Southern Forest
Nursery Management Cooperative

TECHNICAL NOTE 19-02

FOREST TREE SEEDLING PRODUCTION IN THE SOUTHERN UNITED STATES FOR THE 2018 – 2019 PLANTING SEASON

by
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INTRODUCTION

To obtain information on the current seedling production in the southern United States, the Auburn University Southern Forest Nursery Management Cooperative conducted a survey of nursery managers in the region to determine seedling production numbers for the December 2018 to March 2019 planting season.

Data was obtained through an online Qualtrics questionnaire sent in June 2019 to 58 forest-tree nurseries in 12 southern states: Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, and Virginia. The online questionnaire asked for production (not sales) for the 2018-2019 nursery season for major pine and hardwood species. We contacted all nurseries, regardless of affiliation or ownership, including those not associated with the Southern Forest Nursery Management Cooperative. The mail survey was followed up by phone and email contact until all nurseries were accounted for. Of the 58 surveys mailed, responses were received from 49 nurseries which had reportable seedling production data. Despite repeated attempts, 9 nurseries did not respond to the survey in 2019, yet 4 of those nurseries had responded in previous years' production. To not underestimate seedling production, the numbers reported from those 5 nurseries were included in the 2018-2019 anayslsis. The 53 usable data points (91% response) were the same number of nurseries from that reported in the 2017-2018 production season.

SURVEY RESULTS

Conifer Seedling Production: There was a total of 837,071,000 bareroot (Table 1) and 227,948,000 container-grown (Table 2) conifer seedlings produced during the 2018-2019 planting season, for a total conifer production of 1,065,019,000 seedlings (Table 3). This was increase of 2.4% in total conifer seedlings; that when examined by stock type, was mostly within the container seedling production (+ 5.7%, 12.4 MM) and a 1.5% increase (12.8 MM) in bareroot grown seedlings over the previous growing season (2017-2018). The overall 5.7 increase resulted in 25,300,000 more conifer seedlings than the 1,039,725,000 conifers produced last growing season. Loblolly pine was the most commonly grown species (863,275,000 in the region), accounting for 81% of all conifer production, followed by longleaf pine (94.9 MM) at 9% and slash pine (88.8 MM) at 8% (Table 3). The production of longleaf pine in 2018-2019 was similar to the 94.3 MM produced in 2017-2018. After a three-year decrease in longleaf production, from a peak at 112 MM in 2014-2015, it appears that longleaf production has leveled off just shy of 100 MM annually.

Like previous years, loblolly, longleaf and slash pine accounted for 98% of all conifers produced in 2018-2019. Sand pine was the 4th most important species in terms of production at 5.6 MM (1%) followed by shortleaf pine, which is down over 3 MM from the 8.2 MM produced last year. Most of the shortleaf pine production is in containers at 66% with 3.4 MM in containers vs 1.7 MM bareroot. The 6th most commonly produced conifer seedling was white pine, 3.6 MM (Table 3) which is up 1.1 MM from the 2.5 MM in 2017-2018. (Enebak 2018). The rest of the conifers was; Baldcypress (2.2 MM), Fraser fir (650 M) and Virginia pine (552 M) bring up the lower tier of conifer production with the "others" (pitch pine, Atlantic white cedar and pitch x loblolly) comprising 689 M of the remainder of the conifers grown in 2018-2019.

The greatest increase in seedling numbers produced was loblolly pine with 42.5 MM more seedlings produced in 2018-2019 than in the 2017-2018 growing season. This was followed by a 2.2 MM increase in longleaf pine production, and a 15.3 MM decrease in slash pine over the same time frame. Of the conifer species produced in containers, loblolly and longleaf pine were the primary species grown, 125.2 MM and 80. MM, respectively. This is the third growing season that the number of loblolly container seedlings was greater than the number of longleaf container seedlings. As in previous years the majority (86%) of longleaf seedling production was in containers with 80.8 MM grown in containers versus 13.4 MM grown as bareroot. Of the 227. MM container seedlings, loblolly and slash pine comprised 55% and 7% of the container-grown conifers, respectively. Longleaf was 36% of the 227.9 MM seedlings produced. Georgia was by far the Number 1 producer of container-grown conifers at 128.2 MM (56%) (Table 2) which was an increase of just over 40 M from 127.8 MM produced in the 2017-2018 growing season.

All states surveyed produced some level of conifer nursery stock. The amount ranged from 326,070,000 in Georgia to 2.3 MM seedlings in Oklahoma. Georgia forest-tree nurseries produced 31% of all conifer planting stock in the southern United States. In terms of total conifer production, the order was: 1. Georgia (326.0 MM), 2. South Carolina (161.0 MM), 3. Arkansas (103.4 MM), 4. Texas (89.3 MM), 5. Mississippi (84.6 MM), 6. Alabama (83.3 MM), 7. North Carolina (63.2 MM), 8. Louisiana (50.5 MM), . Florida (45.0 MM), 10. Virginia (28.2 MM), 11. Tennessee (3.5 MM) and 12. Oklahoma (2.3 MM) (Table 3). Within the conifer species, the production of seedlings in containers continues to increase. Container seedling production was estimated at perhaps 0.4 million in 1973, 3.5 million seedlings in 1980, and exceeds 227.9 MM seedlings annually today (Table 2). Currently, container-grown conifers are approximately 21% of the total seedling production, up from less than 3% in 2004 (Figure 1).

Hardwood Seedling Production: There was a total of 22,709,000 bareroot (Table 4) and 335,000 container-grown hardwood seedlings produced (Table 5); for a total hardwood seedling production of 23,044,000 seedlings in the 2018-2019 planting season (Table 6). This is a slight increase (317 M) over the 22,727,000 seedings produced in the 2017-2018 season and stops the the 4-yr decrease in hardwood production since the 2012-2013 growing season. This years' production is well below the peak of 52 MM hardwood seedlings producted in 2006-2007 and 40.0 MM produced in the 2012-2013 growing season (Figure 2). Most of the hardwood seedling production occurred in Arkansas (8.4 MM) which is down about 1 MM seedlings from last year. Georgia comes in second place with hardwood production at 4.5 MM, up from the 3.3 MM produced in 2017-2018. All other states had minimal changes in hardwood seedling production. Since seedling production data collection started in 2000, it has not been unusual for hardwood seedling production to fluctuate considerably as the markets for these forest tree species varies year to year due to demand, cost share programs and seed availability.

