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Timber Supply, Magnolia, Arkansas



**ARKANSAS CENTER FOR
FOREST BUSINESS**
UNIVERSITY OF ARKANSAS AT MONTICELLO

College of Forestry,
Agriculture, and Natural
Resources

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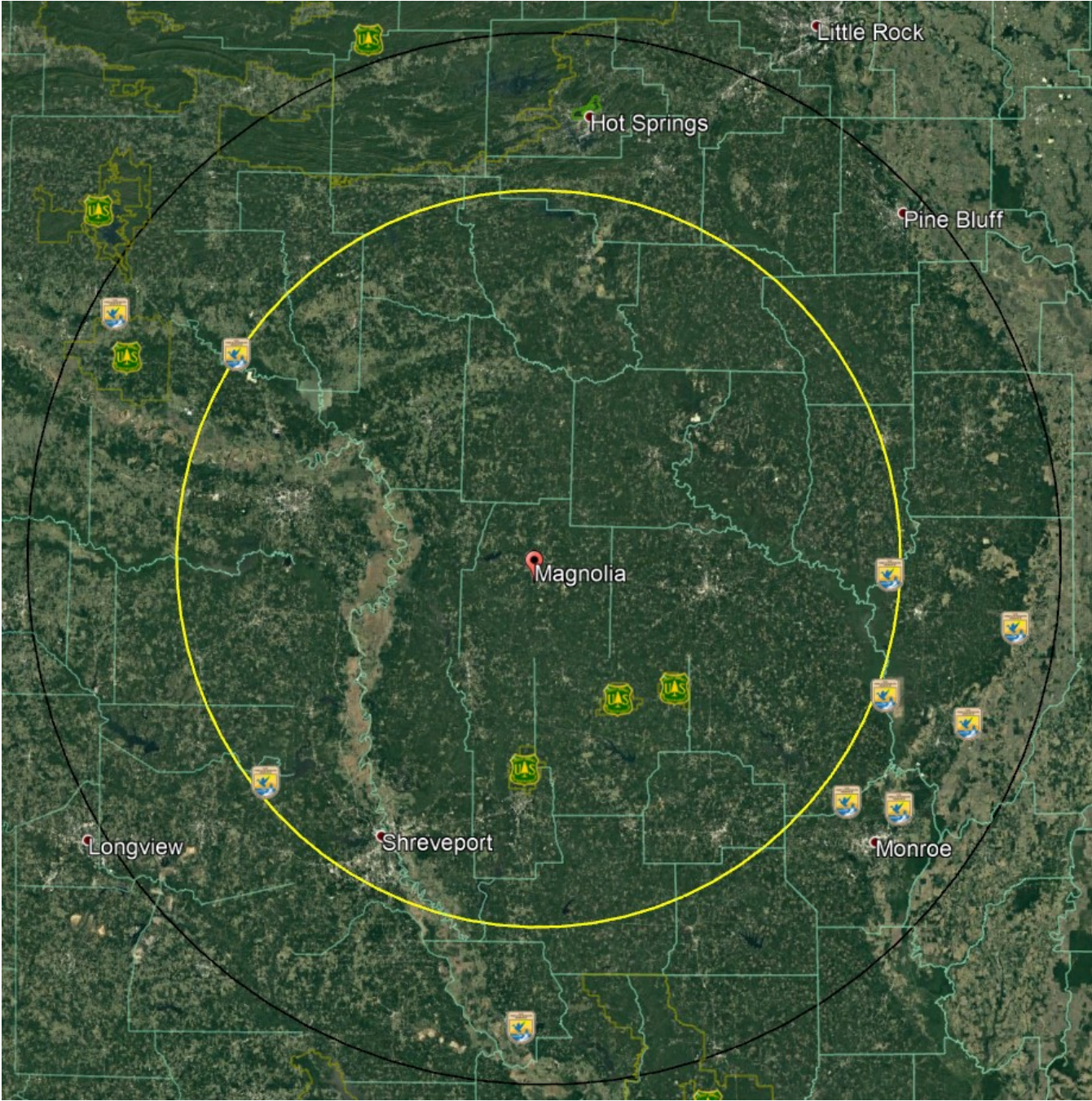


Figure 1. 70 and 100 mile radii around Magnolia, Arkansas.

