

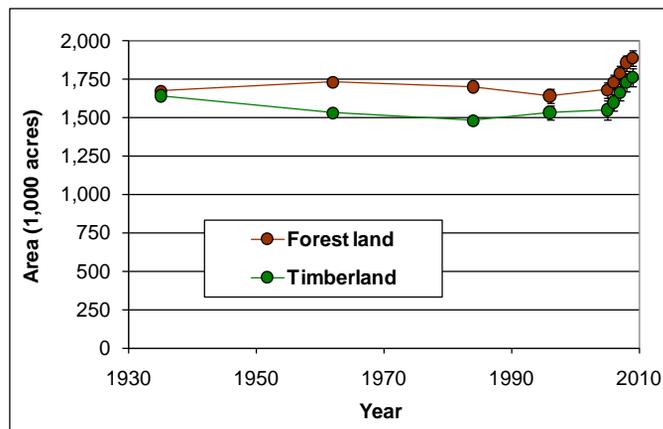
# South Dakota's Forest Resources, 2009

Research Note NRS-82

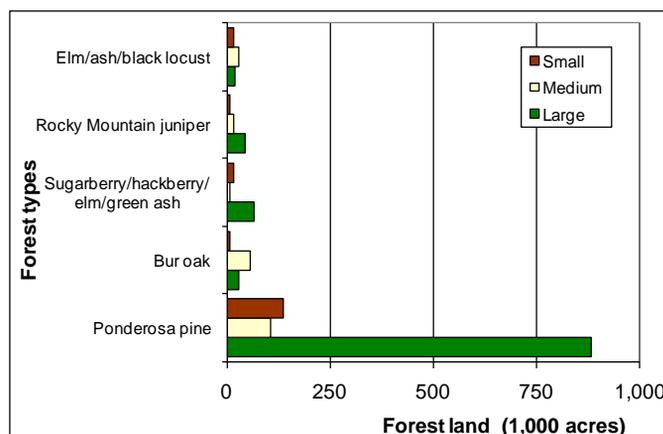
This publication provides an overview of forest resource attributes for South Dakota based on an annual inventory conducted by the Forest Inventory and Analysis program of the U.S. Forest Service, Northern Research Station. These estimates, along with web-posted core tables, will be updated annually. For more information regarding past inventory reports for South Dakota, inventory program information, and sampling/estimation procedures, please refer to the citations on page 4 of this report. For definitions of terms used in this report, see 'Glossary of Terms' at: <http://nrs.fs.fed.us/fia/data-tools/state-reports/SD/>.

**Table 1. – Annual estimates, uncertainty, and change, South Dakota**

	2009	Sampling error (percent)	Change since 2004 (percent)
<b>Forest Land Estimates</b>			
Area (1,000 acres)	1,889.5	2.9	15.3
Number of live trees 1-inch diameter or larger (million trees)	536.3	5.9	5.7
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	45,112.1	4.2	6.2
Net volume in live trees (million ft <sup>3</sup> )	2,271.9	4.1	4.9
Annual net growth of live trees (1,000 ft <sup>3</sup> /year)	39,075.2	20.8	NA
Annual mortality of live trees (1,000 ft <sup>3</sup> /year)	27,835.5	15.2	NA
Annual harvest removals of live trees (1,000 ft <sup>3</sup> /year)	27,936.1	23.3	NA
Annual other removals of live trees (1,000 ft <sup>3</sup> /year)	0.0	0.0	NA
<b>Timberland Estimates</b>			
Area (1,000 acres)	1,763.4	3.0	19.4
Number of live trees 1-inch diameter or larger (million trees)	506.0	6.1	9.4
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	42,540.2	4.4	9.7
Net volume in live trees (million ft <sup>3</sup> )	2,165.7	4.4	8.5
Net volume of growing-stock trees (million ft <sup>3</sup> )	1,928.8	4.5	0.2
Annual net growth of growing-stock trees (1,000 ft <sup>3</sup> )	41,850.3	21.4	NA
Annual mortality of growing-stock trees (1,000 ft <sup>3</sup> /year)	20,644.8	16.9	NA
Annual harvest removals of growing-stock trees (1,000 ft <sup>3</sup> /year)	26,837.9	24.0	NA
Annual other removals of growing-stock trees (1,000 ft <sup>3</sup> /year)	29.2	100.2	NA