Of the hardwood tree species produced, *Quercus* spp. was by far the most important genera with 64% of all hardwood production (14.8 MM) (Table 6). This is followed by "others" (5.1 MM; 22%), sweetgum (758 M; 3%), yellow poplar (609 M; 3%), pecan (606 M; 3%), sycamore (413 M; 2%) green ash (318 M; 1%), flowering dogwood (269 M; 1%) and black walnut (103 M). Hardwoods were grown in all states surveyed except Lousiana and Texas with seedling production ranging from from 8.4 MM in Arkansas (37%) to 223,000 in North Carolina (Table 6). Tree species in the "other" category include species such

as black gum, maple, eastern redbud, common persimmon, hickory, sugarberry, maple, elm, birch, and cherry.

Production by Ownership Category: In this survey, a "private" nursery means private ownership that is not part of an organization or company that operates a wood processing facility; therefor, "non-industrial." A state nursery is part of a state's reforestation program and an "industrial" nursery would be a nursery that owns and/or operates a wood processing facility. The divesiture and merging of companies has seen a drastic shift from Industrial to Private seeding production. For the 2018-2019 growing season, privately run nurseries (those organizations without a wood processing facility) produced 775,563,000 (69%) followed by industrial nurseries at 228,322,000 (22%) and state-run nurseries with 84,179,000 (8%). The overall percentage increase from Industrial to Private was about 4% over the previous growing season. The ownership shift is apparent when you compare the 2018-19 growing season to the 2016-2017 growing season, (the last big change) privately run nurseries produced 562,747,000 (53%) followed by industrial nurseries at 406,943,000 (38%) and state-run nurseries at 95,238,000 seedlings (9%) (Enebak 2017).

Among the two seedling stock types (bareroot or container), private nurseries supplied 89% of container-grown conifer planting stock (203.9 MM), followed by industry (17.2 MM; 8%), and state nurseries (7.0 MM; 3%). In the 2018-19 growing season, private-run nurseries produced more bareroot hardwood seedlings (12.3 MM; 54%) over either state (10.3 MM; 46%) or industrial nurseries (0 M; 0%) (Table 7).

Georgia maintains its' dominance in the conifer seedling market with 326.0 MM seedlings grown in 2018-2019 (Table 8). This is slight decrease from the 327.8 MM grown last year and a 21.7 MM decrease from the 347.7 MM seedlings grown in 2016-2017 (Enebak 2017). Like previous years' (2008-2017) production, Arkansas gets the distinction of the largest hardwood producer in 2018-2019 with 8.4 MM hardwood seedlings grown (Table 9). The 2018-2019 production is down slightly from the 9.3 MM produced last year and 11.1 MM produced in 2016-2017. Collectively, South Carolina gets the distinction of the second most productive state in 2018-2019 when it comes to nursery seedling production with 161.0 MM conifers and 450,000 hardwood seedlings produced (Tables 8 and 9).

Seedling production for all stock types (container, bareroot) and tree type (conifer, hardwood) by forest agency (State, Private, Industry) by state is detailed in Table 10. The discontinuation of state tree improvement programs in Alabama, Louisiana, Mississippi, South Carolina and Texas has resulted in zeroes in their contribution to seedling production. Overall, Private forest-tree nurseries produced 775,557,000 (71%) of all the seedlings grown in the southern United States. This was followed by Industrial nurseries 228,322,000 (22%) and State Nurseries 84,178,000 (8%) (Table 10). Last year, private forest-tree nurseries produced 714.4 MM (67%) of all seedlings grown. This was followed by Industrial 228.2 MM (22%) nurseries and then State nurseries at 94.3 MM (9%) seedlings (Enebak 2017).
State Ranking and Changes from 2017-2018: A comparison of state-by-state ranking is provided in Table 11. For the most part, state by state production rankings remained the same with a few states switching positions. The 2.4% increase in total seedling production in the southern US from last year was not distributed evenly across the southern region. While some states had an increase in seedling production, several states had reductions from last year's growing season. These were Florida (14 MM, -22%), Oklahoma (1.1 MM; -28%), North Carolina (4.7 MM, -7%) and Virginia (2.0 MM -6%) (Table 11). Despite the changes in seedling production within an individual state, it does not necessarily indicate a large change in regional production as seedling production region-wide continues to hover just over 1 billion seedlings after 10 years of decreasing seedling production (Figure 3).

Southern Forest Nursery Management Cooperative Seedling Production: Members of the Southern Forest Nursery Management Cooperative continue to lead in bareroot seedling production. Nearly 92% of all bareroot production in the southern United States is associated with Nursery Cooperative membership; 788.4 MM seedlings (Table 12). The percentage of container-grown seedlings is not as robust with Nursery Cooperative members accounting for 67% of container production 152.1 MM. However, both

percentages are up from the previous growing season. For example, in 2017-2018, 88% of all bareroot production in the southern United States is associated with Nursery Cooperative membership at 742.6 MM seedlings and was 66% of container production at 143.5 MM; this was an increase from the 128.2 MM in the 2016-2017 growing season. (Enebak 2018).

