniper, boxelder, Arizona white oak, bigtooth maple, subalpine fir, velvet ash, oneseed juniper, gray oak

### **ELM/ASH/COTTONWOOD GROUP (T)**

#### **Cottonwood**

Predominant species: Fremont cottonwood, narrowleaf cottonwood

Associate species: Gambel oak

Other species: ponderosa pine, white fir, Rocky Mountain juniper, oneseed juniper, honey mesquite, common or two-needle pinyon

Special rules: Stocking of cottonwoods must be at least 50 percent of total stocking.

### **EXOTIC HARDWOODS GROUP (T)**

#### **Other exotic hardwoods**

Predominant species: Siberian elm

Associate species: none identified

Other species: common or two-needle pinyon, Gambel oak, oneseed juniper, alligator juniper

Special rules: A “catch-all” type for non-native hardwood species.

## **FIR/SPRUCE/MOUNTAIN HEMLOCK GROUP (T)**

### **Blue spruce**

Predominant species: blue spruce

Associate species: quaking aspen, ponderosa pine, Douglas-fir, white fir

Other species: corkbark fir, limber pine, Gambel oak

### **Engelmann spruce**

Predominant species: Engelmann spruce

Associate species: quaking aspen, corkbark fir, Douglas-fir

Other species: limber pine, ponderosa pine, white fir, Rocky Mountain  
bristlecone pine, blue spruce, subalpine fir

Special rules: In order to use Engelmann spruce stocking predominance,  
subalpine fir and/or corkbark fir stocking must be less than 5 percent  
of the total. If subalpine fir and/or corkbark fir stocking is 5 percent or  
more, Engelmann spruce stocking must be at least 75 percent of the total.

### **Engelmann spruce/subalpine fir**

Predominant species: Engelmann spruce, corkbark fir, subalpine fir

Associate species: quaking aspen, Douglas-fir

Other species: blue spruce, white fir, limber pine, Rocky Mountain bristle-  
cone pine

Special rules: The combined stocking of Engelmann spruce with subalpine  
fir and/or corkbark fir is predominant. Stocking of both Engelmann  
spruce and subalpine fir/corkbark fir must each be between 5 and 74  
percent of the total.

### **White fir**

Predominant species: white fir

Associate species: Douglas-fir, quaking aspen, ponderosa pine, Gambel oak,  
limber pine

Other species: southwestern white pine, bigtooth maple, Rocky Mountain  
juniper, boxelder, Engelmann spruce, common or two-needle pinyon,  
blue spruce, gray oak, corkbark fir, velvet ash

## **NONSTOCKED**

### **Nonstocked**

Predominant species: various, most commonly honey mesquite, but many  
nonstocked conditions have no live-tree stocking.

Associate species: various, frequently common or two-needle pinyon

Other species: seldom more than two species on a condition. Complete spec-  
ies list: honey mesquite, ponderosa pine, oneseed juniper, common or  
two-needle pinyon, velvet mesquite, Douglas-fir, Utah juniper, Rocky  
Mountain juniper, Gambel oak, Fremont cottonwood, gray oak, alligator  
juniper, quaking aspen, velvet ash

Special rules: Used when all live stocking is less than 10 percent. Implies  
disturbance, but may be used for sparse stands with no disturbance,  
especially with woodland species.

## **OTHER HARDWOODS GROUP (T)**

### **Other hardwoods**

Predominant species: Arizona walnut

Associate species: none

Other species: none

Special rules: A “catch-all” type, typically for species with a limited geo-  
graphical range.

## **OTHER WESTERN SOFWOODS GROUP (T)**

### **Foxtail pine/bristlecone pine**

Predominant species: Rocky Mountain bristlecone pine

Associate species: Engelmann spruce

Other species: corkbark fir

Special rules: This is mostly an “either/or” forest type. Foxtail pine does not occur in New Mexico, so this will always be Rocky Mountain bristlecone pine predominance.

### **Limber pine**

Predominant species: limber pine

Associate species: Douglas-fir, ponderosa pine, white fir, quaking aspen

Other species: Engelmann spruce, Gambel oak

### **Southwestern white pine**

Predominant species: southwestern white pine

Associate species: Douglas-fir, white fir, Gambel oak, ponderosa pine

Other species: quaking aspen, alligator juniper, Rocky Mountain juniper, common or two-needle pinyon, blue spruce, bigtooth maple

## **PINYON/JUNIPER GROUP (W)**

### **Juniper woodland**

Predominant species: oneseed juniper, alligator juniper, Utah juniper, Pinchot juniper,

Associate species: ponderosa pine, gray oak, honey mesquite

Other species: Arizona white oak, Gambel oak, Rocky Mountain juniper, silverleaf oak, Douglas-fir, Emory oak, velvet ash, netleaf oak, southwestern white pine, limber pine, white fir, velvet mesquite

Special rules: Predominance of any combination of junipers other than Rocky Mountain juniper, and live pinyons are NOT present.

