USDA Forest Service, US Department of Agriculture
Northern Research Station

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

North Dakota's Forest Resources, 2012

Research Note NRS-167

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 2012	Sampling error (%)	Change since 2008 (%)
Forest land estimates			
Area (1,000 acres)	753.6	6.2	5.5
Number of live trees 1-inch diameter or larger (million trees)	350.3	9.3	5.7
Dry biomass of live trees 1-inch or larger (1,000 tons)	19,025.8	8.4	11.8
Net volume in live trees (1,000,000 ft³)	739.4	9.9	11.2
Annual net growth of live trees (1,000 ft³/year)	17,750.0	16.5	156.5
Annual mortality of live trees (1,000 ft³/year)	10,958.2	15.6	-19.5
Annual harvest removals of live trees (1,000 ft³/year)	1,271.7	68.4	455.1
Annual other removals of live trees (1,000 ft³/year)	1,184.5	77.2	-39.4
Timberland estimates			
Area (1,000 acres)	506.0	8.0	-1.1
Number of live trees 1-inch diameter or larger (million trees)	224.8	11.3	-6.4
Dry biomass of live trees 1-inch diameter or larger (1,000 tons)	15,111.9	10.5	7.2
Net volume in live trees (1,000,000 ft³)	607.4	12.1	7.9
Net volume of growing-stock trees (1,000,000 ft³/year)	337.3	16.3	-3.7
Annual net growth of growing-stock trees (1,000 ft³/year)	8,331.3	21.7	231.7
Annual mortality of growing-stock trees (1,000 ft³/year)	4,833.1	23.1	-40.6
Annual harvest removals of growing-stock trees (1,000 ft³/year)	573.8	81.8	1,612.8
Annual other removals of growing-stock trees (1,000 ft³/year)	263.7	74.2	-92.2

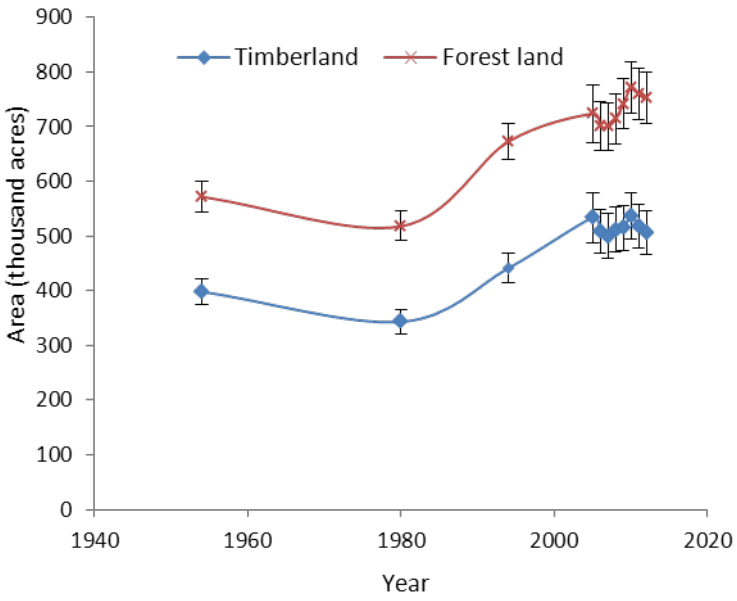

Figure 1. – Area of timberland and forest land by year.

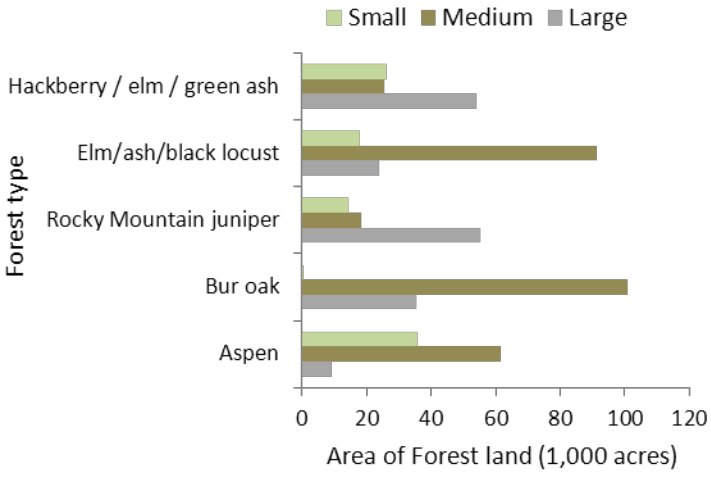

Figure 2. – Area of forest land area by top five forest types and stand size class, 2007-2011.