Total Seedling Production: Collectively, the forest-tree nurseries surveyed in the southern United States produced 837,071,000 bareroot conifers; 227,948,000 container conifers; 22,709,000 bareroot hardwoods and 335,000 container hardwood seedlings during the 2018-2019 growing season. For conifers, this is significated increase (12.8 MM) from the 824,245,000 bareroot conifers, and an increase (1.4 MM) from the 215,480,000 container seedlings during the 2017-18 growing season. The total forest-tree seedlings produced during the 2018-2019 planting season was 1,088,059,000 seedlings and is the sixth year in a row above the billion-seedling mark. Changes in the production type (container / bareroot) resulted in a 2.% increase over last years production (Table 11). The overall trend of seedling production for all species and stock type in the southern United States is shown in Figure 3.

MANAGEMENT IMPLICATIONS

This seedling production data is for the 2018-2019 planting season, not what is **currently** being produced and planted this season (2019-2020) in the southern United States. Therefore, the seedling production numbers discussed in this report lag 1-year behind. Another shortcoming of this survey tool is that the number of seedlings produced reported do not necessarily translate into acres planted within each state surveyed or by land-ownership category. It is not uncommon for seedlings produced in Georgia to be shipped into Alabama or vice versa. The data is collected as production, so any information on actual seedling sales or seedlings planted by state, or land-ownership category is not available. What these numbers do provide is a good estimate of seedlings (species, planting stock, etc.) that were planted by non-industrial land-owners, forest industry, REITs or TIMOs during the 2018–2019 planting season. A simple estimate of the acres planted across the region could be made by dividing the number of seedlings produced (1,088,059,000) by 600 seedlings per acre for a minimum of 1,813,413 acres planted in 2018-2019. This would be about 6% of the state of Mississippi (31,000,000 acres) replanted annually.

ACKNOWLEDGEMENTS

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LITERATURE CITED

Enebak, S.A. 2018. Forest Seedling Production in the South for the 2017-2018 Planting Season. Technical Note 18-01. Auburn University, Southern Forest Nursery Management Cooperative 16 pp.

Enebak, S.A. 2017. Forest Seedling Production in the South for the 2016-2017 Planting Season. Technical Note 17-01. Auburn University, Southern Forest Nursery Management Cooperative 16 pp

Figure 1. Conifer seedling production (x 1000) by stock type in the southern United States; 2002-2018.

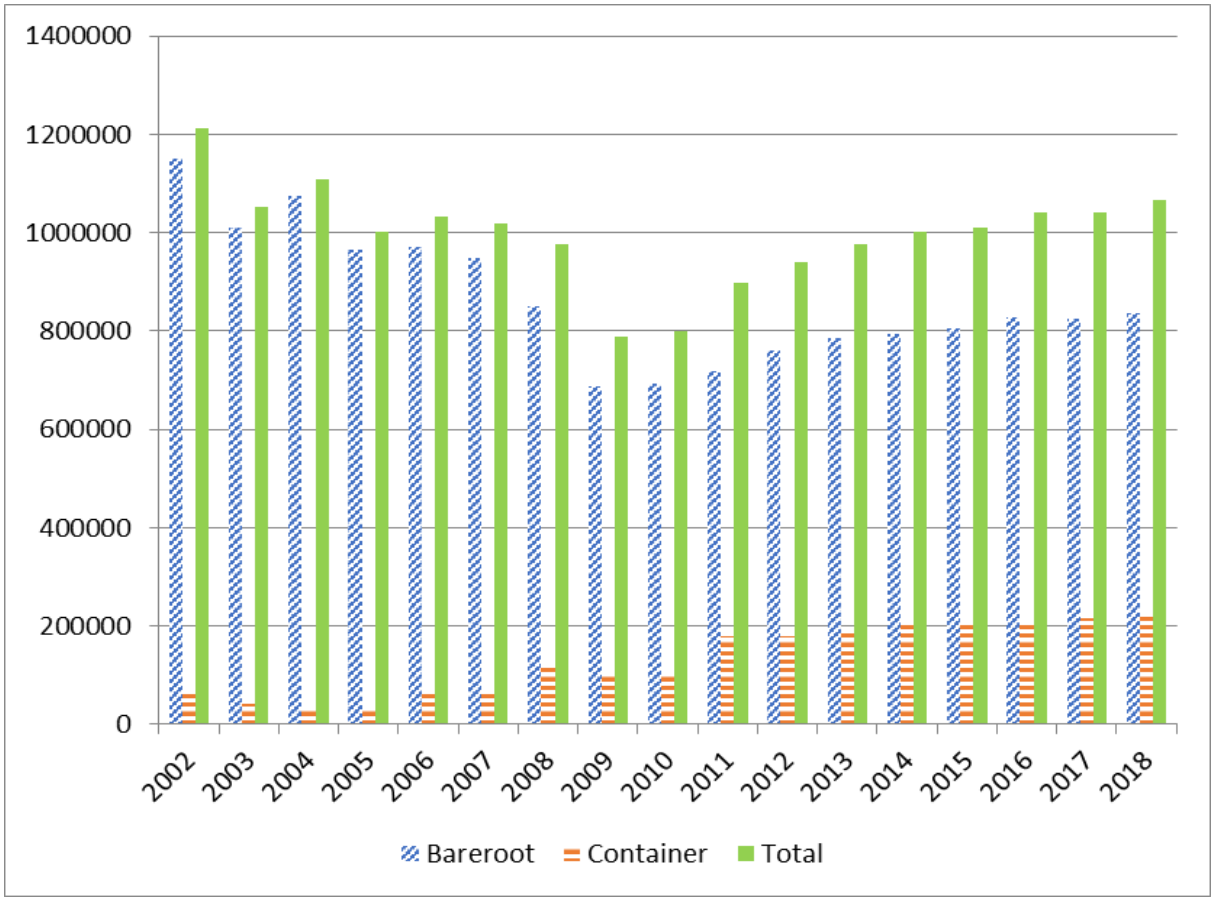

Figure 2. Hardwood seedling production (x MM) by stock type in the southern United States; 2005-2018.