Summary

The timber resources in the 70-miles surrounding Magnolia, Arkansas can support additional harvests greater than 4.9 million tons per year in pine saw logs and 2.5 million tons in pine pulpwood and top wood. Within 100 miles, these values increase to 8.6 and 3.5 million tons per year in saw logs and pulpwood/top wood, respectively. Annual hardwood removals could increase by 1.0 million tons in saw logs and 0.6 million tons in pulpwood and top wood, with these values increasing to 2.5 and 1.2 million tons, respectively, in a 100-mile radius. The majority of oak and hardwood timber is in grade 3 and lower trees, but growing stock in grade 1 and 2 trees is generally increasing. Grade 1 select white oaks over the last ten years have seen a net decline in sawlog volumes by 34%.

This data comes from the most recent FIA data (2019 – AR and MO) and does not reflect changes in forest cover, growth, or removals from that time to present. Changes in existing mill production and other forest disturbances could have a substantial effect on the values provided here, and those changes will likely increase over time.

Highlights of Tables

- There are 7.3 and 14.4 million acres of timberland land within 70 and 100 miles, respectively, of Magnolia, Arkansas
- Pine (52%) is the dominant forest type in the region followed by upland hardwoods (19%), bottomland hardwoods (16%), and oak/pine (11%).
- Naturally regenerated forests cover account for 63% of all forestland in the region, but 63% of pine covertypes are *artificially* regenerated. Only 8% of non-pine forests are artificially regenerated
- 92% of the forest land is privately owned and forest growing stock, growth, and removals are generally proportional to ownership
- Within 70 miles of Magnolia
 - 249 million tons of pine growing stock, 177 million tons of which is pine saw timber and 71 million tons of pulpwood and top wood
 - 176 million tons of hardwood growing stock, 97 million tons of which is saw timber and 80 million tons is pulpwood and top wood
 - Annual surplus in pine growth is 4.9 million tons in saw timber and 2.5 million tons in pulpwood
 - Annual surplus in hardwood growth is 1.0 million tons in saw timber and 0.6 million tons in pulpwood
 - Over the last 10 years, select white oak and select red oak volumes are increasing, more than 50% of all hardwoods have a tree grade of 3 or lower. Grade 1 select white oaks have actually declined in abundance in the last 10 years. (Table 12).
- Within 100 miles of Magnolia
 - 452 million tons of pine growing stock, 322 million tons of which is pine saw timber and 131 million tons of pulpwood and top wood
 - 363 million tons of hardwood growing stock, 199 million tons of which is saw timber and 164 million tons is pulpwood and top wood
 - Annual surplus in pine growth is 8.6 million tons in saw timber and 3.5 million tons in pulpwood and top wood
 - Annual surplus in hardwood growth is 2.5 million tons in saw timber and 1.2 million tons in pulpwood and top wood

Purpose/Objectives

The purpose of this analysis is to create a one-time snapshot of merchantable timber around Magnolia Arkansas. The data tables attached will provide information on the following:

- Timberland area within 70 and 100 miles aerial radius of Magnolia, Arkansas by ownership and forest type group (Tables 1 and 2)
- Timberland area within 100 miles aerial radius of Magnolia, Arkansas by forest type group and stand origin (Table 3)
- Within 70 miles and 100 miles for major species groups and ownership groups:
 - Current growing stock for merchantable bole, sawlogs, and pulpwood/topwood (Table 4 and 9)
 - Annual net growth for merchantable bole, sawlogs, and pulpwood/topwood (Table 5 and 10)
 - Annual removals group for merchantable bole, sawlogs, and pulpwood/topwood (Table 6 and 10)
 - Annual net surplus for merchantable bole, sawlogs, and pulpwood/topwood (Table 7 and 11)
- Within 70 miles, the report will examine hardwood volumes by species groups and tree grade for all owners. (Table 12)

Methods

The USDA Forest Service Forest Inventory and Analysis (FIA) database is the source of the data for these tables. Data comes from the Arkansas (2019) and Missouri (2019) inventories, which, at the time of this report are the most current available. The online software EVALIDATOR and DATIM processed the database queries for these reports. EVALIDATOR and DATIM can be accessed on the FIA National Program website (<https://www.fia.fs.fed.us/tools-data/>).

