

2021

Timber Supply,
Gum Springs (Arkadelphia),
Arkansas



ARKANSAS CENTER FOR
FOREST BUSINESS
UNIVERSITY OF ARKANSAS AT MONTICELLO

College of Forestry,
Agriculture, and Natural
Resources

July 2, 2021

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Summary

The timber resources in the 70-miles surrounding Gum Springs (Arkadelphia), Arkansas can support additional harvests greater than 5.0 million tons per year in pine saw logs and 2.3 million tons in pine pulpwood and top wood. Within 100 miles, these values increase to 8.6 and 2.9 million tons per year in saw logs and pulpwood/top wood, respectively. Annual hardwood removals could increase by 1.6 million tons in saw logs and 0.4 million tons in pulpwood and top wood, with these values increasing to 3.2 and 1.4 million tons, respectively, in a 100-mile radius. Select white oak in tree grades 1 and 2 make up 35% of the volume of growing stock within a 70-mile radius of Gum Springs, and select red oak in tree grades 1 and 2 make up 54% of the growing stock. Growing stock of both select white (+376%) and red oaks (+123%) has been increasing in the last 10 years and most other hardwood species are seeing an increase in tree grade in the region.

This data comes from the most recent FIA data (2018-2020) 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 from these values.

Highlights of Tables

- There are 7.6 and 13.6 million acres of timberland within 70 and 100 miles, respectively, of Gum Springs (Arkadelphia), Arkansas
- Pine (50%) is the dominant forest type in the region followed by upland hardwoods (23%), bottomland hardwoods (13%), and oak/pine (12%).
- Naturally regenerated forests cover account for 69% of all timberland in the region, but 57% of pine covertypes are artificially regenerated. Only 6% of non-pine forests are artificially regenerated
- 84% of the forest land is privately owned and forest growing stock, growth, and removals are generally proportional to ownership
- Within 70 miles of Gum Springs (Arkadelphia)
 - 257 million tons of pine growing stock, 189 million tons of which is pine saw timber and 69 million tons of pulpwood and top wood
 - 196 million tons of hardwood growing stock, 110 million tons of which is saw timber and 87 million tons is pulpwood and top wood
 - Annual surplus in pine growth is 5.0 million tons in saw timber and 2.3 million tons in pulpwood
 - Annual surplus in hardwood growth is 1.6 million tons in saw timber and 0.5 million tons in pulpwood
 - Overall hardwood volume and quality are increasing in the region with a 376% increase in grade 1 select white oaks and a 54% increase in grade 1 and 2 select red oaks (Table 12).
- Within 100 miles of Gum Springs (Arkadelphia)
 - 420 million tons of pine growing stock, 309 million tons of which is pine saw timber and 111 million tons of pulpwood and top wood
 - 364 million tons of hardwood growing stock, 197 million tons of which is saw timber and 166 million tons is pulpwood and top wood
 - Annual surplus in pine growth is 8.6 million tons in saw timber and 2.8 million tons in pulpwood and top wood

- Annual surplus in hardwood growth is 3.2 million tons in saw timber and 1.4 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 Gum Springs (Arkadelphia) Arkansas. The data tables attached will provide information on the following:

- Timberland area within 70 and 100 miles aerial radius of Gum Springs (Arkadelphia), Arkansas by ownership and forest type group (Tables 1 and 2)
- Timberland area within 100 miles aerial radius of Gum Springs (Arkadelphia), 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 (2020) and Texas (2018), Oklahoma (2018) and Louisiana (2018) 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 34.06732 degrees north latitude and - 93.091839 degrees west longitude (center of Gum Springs (Arkadelphia), Arkansas)
- The results show acre and tonnages based on timberland 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. Timberland acres by forest type group and ownership within a 70-mile radius of Gum Springs (Arkadelphia), Arkansas in 2019.

Forest type group	Total	Public	Private
Total	7,582,026	1,172,016	6,410,010
Loblolly / shortleaf pine group	4,063,636	540,919	3,522,717
Other eastern softwoods group	5,998	0	5,998
Oak / pine group	910,736	217,629	693,107
Oak / hickory group	1,635,481	346,511	1,288,970
Oak / gum / cypress group	678,740	25,048	653,691
Elm / ash / cottonwood group	213,457	37,296	176,161
Other hardwoods group	12,046	0	12,046
Nonstocked	61,932	4,613	57,319

Table 2. Timberland acres by forest type group and ownership within a 100-mile radius of Gum Springs (Arkadelphia), Arkansas in 2019.