### **Pinyon/juniper woodland**

Predominant species: oneseed juniper, common or two-needle pinyon, alligator juniper, Utah juniper, Mexican pinyon pine, redberry juniper, Arizona pinyon pine

Associate species: Rocky Mountain juniper, ponderosa pine, gray oak, Gambel oak, Arizona white oak

Other species: Douglas-fir, Emory oak, silverleaf oak, honey mesquite, Mexican blue oak, southwestern white pine, chinkapin oak, velvet ash, white fir, bigtooth maple, limber pine

Special rules: Any combination of pinyons and junipers other than Rocky Mountain juniper predominate. Pinyons must be present.

### **Rocky Mountain juniper**

Predominant species: Rocky Mountain juniper

Associate species: common or two-needle pinyon, ponderosa pine, Gambel oak, oneseed juniper

Other species: Douglas-fir, alligator juniper, Utah juniper, Arizona pinyon pine, white fir

## **PONDEROSA PINE GROUP (T)**

### **Ponderosa pine**

Predominant species: ponderosa pine

Associate species: Gambel oak, Douglas-fir, common or two-needle pinyon, Rocky Mountain juniper, alligator juniper, white fir

Other species: quaking aspen, Arizona white oak, oneseed juniper, gray oak, silverleaf oak, southwestern white pine, limber pine, velvet ash, Chihuahuan pine, blue spruce, chinkapin oak, netleaf oak, Engelmann spruce, corkbark fir, Arizona walnut

## **WOODLAND HARDWOODS GROUP (W)**

### **Deciduous oak woodland**

Predominant species: Gambel oak

Associate species: ponderosa pine, Rocky Mountain juniper, Douglas-fir, common or two-needle pinyon, alligator juniper, white fir

Other species: gray oak, oneseed juniper, Utah juniper, quaking aspen, narrowleaf cottonwood, southwestern white pine, Engelmann spruce, Arizona white oak, limber pine, boxelder

Special rules: Gambel oak is the only New Mexico species evaluated for this type.

### **Evergreen oak woodland**

Predominant species: gray oak, Arizona white oak, silverleaf oak, Emory oak, netleaf oak, Mexican blue oak

Associate species: alligator juniper, common or two-needle pinyon, ponderosa pine, oneseed juniper, Gambel oak

Other species: Douglas-fir, honey mesquite, Rocky Mountain juniper, Utah juniper, Mexican pinyon pine, southwestern white pine, bigtooth maple, velvet ash

Special rules: Any combination of southwestern evergreen oaks. The only New Mexico oaks not included are Gambel oak and chinkapin oak.

### **Intermountain maple woodland**

Predominant species: bigtooth maple

Associate species: too few occurrences to evaluate

Other species: Douglas-fir, chinkapin oak, Gambel oak, Rocky Mountain juniper, alligator juniper, ponderosa pine, southwestern white pine, velvet ash, common or two-needle pinyon

Special rules: Currently, bigtooth maple is the only species evaluated for this type. In the previous periodic inventory, Rocky Mountain maple was included.

### **Mesquite woodland**

Predominant species: honey mesquite, velvet mesquite

Associate species: oneseed juniper

Other species: redberry juniper

## Appendix D—Tree Species Groups and Tree Species Measured in New Mexico's Annual Inventory, With Common Name, Scientific Name, and Timber (T) or Woodland (W) Designation

---

### HARDWOODS

#### Cottonwood and aspen group (T)

- Fremont cottonwood (*Populus fremontii*)
- Narrowleaf cottonwood (*Populus angustifolia*)
- Quaking aspen (*Populus tremuloides*)

#### Other western hardwoods group (T)

- Arizona walnut (*Juglans major*)
- Boxelder (*Acer negundo*)
- Chinkapin oak (*Quercus muehlenbergii*)
- Siberian elm (*Ulmus pumila*)
- Velvet ash (*Fraxinus velutina*)

#### Western woodland hardwoods group (W)

- Arizona white oak (*Quercus arizonica*)
- Bigtooth maple (*Acer grandidentatum*)
- Emory oak (*Quercus emoryi*)
- Gambel oak (*Quercus gambelii*)
- Gray oak (*Quercus grisea*)
- Honey mesquite (*Prosopis glandulosa*)
- Mexican blue oak (*Quercus oblongifolia*)
- Netleaf oak (*Quercus rugosa*)
- Silverleaf oak (*Quercus hypoleucoides*)
- Velvet mesquite (*Prosopis velutina*)

### SOFTWOODS

#### Douglas-fir group (T)

- Douglas-fir (*Pseudotsuga menziesii*)

#### Engelmann and other spruces group (T)

- Blue spruce (*Picea pungens*)
- Engelmann spruce (*Picea engelmannii*)