Some specifics to the database queries are important to note:

- The center of the analysis radii of 70 and 100 miles is 33.267072 degrees north latitude and -93.239334 degrees west longitude (center of Magnolia, Arkansas)
- The results show acre and tonnages based on forestland based on FIA definition (FIADef)
- Ownership categories are either PUBLIC or PRIVATE
- Areas are in acres
- Tree biomass is reported in GREEN SHORT TONS
- Hardwood merchantable volume is presented in International ¼ inch board feet as the database does not report tonnages. Typically, 1000 board feet in the International ¼ log rule will weigh 6.225 tons.

This report is an initial survey of forestland resources. The Arkansas Center for Forest Business upon request can provide more detailed analysis and information regarding the region.

Table 1. Forest acres by forest type group and ownership within a 70-mile radius of Magnolia, Arkansas in 2019.

Forest type group	Total	Public	Private
Total	7,356,323	373,090	6,983,233
Loblolly / shortleaf pine group	4,058,532	111,056	3,947,476
Other eastern softwoods group	1,669	0	1,669
Oak / pine group	773,733	29,396	744,337
Oak / hickory group	1,295,555	74,408	1,221,147
Oak / gum / cypress group	936,251	115,670	820,581
Elm / ash / cottonwood group	182,133	32,053	150,080
Other hardwoods group	17,981	4,806	13,175
Exotic hardwoods group	20,166	5,701	14,465
Nonstocked	70,303	0	70,303

Table 2. Forest acres by forest type group and ownership within a 100-mile radius of Magnolia, Arkansas in 2019.

Forest type group	Total	Public	Private
Total	14,440,735	1,127,046	13,313,689
Longleaf / slash pine group	3,798	3,798	0
Loblolly / shortleaf pine group	7,543,641	363,114	7,180,527
Other eastern softwoods group	13,637	0	13,637
Oak / pine group	1,614,539	172,622	1,441,917
Oak / hickory group	2,768,944	290,995	2,477,949
Oak / gum / cypress group	1,884,249	212,392	1,671,857
Elm / ash / cottonwood group	432,712	71,866	360,847
Maple / beech / birch group	1,477	0	1,477
Other hardwoods group	21,024	4,806	16,218
Exotic hardwoods group	26,378	5,701	20,677
Nonstocked	130,337	1,752	128,584

Table 3. Stand origin by forest cover type within 100-mile radius of Magnolia, Arkansas in 2019.

Forest type group	Total	Natural stands	Clear evidence of artificial regeneration
Total	14,440,735	9,074,146	5,366,589
Longleaf / slash pine group	3,798	3,798	0
Loblolly / shortleaf pine group	7,543,641	2,758,864	4,784,777
Other eastern softwoods group	13,637	8,078	5,559
Oak / pine group	1,614,539	1,317,492	297,047
Oak / hickory group	2,768,944	2,621,133	147,811
Oak / gum / cypress group	1,884,249	1,799,992	84,258
Elm / ash / cottonwood group	432,712	407,545	25,168
Maple / beech / birch group	1,477	1,477	0
Other hardwoods group	21,024	21,024	0
Exotic hardwoods group	26,378	26,378	0
Nonstocked	130,337	108,366	21,970

Table 4. Growing stock of merchantable bole biomass, saw log portion, and pulpwood/topwood portion in green tons by major species group and major ownership group within 70 miles of Magnolia, Arkansas in 2019.