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. Additional details are available in U.S. Forest Service (2007).

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

Table 2. - Top ten tree species by statewide volume estimates, 2008-2012

Rank	Species	Volume of live trees on forest land (million cubic feet)	Sampling error (%)	Change since 2008 (%)	Volume of sawtimbmber trees on timberland (million board feet)	Sampling error (%)	Change since 2008 (%)
1	Bur oak	178.1	15.7	20.7	244.7	36.0	5.5
2	Cottonwood	175.7	32.3	9.9	538.1	42.5	4.6
3	Green ash	132.6	12.3	8.2	159.4	25.0	6.6
4	Quaking aspen	83.9	20.7	12.6	124.9	40.3	13.2
5	Boxelder	51.2	18.9	4.3	16.1	71.3	-52.4
6	Rocky Mountain juniper	43.9	27.0	17.1	0.0	0.0	0.0
7	American elm	33.5	36.9	22.7	51.8	54.9	12.6
8	American basswood	19.4	52.1	22.8	35.5	66.7	12.3
9	Balsam poplar	6.2	37.8	-19.5	2.9	107.6	-79.7
10	Peachleaf willow	6.0	79.0	361.5	0.0	0.0	0.0
	Other softwoods	1.9	61.8	-55.8	0.0	0.0	0.0
	Other hardwoods	6.9	40.5	-59.6	4.3	72.4	-75.8
	All species	739.4	9.9	11.2	1,177.9	22.3	2.4

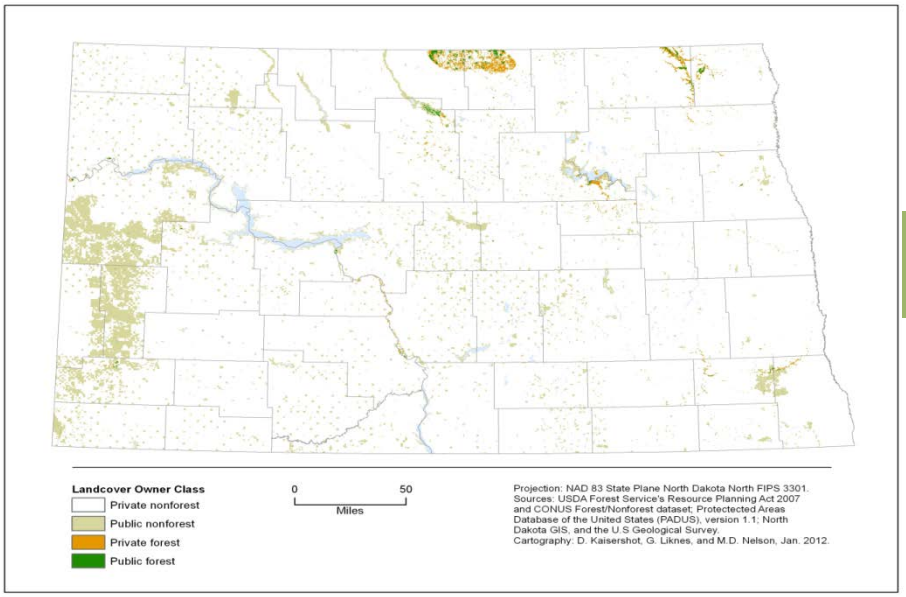

Figure 4. – Area of forest land by major owner group, (1.6% of North Dakota is forested).

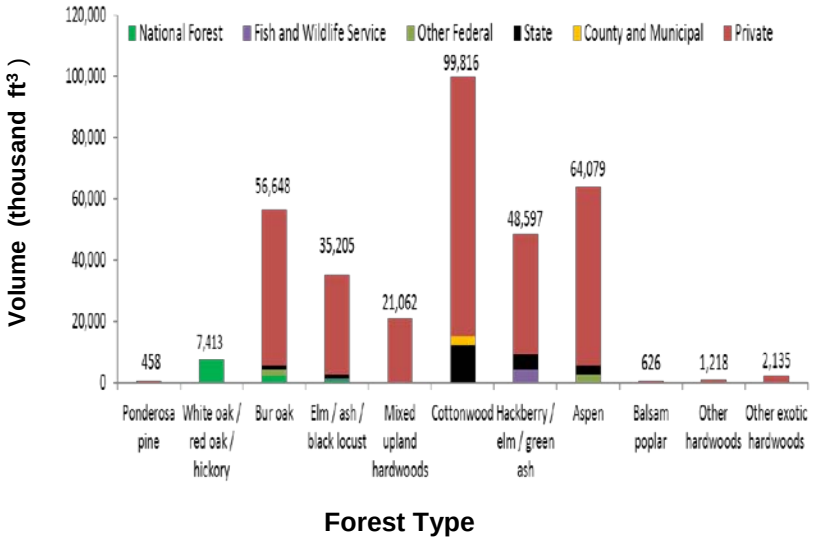

Figure 5. – Net volume of growing-stock trees (at least 5 inches d.b.h./d.r.c.), in thousand cubic feet, on timberland by forest type and ownership, North Dakota, 2012