**Figure 1. – Area of timberland and forest land by year, South Dakota.**



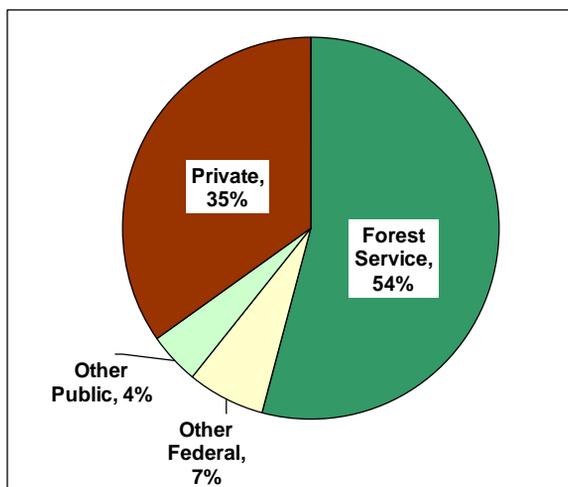
**Figure 2. – Area of forest land for top five forest types by stand-size class, South Dakota, 2009.**

Note: Large diameter trees are at least 11.0 inches diameter for hardwoods and at least 9.0 inches diameter for softwoods. Medium diameter trees are at least 5.0 inches diameter but not as large as large diameter trees. Small diameter trees are less than 5.0 inches diameter.

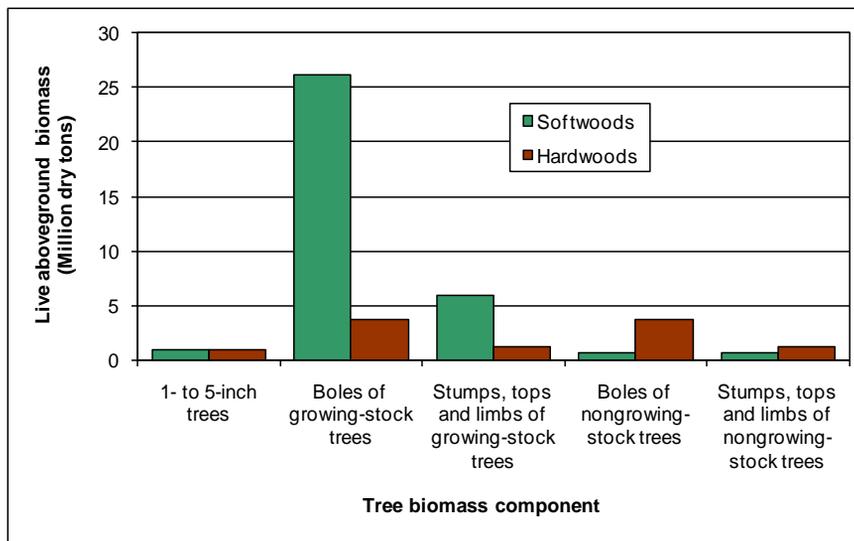


**Table 2 - Top 10 species by volume, South Dakota, 2009**

Rank	Species	Volume of live trees on forest land (1,000,000 ft <sup>3</sup> )	Sampling error (%)	Change since 2004 (%)	Volume of sawtimber trees on timberland (1,000,000 bdf)	Sampling error (%)	Change since 2004 (%)
1	Ponderosa pine	1,727.1	4.7	-3.6	6,005.5	6.3	-0.2
2	Bur oak	98.8	22.6	9.3	88.8	36.3	1.5
3	Green ash	93.2	20.0	87.1	138.4	33.4	114.9
4	Cottonwood	86.9	33.8	22.4	292.5	39.9	-7.2
5	White spruce	83.0	24.3	39.5	282.3	26.4	40.9
6	American elm	52.4	23.9	81.9	55.9	47.5	197.3
7	Rocky Mountain juniper	34.7	27.8	450.8	0.0	0.0	0.0
8	Boxelder	28.9	34.1	72.0	4.4	100.2	-80.9
9	Quaking aspen	19.4	27.4	-32.2	4.3	73.4	-62.3
10	Eastern redcedar	13.5	35.3	50.0	29.5	59.5	2.1
	Other softwoods	0.0	0.0	0.0	0.0	0.0	0.0
	Other hardwoods	34.1	23.0	132.0	31.6	67.5	887.5
	<b>All Species</b>	<b>2,271.9</b>	<b>4.1</b>	<b>4.9</b>	<b>6,933.2</b>	<b>5.9</b>	<b>2.4</b>