Forest type group	Total	Public	Private
Total	13,623,864	2,238,103	11,385,761
Loblolly / shortleaf pine group	6,748,568	988,050	5,760,518
Other eastern softwoods group	83,337	2,999	80,338
Oak / pine group	1,665,786	393,003	1,272,784
Oak / hickory group	3,184,991	613,278	2,571,713
Oak / gum / cypress group	1,381,032	165,435	1,215,596
Elm / ash / cottonwood group	422,650	60,217	362,433
Maple / beech / birch group	1,477	0	1,477
Other hardwoods group	25,592	4,806	20,786
Exotic hardwoods group	15,074	5,701	9,373
Nonstocked	95,356	4,613	90,744

Table 3. Stand origin by forest cover type within 100-mile radius of Gum Springs (Arkadelphia), Arkansas in 2019.

Forest type group	Total	Natural stands	Clear evidence of artificial regeneration
Total	13,623,864	9,384,603	4,239,261
Loblolly / shortleaf pine group	6,748,568	2,912,068	3,836,500
Other eastern softwoods group	83,337	83,337	0
Oak / pine group	1,665,786	1,432,798	232,988
Oak / hickory group	3,184,991	3,083,284	101,708
Oak / gum / cypress group	1,381,032	1,340,302	40,730
Elm / ash / cottonwood group	422,650	410,797	11,853
Maple / beech / birch group	1,477	1,477	0
Other hardwoods group	25,592	25,592	0
Exotic hardwoods group	15,074	15,074	0
Nonstocked	95,356	79,874	15,483

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 Gum Springs (Arkadelphia), Arkansas in 2019.

TOTAL MERCHANTABLE BOLE GROWING STOCK IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	458,672,889	86,462,822	372,210,067	0
Pines	257,331,155	47,541,261	209,789,894	0
Other softwoods	4,383,704	208,447	4,175,257	0
Soft hardwoods	52,529,855	7,149,771	45,380,084	0
Hard hardwoods	144,428,175	31,563,343	112,864,832	0

SAWLOG PORTION OF GROWING STOCK IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	301,669,490	59,420,645	242,248,844	0
Pines	188,639,320	39,527,400	149,111,920	0
Other softwoods	3,234,204	102,572	3,131,633	0
Soft hardwoods	23,155,813	3,481,457	19,674,356	0
Hard hardwoods	86,640,152	16,309,217	70,330,935	0

PULPWOOD and TOPWOOD PORTION OF GROWING STOCK IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	157,003,399	27,042,177	129,961,223	0
Pines	68,691,835	8,013,861	60,677,974	0
Other softwoods	1,149,500	105,875	1,043,624	0
Soft hardwoods	29,374,042	3,668,314	25,705,728	0
Hard hardwoods	57,788,023	15,254,126	42,533,897	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 Gum Springs (Arkadelphia), Arkansas in 2019.

MERCHANTABLE BOLE BIOMASS NET ANNUAL GROWTH IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	23,691,380	2,323,153	21,351,372	16,855
Pines	18,181,155	1,462,062	16,702,932	16,162
Other softwoods	126,283	10,859	115,424	0
Soft hardwoods	1,474,140	129,230	1,344,599	312
Hard hardwoods	3,909,802	721,002	3,188,418	382

SAWLOG PORTION OF NET ANNUAL GROWTH IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	16,751,026	2,000,575	14,736,259	14,191
Pines	13,115,029	1,423,563	11,677,275	14,191
Other softwoods	105,020	6,982	98,037	0
Soft hardwoods	714,760	78,208	636,552	0
Hard hardwoods	2,816,217	491,821	2,324,396	0

PULPWOOD and TOPWOOD PORTION OF NET ANNUAL GROWTH IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	6,940,354	322,577	6,615,113	2,664
Pines	5,066,126	38,498	5,025,657	1,970
Other softwoods	21,263	3,877	17,387	0
Soft hardwoods	759,380	51,021	708,047	312
Hard hardwoods	1,093,585	229,181	864,022	382

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 Gum Springs (Arkadelphia), Arkansas in 2019.

MERCHANTABLE BOLE BIOMASS ANNUAL REMOVALS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	14,214,341	159,316	13,890,006	165,019
Pines	10,914,692	132,616	10,626,621	155,454
Other softwoods	2,089	394	1,695	0
Soft hardwoods	814,541	1,989	808,149	4,403
Hard hardwoods	2,483,019	24,317	2,453,541	5,162

SAWLOG PORTION OF ANNUAL REMOVALS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	10,029,722	120,082	9,770,659	138,982
Pines	8,125,528	112,605	7,873,941	138,982
Other softwoods	1,273	0	1,273	0
Soft hardwoods	258,603	0	258,603	0
Hard hardwoods	1,644,318	7,476	1,636,841	0

PULPWOOD and TOPWOOD PORTION OF ANNUAL REMOVALS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	4,184,619	39,234	4,119,347	26,037
Pines	2,789,163	20,010	2,752,680	16,473
Other softwoods	816	394	422	0
Soft hardwoods	555,938	1,989	549,546	4,403
Hard hardwoods	838,701	16,841	816,699	5,162

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 Gum Springs (Arkadelphia), Arkansas in 2019.

