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North Dakota's Forest Resources, 2010

Research Note NRS-104

This publication provides an overview of forest resource attributes for North Dakota based on an annual inventory conducted by the Forest Inventory and Analysis (FIA) program at the Northern Research Station of the U.S. Forest Service. These estimates, along with web-posted core tables, will be updated annually. For more information, please refer to page 4 of this report.

Table 1. – Annual estimates, uncertainty, and change

	Estimate 2010	Sampling error (%)	Change since 2005 (%)
Forest Land Estimates			
Area (1,000 acres)	772.4	6.1	6.0
Number of live trees 1-inch diameter or larger (million trees)	341.6	9.1	-1.3
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	18,361.1	8.3	0.4
Net volume in live trees (1,000,000 ft ³)	711.5	9.9	0.8
Annual net growth of live trees (1,000 ft ³ /year)	13,454.7	25.9	NA
Annual mortality of live trees (1,000 ft ³ /year)	13,056.9	20.8	NA
Annual harvest removals of live trees (1,000 ft ³ /year)	1,032.7	80.7	NA
Annual other removals of live trees (1,000 ft ³ /year)	2,009.9	71.5	NA
Timberland Estimates			
Area (1,000 acres)	533.8	7.8	0.5
Number of live trees 1-inch diameter or larger (million trees)	223.9	11.1	-14.4
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	14,813.2	10.3	-3.2
Net volume in live trees (1,000,000 ft ³)	593.1	11.9	-1.5
Net volume of growing-stock trees (1,000,000 ft ³)	341.2	15.9	-7.5
Annual net growth of growing-stock trees (1,000 ft ³ /year)	6,839.2	37.0	NA
Annual mortality of growing-stock trees (1,000 ft ³ /year)	6,533.4	32.9	NA
Annual harvest removals of growing-stock trees (1,000 ft ³ /year)	492.2	93.9	NA
Annual other removals of growing-stock trees (1,000 ft ³ /year)	2,088.1	58.0	NA

NA: Percent change estimates are not available for growth, mortality and removals.

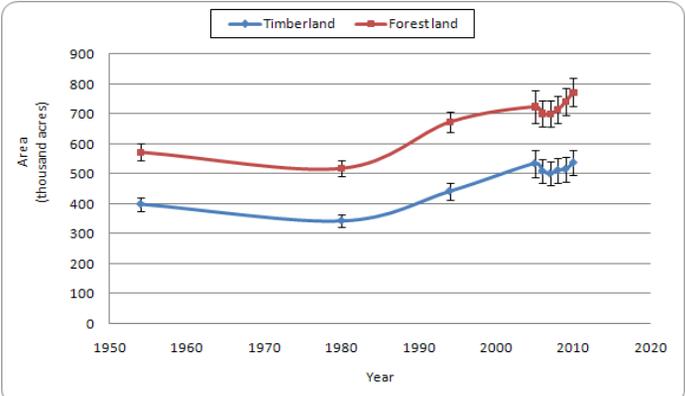


Figure 1. – Area of timberland and forest land by year.

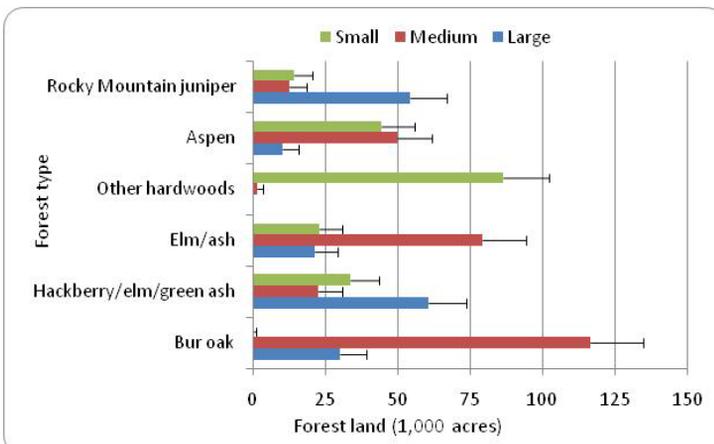


Figure 2. – Area of forest land area by top six forest types and stand size class, 2006-2010.

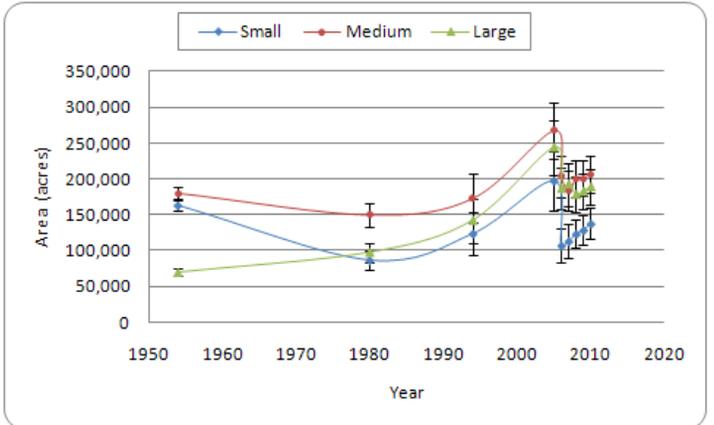


Figure 3. – Area of timberland by stand size class and year.