#### Other western softwoods group (T)

- Chihuahua pine (*Pinus leiophylla*)
- Limber pine (*Pinus flexilis*)
- Rocky Mountain bristlecone pine (*Pinus aristata*)
- Southwestern white pine (*Pinus strobiformis*)

**Ponderosa and Jeffrey pines group (T)**

Ponderosa pine (*Pinus ponderosa*)

**True fir group (T)**

Corkbark fir (*Abies lasiocarpa* var. *arizonica*)

Subalpine fir (*Abies lasiocarpa*)

White fir (*Abies concolor*)

**Western woodland softwoods group (W)**

Alligator juniper (*Juniperus deppeana*)

Oneseed juniper (*Juniperus monosperma*)

Pinchot juniper (*Juniperus pinchotii*)

Redberry juniper (*Juniperus coahuilensis*)

Rocky Mountain juniper (*Juniperus scopulorum*)

Utah juniper (*Juniperus osteosperma*)

Arizona pinyon pine (*Pinus monophylla* var. *fallax*)

Common or two-needle pinyon (*Pinus edulis*)

Mexican pinyon pine (*Pinus cembroides*)

## Appendix E—Revised Standard Forest Resource Tables for Growth, 2008–2012

**Table E1**—Average annual net growth of all live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, by owner class and forest land status, New Mexico, 2008–2014. This table presents a revision of table B21 in Appendix B of Goeking et al. (2014).

| Owner class                       | Unreserved forests |              |       | Reserved forests |              |       | All forest land |
|-----------------------------------|--------------------|--------------|-------|------------------|--------------|-------|-----------------|
|                                   | Timberland         | Unproductive | Total | Productive       | Unproductive | Total |                 |
| Forest Service                    |                    |              |       |                  |              |       |                 |
| National Forest                   | 16.0               | 5.1          | 21.1  | -2.8             | 0.7          | -2.1  | 19.0            |
| National Grassland                | --                 | 0.0          | 0.0   | --               | --           | --    | 0.0             |
| Other Forest Service              | 1.6                | --           | 1.6   | --               | --           | --    | 1.6             |
| Other Federal                     |                    |              |       |                  |              |       |                 |
| National Park Service             | --                 | --           | --    | -0.1             | 0.1          | 0.0   | 0.0             |
| Bureau of Land Management         | 0.1                | 2.5          | 2.6   | --               | 0.3          | 0.3   | 2.9             |
| U.S. Fish and Wildlife Service    | --                 | --           | --    | --               | 0.3          | 0.3   | 0.3             |
| Departments of Defense and Energy | --                 | 0.4          | 0.4   | --               | --           | --    | 0.4             |
| Other Federal                     | --                 | 0.0          | 0.0   | --               | 0.1          | 0.1   | 0.1             |
| State and local government        |                    |              |       |                  |              |       |                 |
| State                             | 2.6                | 3.7          | 6.2   | 0.2              | 0.0          | 0.2   | 6.5             |
| County and Municipal              | --                 | 0.0          | 0.0   | --               | --           | --    | 0.0             |
| Private                           |                    |              |       |                  |              |       |                 |
| Undifferentiated private          | 26.5               | 31.7         | 58.2  | --               | --           | --    | 58.2            |
| All owners                        | 46.7               | 43.4         | 90.1  | -2.7             | 1.5          | -1.2  | 88.9            |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table E2**—Average annual net growth of all live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by forest type group and stand-size class, New Mexico, 2008–2014. This table presents a revision of table B22 in Appendix B of Goeking et al. (2014).

| Forest-type group                     | Stand-size class |                 |                |              | All size classes |
|---------------------------------------|------------------|-----------------|----------------|--------------|------------------|
|                                       | Large diameter   | Medium diameter | Small diameter | Nonstocked   |                  |
| Pinyon / juniper group                | 36.7             | 10.4            | -0.1           | --           | 46.9             |
| Douglas-fir group                     | 5.9              | 1.8             | 0.1            | --           | 7.8              |
| Ponderosa pine group                  | 40.0             | 3.2             | 0.9            | --           | 44.2             |
| Fir / spruce / mountain hemlock group | -1.7             | 1.0             | 0.1            | --           | -0.5             |
| Other western softwoods group         | -1.0             | --              | 0.0            | --           | -1.0             |
| Elm / ash / cottonwood group          | 0.3              | 0.2             | 0.0            | --           | 0.5              |
| Aspen / birch group                   | 2.1              | 5.5             | -4.5           | --           | 3.1              |
| Woodland hardwoods group              | 1.9              | 2.5             | -2.9           | --           | 1.5              |
| Exotic hardwoods group                | --               | --              | -0.2           | --           | -0.2             |
| Nonstocked                            | --               | --              | --             | -13.4        | -13.4            |
| <b>All forest-type groups</b>         | <b>84.2</b>      | <b>24.6</b>     | <b>-6.6</b>    | <b>-13.4</b> | <b>88.9</b>      |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table E3**—Average annual net growth of all live trees (at least 5 inches d.b.h./d.r.c.), in million cubic feet, on forest land by species group and ownership group, New Mexico, 2008–2014. This table presents a revision of table B23 in Appendix B of Goeking et al. (2014).

