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## Project Report No. 39, Observed Average Characteristics of Unthinned Loblolly and Slash Pine Plantations in East Texas

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# OBSERVED AVERAGE CHARACTERISTICS OF UNTHINNED LOBLOLLY AND SLASH PINE PLANTATIONS IN EAST TEXAS

by

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From

the

East Texas Pine Plantation Research Project  
College of Forestry  
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Nacogdoches, TX 75962

October ... 1995

In September, 1994, the ETPPRP<sup>1</sup> published Report 31 (Observed growth rates of loblolly and slash pine plantations in East Texas). The purpose of that report was to tabulate four observed average annual growth rates:

- Quadratic mean diameter,
- Stand height,
- Basal area per acre and
- Cubic feet per acre

of unthinned East Texas loblolly and slash pine plantations.

As is often the case, the information in Report 31 triggered additional questions about East Texas pine plantations.

In an attempt to augment Report 31 and provide more comprehensive information about the observed nature of unthinned East Texas pine plantations, the ETPPRP data set was re-analyzed. Observed field data from repeated measurements of ETPPRP permanent plots from 1982-1995 were analyzed. Report 31 did not include 1995 plantation measurements.

The 16 observed unthinned plantation characteristics summarized in this report are:

- Average height of the ten tallest trees in the plantation - feet.
  - Average annual height growth - feet per year.
- Average quadratic mean diameter - inches.
  - Average diameter growth - inches per year.
- Average distance from ground to first live branch - feet.
- Average site index (Base age = 25 yrs) - feet.
- Average number of trees per acre.
- Average basal area per acre - square feet.
  - Average basal area growth - square feet per year.
- Average percentage of stems that are infected with fusiform rust.
- Average percentage of stems that are markedly crooked.
- Average number of non-planted trees per acre.
- Average cubic feet wood and bark in total stem per acre (CFWBTS).
  - Average CFWBTS growth per year.
- Average cubic feet wood and bark to a 4" dob per acre (CFWB4").
  - Average CFWB4" growth per year.

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<sup>1</sup> The support of the participating forest industries -- Champion International Corp., International Paper Company, Louisiana-Pacific Corp., Resource Management Services and Temple-Inland Forest Products Corp. -- is appreciated.

The observed average characteristics are tabulated by various combinations of:

• Age classes.....	1-2 yrs	3-4 yrs
	5-6 yrs	7-8 yrs
	9-10 yrs	11-12 yrs
	13-14 yrs	15-16 yrs
	17-18 yrs	19-27 yrs
• Site index classes.....	≤50	(55' or less)
	60	(56-65')
	70	(66-75')
	80	(76-85')
	≥90	(86' or more)
• Trees per acre classes...	≤300	(350 or less)
	400	(351-450)
	500	(451-550)
	≥600	(551 or more)

As a result, 60 tables were developed:

- Tables 1-30 characterize loblolly pine plantations.
- Tables 31-60 characterize slash pine plantations.

Values in Tables 1 and 31 are grouped by age classes.

Values in Tables 2-6 and 32-36 are organized by age classes plus either site index classes or trees per acre classes.

Values in Tables 7-10 and 37-40 are arranged by age classes plus either site index classes or trees per acre classes.

Values in Tables 11-30 and 41-60 are depicted by age classes and site index classes and trees per acre classes.



**TABLE 1**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES ONLY**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	5	9	18	25	34	41	47	51	56	63
Height growth/yr - ft	2.3	2.7	3.3	3.4	3.6	3.6	3.5	3.3	3.2	3.0
Dbh - in.	0.0	0.6	2.2	3.6	4.9	5.6	6.4	7.0	7.1	7.7
Dbh growth/yr - in.	0.0	0.2	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4
Height to live crown - ft	0	0	2	4	9	14	18	21	25	32
Site Index (IA=25 yrs) - ft	82	67	70	68	70	70	69	68	68	69
Trees per Acre	562	513	495	483	471	493	431	407	446	421
Basal Area per acre - sqft	0	2	16	37	62	85	97	102	118	133
BA growth/Acre/yr - sqft	0	0.5	2.9	5.0	6.5	7.3	7.3	6.6	6.8	6.4
Fusiform rust stem %	0	2	6	9	9	9	11	11	10	9
Crooked stem %	7	52	68	62	63	61	65	67	67	73
Non-planted T/A ≥1"	0	53	128	237	379	433	510	497	420	412
CFWBTS/Acre	0	9	134	414	889	1475	1931	2200	2749	3502
CFWBTS growth/Acre/yr	0	2	24	55	92	126	144	142	158	168
CFWB4"/Acre	0	0	18	180	587	1112	1592	1864	2353	3105
CFWB4" growth/Acre/yr	0	0	3	24	61	96	119	120	135	149
Number of Observations	50	150	160	196	224	200	207	120	90	121