TOTAL MERCHANTABLE BOLE GROWING STOCK IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	354,267,304	113,640,995	240,626,309	0
Pines	110,534,755	36,836,879	73,697,875	0
Other softwoods	8,648,284	2,349,058	6,299,226	0
Soft hardwoods	55,196,688	18,053,094	37,143,594	0
Hard hardwoods	179,887,577	56,401,964	123,485,613	0

SAWLOG PORTION OF GROWING STOCK IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	217,357,852	74,945,285	142,412,567	0
Pines	82,450,710	30,247,020	52,203,690	0
Other softwoods	5,587,059	1,666,002	3,921,057	0
Soft hardwoods	29,380,781	10,977,870	18,402,911	0
Hard hardwoods	99,939,302	32,054,393	67,884,909	0

PULPWOOD and TOPWOOD PORTION OF GROWING STOCK IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	136,909,452	38,695,710	98,213,742	0
Pines	28,084,045	6,589,859	21,494,185	0
Other softwoods	3,061,225	683,056	2,378,169	0
Soft hardwoods	25,815,907	7,075,224	18,740,683	0
Hard hardwoods	79,948,275	24,347,571	55,600,704	0

Table 5. Annual net growth of merchantable bole biomass, saw log portion, and pulpwood/topwood portion in green tons by major species group and major ownership group within 70 miles of Magnolia, Arkansas in 2019.

MERCHANTABLE BOLE BIOMASS NET ANNUAL GROWTH IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	11,324,108	2,124,414	9,221,578	-21,883
Pines	6,035,933	961,909	5,058,817	15,207
Other softwoods	257,483	58,599	197,805	1,079
Soft hardwoods	1,677,115	416,647	1,268,042	-7,574
Hard hardwoods	3,353,577	687,259	2,696,913	-30,596

SAWLOG PORTION OF NET ANNUAL GROWTH IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	8,541,217	1,946,166	6,620,319	-25,268
Pines	4,687,931	1,011,006	3,664,313	12,612
Other softwoods	174,418	44,941	129,094	383
Soft hardwoods	1,066,565	309,293	770,374	-13,102
Hard hardwoods	2,612,302	580,926	2,056,538	-25,162

PULPWOOD and TOPWOOD PORTION OF NET ANNUAL GROWTH IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	2,782,891	178,249	2,601,258	3,385
Pines	1,348,002	-49,097	1,394,504	2,595
Other softwoods	83,065	13,659	68,711	696
Soft hardwoods	610,550	107,354	497,669	5,528
Hard hardwoods	741,274	106,333	640,376	-5,434

Table 6. Annual removals of merchantable bole biomass, saw log portion, and pulpwood/topwood portion in green tons by major species group and major ownership group within 70 miles of Magnolia, Arkansas in 2019.

MERCHANTABLE BOLE BIOMASS ANNUAL REMOVALS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	5,105,225	365,345	4,331,855	408,025
Pines	3,288,105	183,429	2,953,031	151,644
Other softwoods	79,697	5,163	17,426	57,107
Soft hardwoods	285,884	11,339	204,620	69,925
Hard hardwoods	1,451,539	165,414	1,156,778	129,348

SAWLOG PORTION OF ANNUAL REMOVALS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	3,312,334	253,133	2,807,376	251,824
Pines	2,317,635	153,879	2,030,426	133,329
Other softwoods	48,404	2,622	4,239	41,542
Soft hardwoods	104,380	7,535	75,113	21,732
Hard hardwoods	841,914	89,096	697,597	55,221

PULPWOOD and TOPWOOD PORTION OF ANNUAL REMOVALS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	1,792,891	112,212	1,524,479	156,200
Pines	970,470	29,550	922,605	18,315
Other softwoods	31,292	2,541	13,187	15,565
Soft hardwoods	181,503	3,803	129,506	48,193
Hard hardwoods	609,625	76,318	459,180	74,127

Table 7. Annual surplus of merchantable bole biomass, saw log portion, and pulpwood/topwood portion in green tons by major species group and major ownership group within 70 miles of Magnolia, Arkansas in 2019.