| Species group                   | Ownership group |               |                            |                          | All owners |
|---------------------------------|-----------------|---------------|----------------------------|--------------------------|------------|
|                                 | Forest Service  | Other Federal | State and local government | Undifferentiated private |            |
| Softwood species groups         |                 |               |                            |                          |            |
| Western softwood species groups |                 |               |                            |                          |            |
| Douglas-fir                     | 2.2             | 0.0           | 0.1                        | 5.3                      | 7.7        |
| Ponderosa and Jeffrey pine      | 17.5            | 0.0           | 1.2                        | 19.0                     | 37.6       |
| True fir                        | -9.9            | --            | 0.3                        | 0.1                      | -9.5       |
| Engelmann and other spruces     | -1.6            | --            | 0.0                        | 1.9                      | 0.3        |
| Other western softwoods         | 0.3             | --            | 0.0                        | 1.0                      | 1.3        |
| Other                           |                 |               |                            |                          |            |
| Western woodland softwoods      | 7.1             | 3.3           | 3.8                        | 26.1                     | 40.3       |
| All softwoods                   | 15.6            | 3.3           | 5.4                        | 53.4                     | 77.7       |
| Hardwood species groups         |                 |               |                            |                          |            |
| Western hardwood species groups |                 |               |                            |                          |            |
| Cottonwood and aspen            | 2.1             | --            | 0.6                        | 1.8                      | 4.5        |
| Other western hardwoods         | 0.0             | --            | --                         | 0.0                      | 0.0        |
| Other                           |                 |               |                            |                          |            |
| Western woodland hardwoods      | 2.9             | 0.3           | 0.5                        | 2.9                      | 6.7        |
| All hardwoods                   | 5.0             | 0.3           | 1.1                        | 4.7                      | 11.2       |
| All species groups              | 20.7            | 3.5           | 6.2                        | 57.4                     | 87.8       |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.

**Table E4**—Average annual net growth of growing stock trees (at least 5 inches d.b.h.), in million cubic feet, on timberland by species group and ownership group, New Mexico, 2008–2014. This table presents a revision of table B24 in Appendix B of Goeking et al. (2014).

| Species group                   | Ownership group |               |                            |                          | All owners |
|---------------------------------|-----------------|---------------|----------------------------|--------------------------|------------|
|                                 | Forest Service  | Other Federal | State and local government | Undifferentiated private |            |
| Softwood species groups         |                 |               |                            |                          |            |
| Western softwood species groups |                 |               |                            |                          |            |
| Douglas-fir                     | 3.5             | --            | 0.5                        | 4.8                      | 8.8        |
| Ponderosa and Jeffrey pine      | 17.5            | 0.1           | 1.1                        | 15.7                     | 34.3       |
| True fir                        | -6.0            | --            | 0.2                        | -0.1                     | -5.9       |
| Engelmann and other spruces     | -0.7            | --            | 0.0                        | 1.9                      | 1.2        |
| Other western softwoods         | -0.2            | --            | 0.0                        | 1.0                      | 0.8        |
| All softwoods                   | 14.0            | 0.1           | 1.7                        | 23.2                     | 39.0       |
| Hardwood species groups         |                 |               |                            |                          |            |
| Western hardwood species groups |                 |               |                            |                          |            |
| Cottonwood and aspen            | 2.6             | --            | 0.5                        | 2.5                      | 5.7        |
| Other western hardwoods         | 0.0             | --            | --                         | 0.0                      | 0.0        |
| All hardwoods                   | 2.6             | --            | 0.5                        | 2.5                      | 5.6        |
| All species groups              | 16.6            | 0.1           | 2.3                        | 25.7                     | 44.7       |

All table cells without observations in the inventory sample are indicated by --. Table value of 0.0 indicates the volume rounds to less than 0.1 million cubic feet. Columns and rows may not add to their totals due to rounding.







In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at [http://www.ascr.usda.gov/complaint\\_filing\\_cust.html](http://www.ascr.usda.gov/complaint_filing_cust.html) and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: [program.intake@usda.gov](mailto:program.intake@usda.gov).

Federal Recycling Program



Printed on Recycled Paper



To learn more about RMRS publications or search our online titles:

**[www.fs.fed.us/rm/publications](http://www.fs.fed.us/rm/publications)**

**[www.treeseearch.fs.fed.us](http://www.treeseearch.fs.fed.us)**