North Dakota Issue Update —Environmental Impacts on Tree Health

In 2011, record flooding occurred across the entire state of North Dakota. Floodwaters severely impacted riparian and community forests, along with rising lake levels (Turtle Mountains and Devils Lake) and prolonged growing season flooding within the Missouri and Mouse River Basins. 2011 was among the wettest years on record (12th wettest growing season since 1895; Fig. 6) (Akyüz and Mullins, 2011). In a remarkable contrast, 2012 was among the driest years on record (13th driest growing season since 1895; Fig. 7) (Akyüz and Mullins, 2012). The effects of these environmental extremes has already negatively impacted tree health across the state (Fig. 8) and one can expect this trend to increase and worsen as populations/prevalence of secondary damaging agents continue to increase.

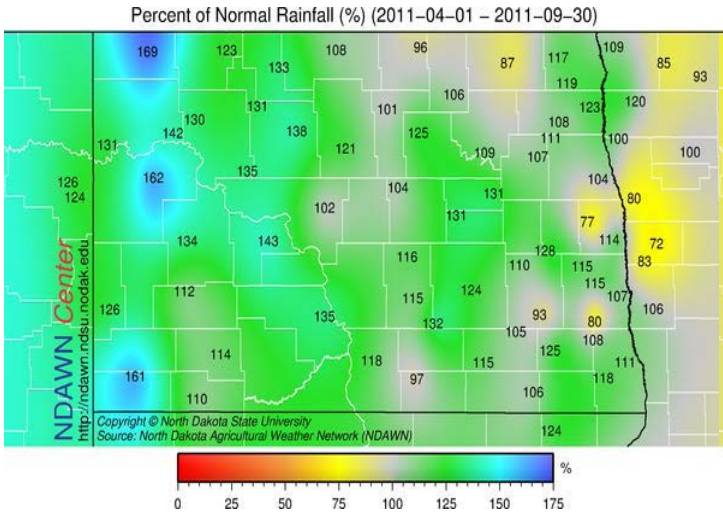

Figure 6. – Percent of normal rainfall during the 2011 growing season. (North Dakota Agricultural Network: http://ndawn.ndsu.nodak.edu)

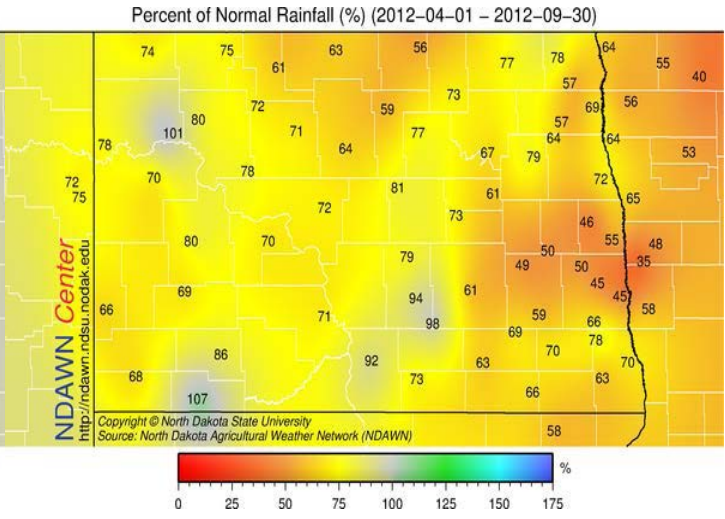

Figure 7. – Percent of normal rainfall during the 2012 growing season. (North Dakota Agricultural Network: http://ndawn.ndsu.nodak.edu)

Figure 8. – The same trees in a flooded area near Devils Lake in the summer of 2011 (left) and autumn of 2012 (right). (Photos by A. Bergdahl, North Dakota Forest Service, used with permission).

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Estimates, tabular data, and maps from report may be generated at: fiatools.fs.fed.us
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