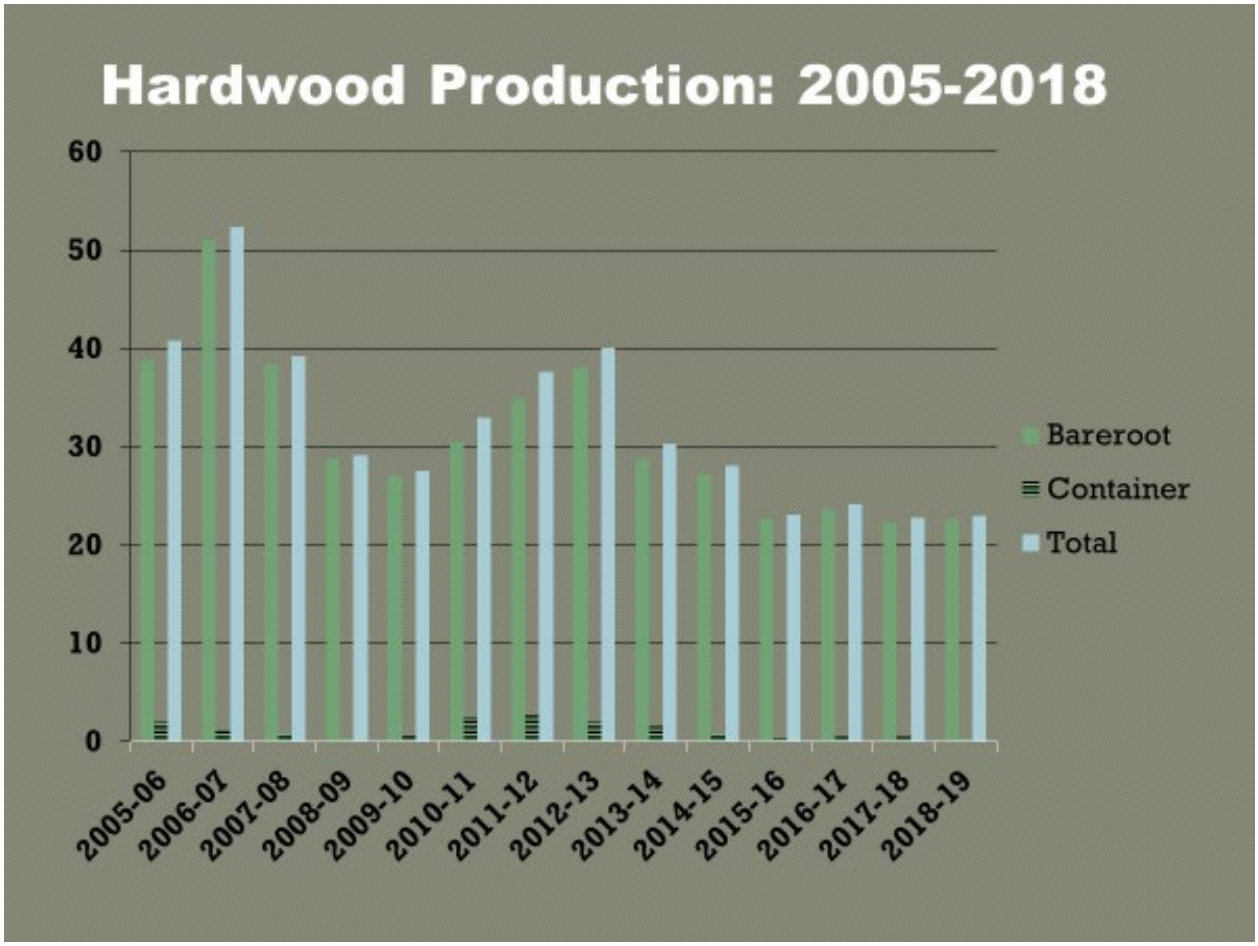

Figure 3. Seedling production (x 1000) for all species and stock types in the southern United States; 1997-2018.

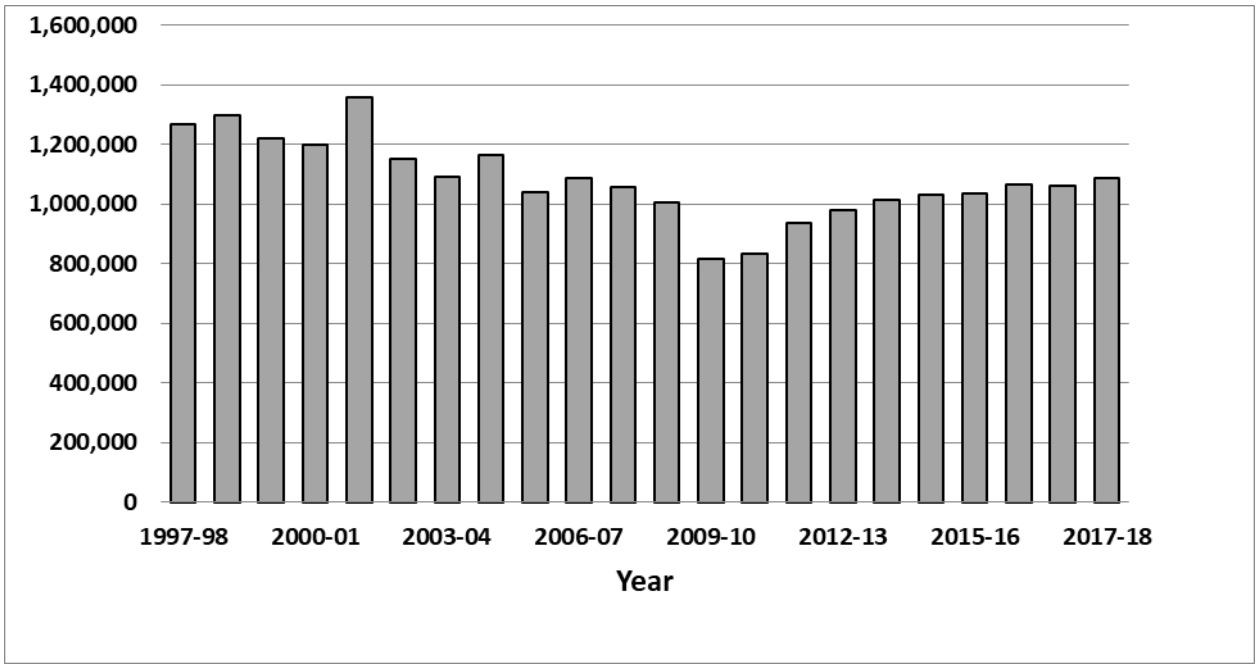

Table 1. Bareroot conifer seedling production by state for the 2018-2019 planting season across the South for various species. (X 1000)