MERCHANTABLE BOLE BIOMASS ANNUAL NET SURPLUS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	6,218,884	1,759,069	4,889,723	-429,908
Pines	2,747,828	778,480	2,105,786	-136,437
Other softwoods	177,786	53,436	180,379	-56,028
Soft hardwoods	1,391,232	405,308	1,063,423	-77,499
Hard hardwoods	1,902,038	521,846	1,540,136	-159,944

SAWLOG PORTION OF ANNUAL NET SURPLUS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	5,228,883	1,693,032	3,812,943	-277,092
Pines	2,370,296	857,126	1,633,887	-120,717
Other softwoods	126,014	42,318	124,855	-41,159
Soft hardwoods	962,185	301,758	695,261	-34,834
Hard hardwoods	1,770,388	491,830	1,358,940	-80,382

PULPWOOD and TOPWOOD PORTION OF ANNUAL NET SURPLUS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	990,000	66,037	1,076,780	-152,816
Pines	377,532	-78,647	471,898	-15,720
Other softwoods	51,772	11,118	55,524	-14,869
Soft hardwoods	429,047	103,550	368,162	-42,666
Hard hardwoods	131,649	30,015	181,195	-79,561

Table 8. Growing stock of merchantable bole biomass, saw log portion, and pulpwood/topwood portion in green tons by major species group and major ownership group within 100 miles of Magnolia, Arkansas in 2019.

TOTAL MERCHANTABLE BOLE GROWING STOCK IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	699,281,128	219,234,125	480,047,003	0
Pines	222,732,876	69,770,149	152,962,727	0
Other softwoods	17,960,295	4,219,431	13,740,864	0
Soft hardwoods	96,318,515	30,378,173	65,940,342	0
Hard hardwoods	362,269,442	114,866,372	247,403,070	0

SAWLOG PORTION OF GROWING STOCK IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	431,963,729	149,093,663	282,870,066	0
Pines	166,801,634	58,521,712	108,279,923	0
Other softwoods	10,362,482	3,041,388	7,321,094	0
Soft hardwoods	49,268,888	17,786,837	31,482,051	0
Hard hardwoods	205,530,724	69,743,727	135,786,997	0

PULPWOOD and TOPWOOD PORTION OF GROWING STOCK IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	267,317,399	70,140,462	197,176,937	0
Pines	55,931,242	11,248,437	44,682,804	0
Other softwoods	7,597,813	1,178,043	6,419,770	0
Soft hardwoods	47,049,627	12,591,336	34,458,291	0
Hard hardwoods	156,738,718	45,122,645	111,616,073	0

Table 9. Annual net growth of merchantable bole biomass, saw log portion, and pulpwood/topwood portion in green tons by major species group and major ownership group within 100 miles of Magnolia, Arkansas in 2019.

MERCHANTABLE BOLE BIOMASS NET ANNUAL GROWTH IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	23,223,840	4,282,105	18,953,527	-11,791
Pines	12,756,547	1,812,725	10,928,635	15,188
Other softwoods	564,592	95,393	468,076	1,122
Soft hardwoods	2,851,156	705,266	2,151,508	-5,617
Hard hardwoods	7,051,545	1,668,721	5,405,308	-22,484

SAWLOG PORTION OF NET ANNUAL GROWTH IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	17,329,159	3,825,091	13,523,036	-18,968
Pines	9,859,524	1,862,829	7,984,049	12,646
Other softwoods	334,363	66,508	267,474	381
Soft hardwoods	1,747,281	498,730	1,260,268	-11,717
Hard hardwoods	5,387,991	1,397,024	4,011,246	-20,278

PULPWOOD and TOPWOOD PORTION OF NET ANNUAL GROWTH IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	5,894,681	457,014	5,430,491	7,177
Pines	2,897,023	-50,105	2,944,586	2,542
Other softwoods	230,229	28,886	200,603	741
Soft hardwoods	1,103,875	206,536	891,239	6,100
Hard hardwoods	1,663,554	271,697	1,394,063	-2,206

Table 10. Annual removals of merchantable bole biomass, saw log portion, and pulpwood/topwood portion in green tons by major species group and major ownership group within 100 miles of Magnolia, Arkansas in 2019.