**Figure 3. – Percent of forest land by ownership group, South Dakota, 2009.**



**Figure 4. – Live aboveground tree biomass on forest land by softwood/hardwood and tree biomass component, South Dakota, 2009.**

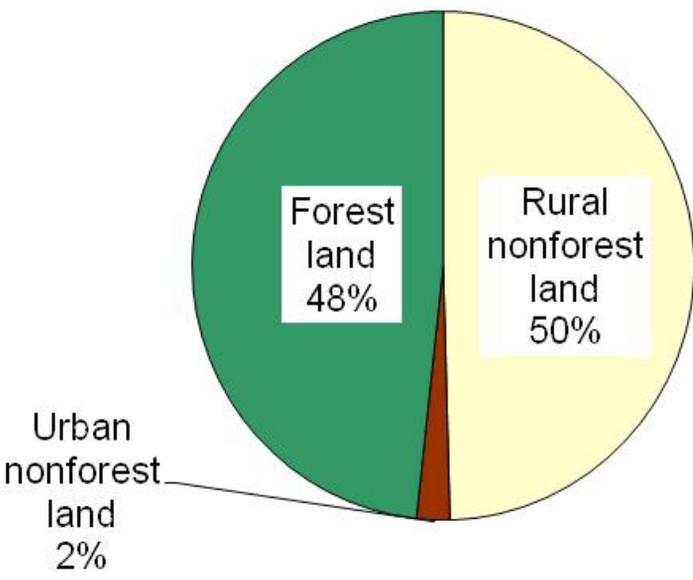
## Mountain Pine Beetle Epidemic

The mountain pine beetle (MPB) (*Dendroctonus ponderosae*) has been described as the most important biotic agent of change in western pine forests. Since 2000, the mountain pine beetle has been changing pine forests on millions of acres across the western United States from green (healthy) to red (infested/dying) to gray (dead) (USDA Forest Service 2010). In 2009, aerial detection surveys found an estimated 22,300 acres of additional forest land western South Dakota with trees damaged or killed by MPB (Fig. 5). The current infestation is moving into western Lawrence County. Most of the areas affected are in the Black Hills counties of Custer, Lawrence, Meade, and Pennington.

## Great Plains Tree and Forest Invasives Initiative

Emerald ash borer (EAB) (*Agrilus planipennis*) is a highly invasive, exotic insect that attacks and kills all species of North American ash trees. A \$500,000 seed grant by the U.S. Forest Service allowed state forestry agencies in Kansas, Nebraska, North Dakota, and South Dakota to engage in a regional initiative to prepare for the arrival of invasive pests, such as EAB, that threaten tree resources in the northern plains. The Great Plains Tree and Forest Invasives Initiative (Great Plains Initiative) gave state forestry agencies the opportunity to work together to prepare for EAB's arrival by raising public awareness, promoting alternatives to ash tree plantings, assessing the region's tree resources, and determining the potential EAB impacts to those resources. One of the goals of the Great Plains Initiative was to assess the ash resource in the Plains States.

The survey was conducted in 2008 and 2009. There were 200 urban and 300 rural plots that were measured in South Dakota. Ash is the fifth most abundant forest land tree species, with an estimated 22.6 million ash trees (1-inch diameter or greater). However, plot measurements in rural/urban areas from the Great Plains Initiative found that the greatest percent of the ash resource (23.2 million trees) was in rural, nonforest areas (Fig. 6). These areas include windbreaks, shelterbelts, other agricultural land and farmsteads with trees, and riparian wooded strips. There were another 1.0 million ash trees in the urban areas of South Dakota. Ash was the most common street tree in the State with over 36 percent of the total street tree population (Ball et al. 2007).



**Figure 6. – Percent of live ash trees 1 inch and greater by land use, South Dakota.**  
 Note: The number of forest land trees are estimated from Forest Inventory and Analysis' inventory of forest land (2005-2009). The number of rural and urban trees are estimated from the Great Plains Initiative's inventory of nonforest land (2008-2009).

### Citation for this Publication

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### FIA Program Information

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Estimates, tabular data, and maps from this report may be generated at <http://www.fia.fs.fed.us/tools-data>

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