MERCHANTABLE BOLE BIOMASS ANNUAL NET SURPLUS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	9,477,039	2,163,837	7,461,366	-148,164
Pines	7,266,463	1,329,446	6,076,310	-139,293
Other softwoods	124,194	10,465	113,729	0
Soft hardwoods	659,599	127,241	536,449	-4,091
Hard hardwoods	1,426,783	696,686	734,877	-4,780

SAWLOG PORTION OF ANNUAL NET SURPLUS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	6,721,303	1,880,494	4,965,600	-124,790
Pines	4,989,501	1,310,958	3,803,334	-124,790
Other softwoods	103,747	6,982	96,764	0
Soft hardwoods	456,157	78,208	377,948	0
Hard hardwoods	1,171,899	484,345	687,554	0

PULPWOOD and TOPWOOD PORTION OF ANNUAL NET SURPLUS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	2,755,735	283,343	2,495,765	-23,373
Pines	2,276,962	18,488	2,272,977	-14,502
Other softwoods	20,447	3,483	16,965	0
Soft hardwoods	203,442	49,032	158,501	-4,091
Hard hardwoods	254,883	212,340	47,323	-4,780

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 Gum Springs (Arkadelphia), Arkansas in 2019.

TOTAL MERCHANTABLE BOLE GROWING STOCK IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	795,133,978	169,726,348	625,407,630	0
Pines	419,682,620	88,270,138	331,412,482	0
Other softwoods	11,859,455	2,547,971	9,311,484	0
Soft hardwoods	93,550,306	15,559,125	77,991,180	0
Hard hardwoods	270,041,597	63,349,114	206,692,484	0

SAWLOG PORTION OF GROWING STOCK IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	514,040,034	119,231,683	394,808,351	0
Pines	309,156,149	75,099,071	234,057,079	0
Other softwoods	7,676,338	1,567,648	6,108,690	0
Soft hardwoods	40,766,728	8,089,160	32,677,568	0
Hard hardwoods	156,440,818	34,475,804	121,965,014	0

PULPWOOD and TOPWOOD PORTION OF GROWING STOCK IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	281,093,944	50,494,665	230,599,279	0
Pines	110,526,471	13,171,067	97,355,403	0
Other softwoods	4,183,117	980,323	3,202,794	0
Soft hardwoods	52,783,578	7,469,965	45,313,612	0
Hard hardwoods	113,600,779	28,873,310	84,727,470	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 Gum Springs (Arkadelphia), Arkansas in 2019.

MERCHANTABLE BOLE BIOMASS NET ANNUAL GROWTH IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	39,954,619	3,969,600	35,969,414	15,606
Pines	29,503,820	2,471,861	27,003,524	28,435
Other softwoods	377,827	78,780	299,048	0
Soft hardwoods	2,947,546	283,630	2,660,263	3,653
Hard hardwoods	7,125,426	1,135,329	6,006,579	-16,482

SAWLOG PORTION OF NET ANNUAL GROWTH IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	28,059,963	3,544,922	24,502,997	12,044
Pines	21,660,136	2,448,134	19,187,851	24,152
Other softwoods	272,989	65,587	207,402	0
Soft hardwoods	1,451,820	201,764	1,249,849	208
Hard hardwoods	4,675,017	829,438	3,857,896	-12,316

PULPWOOD and TOPWOOD PORTION OF NET ANNUAL GROWTH IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	11,894,656	424,677	11,466,417	3,562
Pines	7,843,683	23,728	7,815,673	4,282
Other softwoods	104,838	13,192	91,646	0
Soft hardwoods	1,495,726	81,866	1,410,414	3,446
Hard hardwoods	2,450,408	305,891	2,148,684	-4,166

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 Gum Springs (Arkadelphia), Arkansas in 2019.