STATE	BALDCYPRESS		FRASER FIR		LOBLOLLY		LONGLEAF		OTHERS		SAND		SHORTLEAF		SLASH		VIRGINIA		WHITE		TOTAL	
		%*		%*		%*		%*				%*		%*		%*		%*		%*		%**
AL	278	0	0	0	78,648	92	0	0	0	0	0	0	0	0	6,321	7	5	0	0	0	85,252	10
AR	1,185	1	0	0	102,006	99	0	0	100	0	0	0	52	0	0	0	0	0	0	0	103,343	12
FL	285	1	0	0	2,084	5	12,145	29	0	0	1,482	4	10	0	25,435	61	20	0	0	0	41,461	5
GA	116	0	0	0	157,905	80	1,250	1	56	0	1,800	1	303	0	35,936	18	195	0	251	0	197,812	24
LA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MS	0	0	0	0	73,460	98	0	0	0	0	0	0	0	0	1,231	2	0	0	0	0	74,691	9
NC	150	0	0	0	48,187	95	0	0	0	0	0	0	200	0	0	0	25	0	2,100	4	50,662	6
OK	5	0	0	0	2,000	89	0	0	180	8	0	0	35	2	0	0	21	1	0	0	2,241	0
SC	0	0	0	0	159,631	99	0	0	160	0	0	0	0	0	1,200	1	0	0	0	0	160,991	19
TN	120	3	0	0	2,500	71	0	0	30	1	0	0	550	16	0	0	35	1	300	8	3,535	0
TX	0	0	0	0	86,242	97	0	0	0	0	0	0	0	0	2,983	3	103	0	0	0	89,328	11
VA	20	0	0	0	25,956	94	0	0	55	0	0	0	579	2	0	0	145	1	1,000	4	27,755	3
REGION	**2,159**	**0**	**0**	**0**	**738,619**	**88**	**13,395**	**2**	**581**	**0**	**3,282**	**0**	**1,729**	**0**	**73,106**	**9**	**549**	**0**	**3,651**	**0**	**837,071**	

*Percent of state production **Percent of regional production

Table 2. Container-grown conifer seedling production by state for the 2018-2019 planting season across the South for various species. (X 1000)

STATE	BALDCYPRESS		FRASER FIR		LOBLOLLY		LONGLEAF		OTHERS		SAND		SHORTLEAF		SLASH		VIRGINIA		WHITE		TOTAL	
		%*		%*		%*		%*				%*		%*		%*		%*		%*		%**
AL	0	0	0	0	12,221	55	9,000	41	0	0	0	0	500	2	500	2	0	0	0	0	22,221	10
AR	0	0	0	0	30	24	0	0	0	0	0	0	95	76	0	0	0	0	0	0	125	0
FL	43	1	0	0	20	1	3,189	89	85	2	0	0	0	0	248	7	0	0	0	0	3,585	2
GA	15	0	0	0	53,891	42	57,050	44	0	0	2,393	2	51	0	14,858	12	0	0	0	0	128,258	56
LA	0	0	0	0	43,371	86	4,482	9	0	0	0	0	2,706	5	0	0	0	0	0	0	50,559	22
MS	0	0	0	0	10,000	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10,000	4
NC	0	0	650	5	4,717	37	7,144	57	4	0	0	0	81	1	0	0	0	0	0	0	12,596	6
OK	0	0	0	0	90	90	0	0	5	5	0	0	2	2	0	0	3	3	0	0	100	0
SC	0	0	0	0	0	0	0	0	14	100	0	0	0	0	0	0	0	0	0	0	14	0
TN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VA	0	0	0	0	316	64	0	0	0	0	0	0	0	0	174	36	0	0	0	0	490	0
REGION	**58**	**0**	**650**	**0**	**124,656**	**55**	**80,865**	**35**	**108**	**0**	**2,393**	**1**	**3,435**	**2**	**15,780**	**7**	**3**	**0**	**0**	**0**	**227,948**	

*Percent of state production **Percent of regional production

Table 3. Conifer seedling production by state for the 2018-2019 planting season across the South for various species. (X 1000)

STATE	BALDCYPRESS		FRASER FIR		LOBLOLLY		LONGLEAF		OTHERS		SAND		SHORTLEAF		SLASH		VIRGINIA		WHITE		TOTAL	
		%*		%*		%*		%*		%*		%*		%*		%*		%*		%*		%**
AL	278	0	0	0	90,869	85	9,000	8	0	0	0	0	500	0	6,821	6	5	0	0	0	107,473	10
AR	1,185	1	0	0	102,036	99	0	0	100	0	0	0	147	0	0	0	0	0	0	0	103,468	10
FL	328	1	0	0	2,104	5	15,334	34	85	0	1,482	3	10	0	25,683	57	20	0	0	0	45,046	4
GA	131	0	0	0	211,796	65	58,300	18	56	0	4,193	1	354	0	50,794	16	195	0	251	0	326,070	31
LA	0	0	0	0	43,371	86	4,482	9	0	0	0	0	2,706	5	0	0	0	0	0	0	50,559	5
MS	0	0	0	0	83,460	99	0	0	0	0	0	0	0	0	1,231	1	0	0	0	0	84,691	8
NC	150	0	650	1	52,904	84	7,144	11	4	0	0	0	281	0	0	0	25	0	2,100	3	63,258	6
OK	5	0	0	0	2,090	89	0	0	185	8	0	0	37	2	0	0	24	1	0	0	2,341	0
SC	0	0	0	0	159,631	99	0	0	174	0	0	0	0	0	1,200	1	0	0	0	0	161,005	15
TN	120	3	0	0	2,500	71	0	0	30	1	0	0	550	16	0	0	35	1	300	8	3,535	0
TX	0	0	0	0	86,242	97	0	0	0	0	0	0	0	0	2,983	3	103	0	0	0	89,328	8
VA	20	0	0	0	26,272	93	0	0	55	0	0	0	579	2	174	1	145	1	1,000	4	28,245	3
REGION	**2,217**	**0**	**650**	**0**	**863,275**	**81**	**94,260**	**9**	**689**	**0**	**5,675**	**1**	**5,164**	**0**	**88,886**	**8**	**552**	**0**	**3651**	**0**	**1,065,019**	