MERCHANTABLE BOLE BIOMASS ANNUAL REMOVALS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	11,058,316	539,712	9,757,478	761,126
Pines	7,255,674	284,757	6,755,526	215,392
Other softwoods	105,800	5,892	40,514	59,394
Soft hardwoods	708,507	32,840	546,740	128,926
Hard hardwoods	2,988,335	216,224	2,414,698	357,414

SAWLOG PORTION OF ANNUAL REMOVALS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	7,368,778	400,915	6,477,406	490,457
Pines	5,257,666	246,321	4,816,367	194,979
Other softwoods	56,390	2,711	12,350	41,329
Soft hardwoods	256,513	22,385	178,361	55,768
Hard hardwoods	1,798,209	129,498	1,470,328	198,382

PULPWOOD and TOPWOOD PORTION OF ANNUAL REMOVALS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	3,689,537	138,797	3,280,071	270,669
Pines	1,998,008	38,436	1,939,159	20,414
Other softwoods	49,410	3,181	28,164	18,065
Soft hardwoods	451,993	10,455	368,379	73,159
Hard hardwoods	1,190,126	86,726	944,369	159,031

Table 11. Annual surplus of merchantable bole biomass, saw log portion, and pulpwood/topwood portion in green tons by major species group and major ownership group within 100 miles of Magnolia, Arkansas in 2019.

MERCHANTABLE BOLE BIOMASS ANNUAL NET SURPLUS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	12,165,524	3,742,392	9,196,049	-772,917
Pines	5,500,873	1,527,968	4,173,109	-200,204
Other softwoods	458,792	89,501	427,562	-58,271
Soft hardwoods	2,142,650	672,426	1,604,767	-134,543
Hard hardwoods	4,063,210	1,452,497	2,990,611	-379,898

SAWLOG PORTION OF ANNUAL NET SURPLUS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	9,960,381	3,424,176	7,045,630	-509,425
Pines	4,601,858	1,616,509	3,167,682	-182,333
Other softwoods	277,973	63,797	255,123	-40,947
Soft hardwoods	1,490,767	476,345	1,081,907	-67,485
Hard hardwoods	3,589,782	1,267,526	2,540,917	-218,661

PULPWOOD and TOPWOOD PORTION OF ANNUAL NET SURPLUS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	2,205,144	318,217	2,150,419	-263,492
Pines	899,015	-88,540	1,005,427	-17,872
Other softwoods	180,819	25,705	172,439	-17,324
Soft hardwoods	651,882	196,081	522,860	-67,059
Hard hardwoods	473,428	184,972	449,693	-161,237

Table 12. Growing stock volume (MBF International ¼ inch) of various hardwoods by species group and grade within 70 miles radius of Magnolia, Arkansas, in 2009 and 2019

Select White Oaks						
Year	Total	Grade 1	Grade 2	Grade 3	Local Use (Grade 4)	No grade
2009	3,454,321	181,023	611,914	1,647,046	886,758	127,581
2019	4,200,854	412,266	856,380	2,316,234	482,136	133,839

Select Red Oaks						
Year	Total	Grade 1	Grade 2	Grade 3	Local Use (Grade 4)	No grade
2009	1,774,504	156,629	389,639	718,169	435,656	74,412
2019	2,046,585	281,801	652,219	892,673	177,339	42,553

Other White Oaks						
Year	Total	Grade 1	Grade 2	Grade 3	Local Use (Grade 4)	No grade
2009	1,745,461	81,796	193,674	720,058	725,972	23,962
2019	2,175,409	144,670	337,782	1,177,164	467,399	48,393

Other Red Oaks						
Year	Total	Grade 1	Grade 2	Grade 3	Local Use (Grade 4)	No grade
2009	3,336,254	404,649	539,832	1,443,627	771,986	176,159
2019	3,612,327	417,092	597,672	1,917,349	484,195	196,019

Other Hard Hardwoods (no oaks)						
Year	Total	Grade 1	Grade 2	Grade 3	Local Use (Grade 4)	No grade
2009	1,811,694	280,809	235,151	724,727	501,343	69,664
2019	2,107,614	291,467	285,849	1,234,696	234,405	61,196

Soft Hardwoods						
Year	Total	Grade 1	Grade 2	Grade 3	Local Use (Grade 4)	No grade
2009	4,256,549	423,712	852,224	1,340,972	763,833	875,808
2019	5,607,147	1,053,660	927,891	2,570,132	568,851	486,612