Note: When available, sampling errors/bars provided in figures and tables represent 68 percent confidence intervals

Image credit: Terry Spivey, USDA Forest Service, Bugwood.org

Table 2. – Top ten tree species by statewide volume estimates, 2006-2010

Rank	Species	Volume of live trees on forest land (1,000,000 ft ³)	Sampling error (%)	Change since 2005 (%)	Volume of sawtimber trees on timberland (1,000,000 bdf)	Sampling error (%)	Change since 2005 (%)
1	Bur oak	171.8	15.2	5.1	242.9	37.0	1.2
2	Cottonwood	167.8	32.6	4.1	549.2	41.4	10.3
3	Green ash	131.1	11.9	-0.2	156.6	24.8	-1.8
4	Quaking aspen	76.1	22.3	-24.4	98.8	36.9	-28.1
5	Boxelder	51.5	19.5	6.6	31.5	63.5	443.1
6	Rocky Mountain juniper	41.2	27.6	27.6	0.0	0.0	0.0
7	American elm	32.1	37.3	9.6	51.2	51.8	9.6
8	American basswood	18.7	53.1	55.8	33.5	67.9	150.0
9	Balsam poplar	5.4	37.1	-54.6	2.8	109.3	-82.5
10	Siberian elm	4.8	54.0	11.6	4.1	74.1	7.9
	Other softwoods	3.9	88.1	290.0	0.0	0.0	-100.0
	Other hardwoods	6.9	57.7	-31.7	12.5	100.0	0.0
	All Species	711.5	9.9	0.8	1,183.0	22.9	5.4

Ownership of forest land

- Private forest land – 68.3 % of all forest land
- Public forest land – 31.7 % of all forest land
- Nonforest

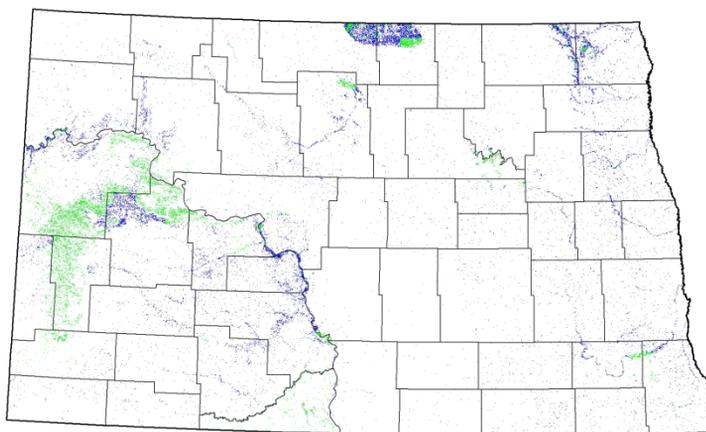


Figure 4. – Area of forest land by major owner group, 2006-2010 (1.6% of North Dakota is forested).

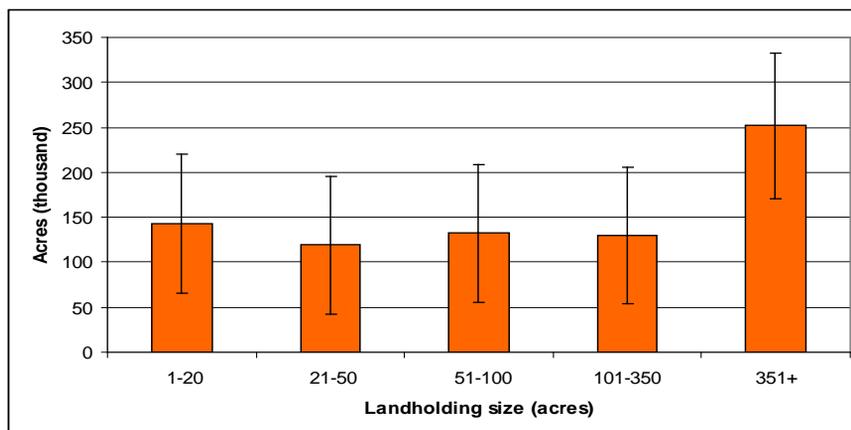


Figure 5. – Area of forest land by major owner group and size of private forest landholding in North and South Dakota, 2006.

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North Dakota Issue Update —The Emerald Ash Borer

Emerald ash borer, *Agrilus planipennis* Fairmaire (EAB), is moving closer to North Dakota. EAB is a highly invasive, exotic insect that attacks and kills all species of North American ash trees.