*Percent of state production **Percent of regional production

Table 4. Bareroot hardwood seedling production by state for the 2018-2019 planting season across the South for various species. (X 1000)

STATE	DOGWOOD		EUCALYPTUS		GREEN ASH		OAK		OTHERS		PECAN		SWEETGUM		SYCAMORE		WALNUT		YEL. POPLAR		TOTAL	
		%		%		%		%		%		%		%		%		%		%		%
AL	0	0	0	0	42	1	2,457	84	334	11	74	3	0	0	6	0	0	0	0	0	2,913	13
AR	25	0	0	0	0	0	6,669	79	1,213	14	348	4	92	1	8	0	35	0	59	1	8,449	37
FL	93	7	0	0	67	5	792	61	7	1	15	1	223	17	28	2	0	0	66	5	1,291	6
GA	41	1	0	0	77	2	2,514	55	1,431	31	47	1	234	5	101	2	18	0	98	2	4,561	20
LA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MS	0	0	0	0	100	10	100	10	500	50	0	0	100	10	100	10	0	0	100	10	1,000	4
NC	3	1	0	0	15	7	100	45	0	0	0	0	5	2	40	18	10	4	50	22	223	1
OK	9	2	0	0	0	0	120	29	210	51	23	6	0	0	30	7	18	4	0	0	410	2
SC	0	0	0	0	0	0	0	0	450	100	0	0	0	0	0	0	0	0	0	0	450	2
TN	40	2	0	0	0	0	1,454	58	635	25	90	4	80	3	40	2	0	0	180	7	2,519	11
TX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VA	52	6	0	0	10	1	435	49	274	31	0	0	0	0	50	6	22	2	50	6	893	4
REGION	**263**	**1**	**0**	**0**	**311**	**1**	**14,641**	**64**	**5,054**	**22**	**597**	**3**	**734**	**3**	**403**	**2**	**103**	**0**	**603**	**3**	**22,709**	

*Percent of state production **Percent of regional production

Table 5. Container-grown hardwood seedling production by state for the 2018-2019 planting season across the South for various species. (X 1000)

STATE	DOGWOOD		EUCALYPTUS		GREEN ASH		OAK		OTHERS		PECAN		SWEETGUM		SYCAMORE		WALNUT		YEL. POPLAR		TOTAL	
		%		%		%		%		%		%		%		%		%		%		%
AL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AR	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FL	5	3	0	0	7	4	50	30	60	36	6	4	22	13	10	6	0	0	6	4	166	50
GA	0	0	0	0	0	0	10	83	0	0	0	0	2	17	0	0	0	0	0	0	12	4
LA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MS	1	1	0	0	0	0	150	97	0	0	3	2	0	0	0	0	0	0	0	0	154	46
NC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
OK	0	0	0	0	0	0	0	0	3	100	0	0	0	0	0	0	0	0	0	0	3	1
SC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
REGION	**6**	2	**0**	0	**7**	2	**210**	63	**63**	19	**9**	3	**24**	7	**10**	3	**0**	0	**6**	2	**335**	

*Percent of state production **Percent of regional production

Table 6. Hardwood seedling production by state for the 2018-2019 planting season across the South for various species. (X 1000)

STATE	DOGWOOD		EUCALYPTUS		GREEN ASH		OAK		OTHERS		PECAN		SWEETGUM		SYCAMORE		WALNUT		YEL. POPLAR		TOTAL	
		%		%		%		%		%		%		%		%		%		%		%
AL	0	0	0	0	42	1	2,457	84	334	11	74	3	0	0	6	0	0	0	0	0	2,913	13
AR	25	0	0	0	0	0	6,669	79	1,213	14	348	4	92	1	8	0	35	0	59	1	8,449	37
FL	98	7	0	0	74	5	842	58	67	5	21	1	245	17	38	3	0	0	72	5	1,457	6
GA	41	1	0	0	77	2	2,524	55	1,431	31	47	1	236	5	101	2	18	0	98	2	4,573	20
LA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MS	1	0	0	0	100	9	250	22	500	43	3	0	100	9	100	9	0	0	100	9	1,154	5
NC	3	1	0	0	15	7	100	45	0	0	0	0	5	2	40	18	10	4	50	22	223	1
OK	9	2	0	0	0	0	120	29	213	52	23	6	0	0	30	7	18	4	0	0	413	2
SC	0	0	0	0	0	0	0	0	450	100	0	0	0	0	0	0	0	0	0	0	450	2
TN	40	2	0	0	0	0	1,454	58	635	25	90	4	80	3	40	2	0	0	180	7	2,519	11
TX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VA	52	6	0	0	10	1	435	49	274	31	0	0	0	0	50	6	22	2	50	6	893	4
REGION	**269**	**1**	**0**	**0**	**318**	**1**	**14,851**	**64**	**5,117**	**22**	**606**	**3**	**758**	**3**	**413**	**2**	**103**	**0**	**609**	**3**	**23,044**	