MERCHANTABLE BOLE BIOMASS ANNUAL REMOVALS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	23,511,129	670,132	22,242,990	598,007
Pines	18,039,962	501,831	17,252,006	286,125
Other softwoods	68,412	6,434	16,683	45,295
Soft hardwoods	1,371,490	9,787	1,290,678	71,024
Hard hardwoods	4,031,265	152,079	3,683,623	195,563

SAWLOG PORTION OF ANNUAL REMOVALS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	15,976,499	462,661	15,111,750	402,088
Pines	13,065,719	366,370	12,464,901	234,448
Other softwoods	48,480	2,739	6,558	39,184
Soft hardwoods	425,264	3,416	400,349	21,498
Hard hardwoods	2,437,036	90,136	2,239,942	106,958

PULPWOOD and TOPWOOD PORTION OF ANNUAL REMOVALS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	7,534,629	207,471	7,131,240	195,919
Pines	4,974,243	135,461	4,787,105	51,677
Other softwoods	19,932	3,695	10,125	6,111
Soft hardwoods	946,226	6,371	890,329	49,526
Hard hardwoods	1,594,229	61,943	1,443,681	88,604

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 Gum Springs (Arkadelphia), Arkansas in 2019.

MERCHANTABLE BOLE BIOMASS ANNUAL NET SURPLUS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	16,443,491	3,299,467	13,726,424	-582,401
Pines	11,463,858	1,970,030	9,751,518	-257,690
Other softwoods	309,415	72,345	282,365	-45,295
Soft hardwoods	1,576,057	273,843	1,369,585	-67,370
Hard hardwoods	3,094,161	983,249	2,322,956	-212,045

SAWLOG PORTION OF ANNUAL NET SURPLUS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	12,083,464	3,082,261	9,391,247	-390,044
Pines	8,594,418	2,081,764	6,722,950	-210,296
Other softwoods	224,509	62,848	200,844	-39,184
Soft hardwoods	1,026,557	198,347	849,499	-21,290
Hard hardwoods	2,237,981	739,302	1,617,954	-119,275

PULPWOOD and TOPWOOD PORTION OF ANNUAL NET SURPLUS IN TONS				
Species group	Total	Ownership group		
		Public	Private	Not available
Total	4,360,027	217,206	4,335,177	-192,356
Pines	2,869,440	-111,733	3,028,568	-47,394
Other softwoods	84,906	9,497	81,521	-6,111
Soft hardwoods	549,500	75,495	520,085	-46,080
Hard hardwoods	856,180	243,947	705,003	-92,770

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

Volume (MBF International 1/4) of Select White Oaks by tree grade within 70 miles of Gum Springs (Arkadelphia), AR in 2010 and 2020

Year	Total	Grade 1	Grade 2	Grade 3	Local Use (Grade 4)	No grade
2010	2,691,919	134,930	461,274	1,614,486	326,732	154,497
2020	3,365,541	508,463	681,550	1,512,660	587,438	75,430

Volume (MBF International 1/4) of Select Red Oaks by tree grade within 70 miles of Gum Springs (Arkadelphia), AR in 2009 and 2019

Year	Total	Grade 1	Grade 2	Grade 3	Local Use (Grade 4)	No grade
2010	2,051,690	463,257	435,470	887,092	168,768	97,104
2020	2,449,046	571,439	751,188	820,455	291,685	14,279

Volume (MBF International 1/4) of Other White Oaks by tree grade within 70 miles of Gum Springs (Arkadelphia), AR in 2009 and 2019

Year	Total	Grade 1	Grade 2	Grade 3	Local Use (Grade 4)	No grade
2010	978,286	35,559	186,289	550,006	200,336	6,095
2020	1,124,483	86,984	247,298	520,751	241,618	27,832

Volume (MBF International 1/4) of Other Red Oaks by tree grade within 70 miles of Gum Springs (Arkadelphia), AR in 2009 and 2019

Year	Total	Grade 1	Grade 2	Grade 3	Local Use (Grade 4)	No grade
2010	4,301,085	251,820	752,515	2,607,633	527,947	161,171
2020	4,479,856	388,328	805,780	2,162,421	941,721	181,606

Volume (MBF International 1/4) of Hard Hardwoods by tree grade within 70 miles of Gum Springs (Arkadelphia), AR in 2009 and 2019

Year	Total	Grade 1	Grade 2	Grade 3	Local Use (Grade 4)	No grade
2010	1,175,058	27,325	170,392	782,735	179,934	14,672
2020	1,187,580	128,194	216,718	618,881	190,582	33,205

Volume (MBF International 1/4) of Soft Hardwoods by tree grade within 70 miles of Gum Springs (Arkadelphia), AR in 2009 and 2019

Year	Total	Grade 1	Grade 2	Grade 3	Local Use (Grade 4)	No grade
2010	4,008,426	140,285	840,670	2,264,171	550,276	213,023
2020	4,494,080	724,968	646,377	2,203,131	723,163	196,442