The nearest infestations to North Dakota are in the Twin Cities of Minnesota. EAB larva tunnel through the conductive tissue under the bark, cutting off a tree's food source and eventually killing the tree in as little as 3 years. EAB has already killed millions of ash trees in the U.S. Since its introduction from Asia in the early 1990s, EAB has killed more than 50 million ash trees in Michigan, Illinois, Indiana, Kentucky Ohio, Pennsylvania, Maryland, Minnesota, Missouri, New York, Virginia, West Virginia, Wisconsin, and Ontario, Canada. In 2010, EAB was also discovered in Iowa and Tennessee. Across the United States, hundreds of millions more ash trees are at risk. Surveys conducted in North Dakota in 2010 did not reveal evidence of EAB.

Ash is the most abundant forest land tree species in North Dakota, with an estimated 79 million ash trees (1-inch diameter or greater, Fig. 6). Ash represents 23 percent of all species on forest land and accounts for 131 million ft³ of live-tree volume. Additionally, data collected by the Great Plains Tree and Forest Invasive Initiative (GPI) indicates that 41 percent of the state's rural nonforest land with trees is comprised of ash. This would include narrow riparian areas where ash makes up about 65 percent of all species. Also, the state's 55,000 miles of windbreaks are comprised of about 33 percent ash. In urban areas, the survey found ash to be the most common tree in North Dakota communities at approximately 40 percent of the tree resource.

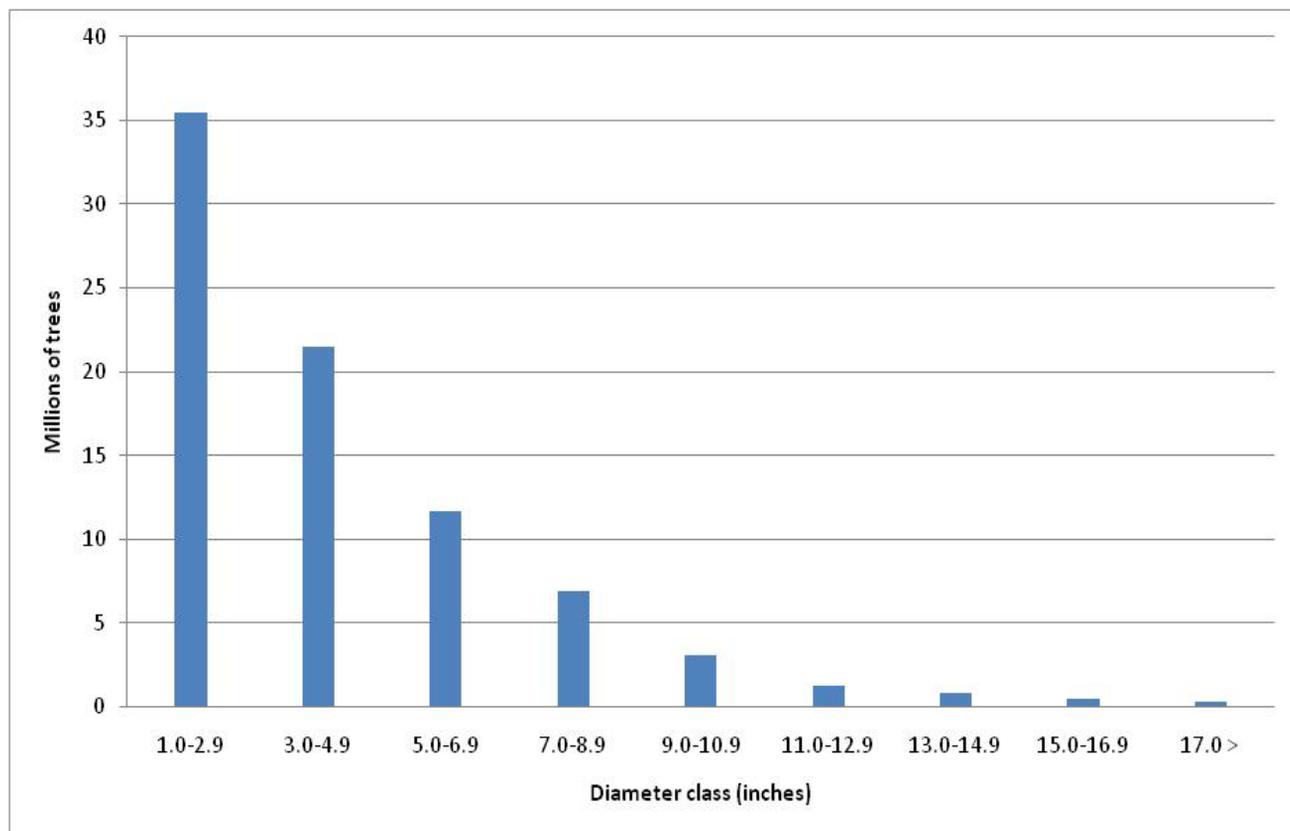


Figure 6. – Number of ash trees, by diameter class, forest land area, North Dakota 2010.

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