*Percent of state production **Percent of regional production

Table 7. Species production for the 2018-2019 planting season across the South by ownership category. (X 1000) (BR = bareroot, C= container)

TYPE	SPECIES	STATE		PRIVATE		INDUSTRY		TOTAL	TOTAL
			%*		%*		%*		%*
BR	BALDCYPRESS	1,224	57	935	43	0	0	**2,159**	0.3
	FRASER FIR	0	0	0	0	0	0	**0**	0.0
	LOBLOLLY	49,762	7	484,886	66	203,971	28	**738,619**	88.2
	LONGLEAF	2,425	18	10,970	82	0	0	**13,395**	1.6
	OTHERS	301	52	280	48	0	0	**581**	0.1
	SAND	590	18	2,692	82	0	0	**3,282**	0.4
	SHORTLEAF	1,474	85	255	15	0	0	**1,729**	0.2
	SLASH	7,335	10	58,646	80	7,125	10	**73,106**	8.7
	VIRGINIA	226	41	318	58	5	1	**549**	0.1
	WHITE	3,400	93	251	7	0	0	**3,651**	0.4
	TOTAL	66,737	8	559,233	67	211,101	25	**837,071**	76.87
C	BALDCYPRESS	0	0	58	100	0	0	**58**	0.0
	FRASER FIR	650	100	0	0	0	0	**650**	0.3
	LOBLOLLY	536	0	106,900	86	17,221	14	**124,657**	54.7
	LONGLEAF	5,225	6	75,641	94	0	0	**80,866**	35.5
	OTHERS	94	87	14	13	0	0	**108**	0.0
	SAND	0	0	2,393	100	0	0	**2,393**	1.0
	SHORTLEAF	172	5	3,263	95	0	0	**3,435**	1.5
	SLASH	402	3	15,378	97	0	0	**15,780**	6.9
	VIRGINIA	3	100	0	0	0	0	**3**	0.0
	WHITE	0	0	0	0	0	0	**0**	0.0
	TOTAL	**7,082**	**3**	**203,647**	**89**	**17,221**	**8**	**227,950**	20.95
BR	DOGWOOD	125	48	138	52	0	0	**263**	1.2
	EUCALYPTUS	0	0	0	0	0	0	**0**	0.0
	GREEN ASH	25	8	285	92	0	0	**310**	1.4
	OAK	7,210	49	7,431	51	0	0	**14,641**	64.5
	OTHERS	2,022	40	3,031	60	0	0	**5,053**	22.3
	PECAN	337	56	260	44	0	0	**597**	2.6
	SWEETGUM	96	13	638	87	0	0	**734**	3.2
	SYCAMORE	168	42	235	58	0	0	**403**	1.8
	WALNUT	85	83	18	17	0	0	**103**	0.5
	YEL. POPLAR	289	48	315	52	0	0	**604**	2.7
	TOTAL	**10,357**	**46**	**12,351**	**54**	**0**	**0**	**22,708**	2.16
C	DOGWOOD	0	0	6	100	0	0	**6**	1.8
	EUCALYPTUS	0	0	0	0	0	0	**0**	0.0
	GREEN ASH	0	0	7	100	0	0	**7**	2.1
	OAK	0	0	210	100	0	0	**210**	62.7
	OTHERS	3	5	60	95	0	0	**63**	18.8
	PECAN	0	0	9	100	0	0	**9**	2.7
	SWEETGUM	0	0	24	100	0	0	**24**	7.2
	SYCAMORE	0	0	10	100	0	0	**10**	3.0
	WALNUT	0	0	0	0	0	0	**0**	0.0
	YEL. POPLAR	0	0	6	100	0	0	**6**	1.8
	TOTAL	**3**	**1**	**332**	**99**	**0**	**0**	**335**	0.0
ALL	TOTAL BAREROOT	77,094	9	571,584	66	211,101	25	**859,779**	79
	TOTAL CONTAINER	**7,085**	**3**	**203,979**	**89**	**17,221**	**8**	**228,285**	21
	REGION	84,179	8	775,563	71	228,322	**21**	**1,088,064**	

*Percent of species production for that ownership class

Table 8. Conifer seedling production for the 2018-2019 planting season across the South by ownership category. (X 1000) Private – nurseries owned by companies or individuals that do not own wood processing facilities, Industry – nurseries owned by companies that have wood processing facilities. Percents are calculated for each stock type within a state.

	Bareroot Conifer						Container Conifer						Conifer Seedling Production						
STATE	**STATE**	**%**	**PRIVATE**	**%**	**INDUSTRY**	**%**	**STATE**	**%**	**PRIVATE**	**%**	**INDUSTRY**	**%**	**STATE**	**%**	**PRIVATE**	**%**	**INDUSTRY**	**%**	**TOTAL**
AL	0	0	48,167	45	37,085	35	0	0	15,000	14	7,221	7	0	0	63,167	59	44,306	41	**107,473**
AR	2,953	3	48,390	47	52,000	50	125	0	0	0	0	0	3,078	3	48,390	47	52,000	50	**103,468**
FL	5,150	11	36,311	81	0	0	3,038	7	547	1	0	0	8,188	18	36,858	82	0	0	**45,046**
GA	12,628	4	185,183	57	0	0	0	0	128,258	39	0	0	12,628	4	313,441	96	0	0	**326,069**
LA	0	0	0	0	0	0	0	0	50,559	100	0	0	0	0	50,559	100	0	0	**50,559**
MS	0	0	24,541	29	50,150	59	0	0	0	0	10,000	12	0	0	24,541	29	60,150	71	**84,691**
NC	12,475	20	38,187	60	0	0	3,329	5	9,267	15	0	0	15,804	25	47,454	75	0	0	**63,258**
OK	2,241	96	0	0	0	0	100	4	0	0	0	0	2,341	100	0	0	0	0	**2,341**
SC	0	0	89,124	55	71,866	45	0	0	14	0	0	0	0	0	89,138	55	71,866	45	**161,004**
TN	3,535	100	0	0	0	0	0	0	0	0	0	0	3,535	100	0	0	0	0	**3,535**
TX	0	0	89,328	100	0	0	0	0	0	0	0	0	0	0	89,328	100	0	0	**89,328**
VA	27,754	98	0	0	0	0	490	2	0	0	0	0	28,244	100	0	0	0	0	**28,244**
REGION	**66,736**	**6**	**559,231**	**53**	**211,101**	**20**	**7,082**	**1**	**203,645**	**19**	**17,221**	**2**	**73,818**	**7**	**762,876**	**72**	**228,322**	**21**	**1,065,016**

Table 9. Hardwood seedling production for the 2018-2019 planting season across the South by ownership category (X 1000). Private – nurseries owned by companies or individuals that do not own wood processing facilities, Industry – nurseries owned by companies that have wood processing facilities. Percents are calculated for each stock type within a state.

	Bareroot Hardwood						Container Hardwood						Hardwood Seedling Production						
STATE	STATE	%	PRIVATE	%	INDUSTRY	%	STATE	%	PRIVATE	%	INDUSTRY	%	STATE	%	PRIVATE	%	INDUSTRY	%	TOTAL
AL	0	0	2,912	100	0	0	0	0	0	0	0	0	0	0	2,912	100	0	0	**2,912**
AR	6,114	72	2,335	28	0	0	0	0	0	0	0	0	6,114	72	2,335	28	0	0	**8,449**
FL	0	0	1,290	89	0	0	0	0	165	11	0	0	0	0	1,455	100	0	0	**1,455**
GA	198	4	4,363	95	0	0	0	0	12	0	0	0	198	4	4,375	96	0	0	**4,573**
LA	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
MS	0	0	1,000	87	0	0	0	0	154	13	0	0	0	0	1,154	100	0	0	**1,154**
NC	223	100	0	0	0	0	0	0	0	0	0	0	223	100	0	0	0	0	**223**
OK	410	99	0	0	0	0	3	1	0	0	0	0	413	100	0	0	0	0	**413**
SC	0	0	450	100	0	0	0	0	0	0	0	0	0	0	450	100	0	0	**450**
TN	2,519	100	0	0	0	0	0	0	0	0	0	0	2,519	100	0	0	0	0	**2,519**
TX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
VA	893	100	0	0	0	0	0	0	0	0	0	0	893	100	0	0	0	0	**893**
REGION	**10,357**	**45**	**12,350**	**54**	**0**	**0**	**3**	**0**	**331**	**1**	**0**	**0**	**10,360**	**45**	**12,681**	**55**	**0**	**0**	**23,041**

Table 10. Seedling production for the 2018-2019 planting season across the South by ownership category. (X 1000) Private – nurseries owned by companies or individuals that do not own wood processing facilities, Industry – nurseries owned by companies that have wood processing facilities.

	TOTAL SEEDLING PRODUCTION							
STATE	**STATE**	**%***	**PRIVATE**	**%***	**INDUSTRY**	**%***	**TOTAL**	**%****
AL	0	0	66,079	60	44,306	40	110,385	10
AR	9,192	8	50,725	45	52,000	46	111,917	10
FL	8,188	18	38,313	82	0	0	46,501	4
GA	12,826	4	317,816	96	0	0	330,642	30
LA	0	0	50,559	100	0	0	50,559	5
MS	0	0	25,695	30	60,150	70	85,845	8
NC	16,027	25	47,454	75	0	0	63,481	6
OK	2,754	100	0	0	0	0	2,754	0
SC	0	0	89,588	55	71,866	45	161,454	15
TN	6,054	100	0	0	0	0	6,054	1
TX	0	0	89,328	100	0	0	89,328	8
VA	29,137	100	0	0	0	0	29,137	3
REGION	**84,178**	**8**	**775,557**	**71**	**228,322**	**21**	**1,088,057**	

*Percent of state production **Percent of regional production

Table 11. Change in seedling production from the 2016 to the 2019 nursery season.

STATE	2018-2019 Production (thousands)	RANK	% Change from Previous Yr
AL	110,385	4	18
AR	111,917	3	7
FL	46,501	9	-22
GA	330,642	1	0
LA	50,559	8	8
MS	85,845	6	-4
NC	63,481	7	-7
OK	2,754	12	-28
SC	161,454	2	14
TN	6,054	11	11
TX	89,328	5	2
VA	29,137	10	-6
Total	**1,088,057**		2.4

STATE	2017-2018 Production (thousands)	RANK	% Change from Previous Yr
AL	93,323	4	-12
AR	104,535	3	6
FL	60,185	8	2
GA	331,099	1	-6
LA	46,599	9	38
MS	89,199	5	3
NC	68,258	7	-8
OK	3,847	12	-21
SC	142,146	2	9
TN	5,451	11	-7
TX	87,498	6	12
VA	31,140	10	-12
Total	**1,063,280**		-0.2

STATE	2016 - 2017 Production (thousands)	RANK	% Change from Previous Yr
AL	106,116	3	-9
AR	98,277	4	-1
FL	59,056	8	-2
GA	352,661	1	5
LA	33,707	10	42
MS	86,455	5	3
NC	73,852	7	12
OK	4,845	12	269
SC	130,289	2	-6
TN	5,887	11	-21
TX	78,420	6	9
VA	35,369	9	14
Total	**1,064,934**		2.9

Table 12. Auburn University's Southern Forest Nursery Management Cooperative representation in regional seedling production. (X 1000)

Source of Seedling Production	Total Production (thousands)	Percent *of source*	Percent *of total*
Bareroot – Nursery Coop Members	788,475	92	72
Bareroot – Non Coop Members	71,301	8	7
	859,776		
Container – Nursery Coop Members	152,137	67	14
Container - Non-Coop Members	76,146	33	7
	228,283		
Total – Nursery Coop Members	940,612		86
Total - Non-Coop Members	147,447		14
	1,088,059		