**TABLE 2**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS ≤50**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	3	6	10	19	23	29	31	36	40	43
Height growth/yr - ft	1.4	1.8	2.0	2.5	2.4	2.5	2.3	2.4	2.3	2.2
Dbh - in.	0.0	0.2	0.8	2.6	3.2	4.3	4.7	5.4	6.1	6.0
Dbh growth/yr - in.	0.0	0.0	0.2	0.3	0.3	0.4	0.4	0.4	0.3	0.3
Height to live crown - ft	0	0	0	1	4	7	9	13	15	17
Trees per Acre	516	473	410	384	395	397	330	398	392	395
Basal Area per acre - sqft	0	0	2	15	23	39	40	60	69	70
BA growth/Acre/yr - sqft	0	0.0	0.3	1.9	2.4	3.5	3.0	4.0	4.0	3.6
Fusiform rust stem %	0	0	3	6	8	12	10	8	5	10
Crooked stem %	6	37	62	74	83	61	65	72	64	73
Non-planted T/A ≥1"	-	0	77	239	257	272	556	751	563	775
CFWBTS/Acre	0	1	8	111	216	457	517	876	1117	1202
CFWBTS growth/Acre/yr	0	0	1	14	23	40	39	58	64	61
CFWB4"/Acre	0	0	0	13	66	263	339	625	867	923
CFWB4" growth/Acre/yr	0	0	0	2	7	23	25	41	49	47
Number of Observations	12	43	31	39	22	24	20	14	7	7

**TABLE 3**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 60**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	9	16	22	30	36	41	46	49	57
Height growth/yr - ft	2.0	2.5	2.8	3.0	3.1	3.1	3.1	3.0	2.9	2.7
Dbh - in.	0.0	0.6	2.0	3.2	4.5	5.2	6.2	6.5	6.7	7.2
Dbh growth/yr - in.	0.0	0.2	0.3	0.4	0.5	0.5	0.5	0.4	0.4	0.3
Height to live crown - ft	0	0	1	3	6	11	14	17	21	29
Trees per Acre	582	477	469	449	441	509	408	428	433	436
Basal Area per acre - sqft	0	1	10	25	47	72	82	91	100	120
BA growth/Acre/yr - sqft	0.0	0.3	1.6	3.4	4.8	6.3	6.0	6.0	5.8	5.7
Fusiform rust stem %	0	3	6	7	10	10	11	12	12	12
Crooked stem %	0	56	77	60	59	50	59	62	71	69
Non-planted T/A ≥1"	-	117	148	213	355	403	482	525	420	507
CFWBTS/Acre	0	5	62	224	560	1046	1387	1707	2006	2815
CFWBTS growth/Acre/yr	0	1	11	30	58	91	103	112	116	132
CFWB4"/Acre	0	0	0	45	299	704	1095	1373	1653	2424
CFWB4" growth/Acre/yr	0	0	0	6	31	61	81	90	96	114
Number of Observations	14	33	15	42	50	40	49	32	20	30

**TABLE 4**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 70**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	10	18	26	35	42	47	53	56	64
Height growth/yr - ft	-	2.9	3.3	3.5	3.6	3.6	3.5	3.4	3.2	3.0
Dbh - in.	-	0.7	2.3	3.8	5.1	5.9	6.6	7.3	7.0	7.9
Dbh growth/yr - in.	-	0.2	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4
Height to live crown - ft	-	0	2	4	9	14	18	22	26	33
Trees per Acre	-	529	496	498	468	500	444	394	483	419
Basal Area per acre - sqft	-	2	14	39	64	89	102	108	126	139
BA growth/Acre/yr - sqft	-	0.4	2.5	5.2	6.7	7.6	7.6	6.9	7.2	6.5
Fusiform rust stem %	-	4	5	10	8	7	10	12	7	8
Crooked stem %	-	59	65	57	61	63	69	67	64	75
Non-planted T/A ≥1"	-	15	98	214	373	456	382	436	392	295
CFWBTS/Acre	-	8	101	406	878	1505	1933	2352	2894	3674
CFWBTS growth/Acre/yr	-	2	18	54	91	129	144	151	166	172
CFWB4"/Acre	-	0	3	150	572	1134	1589	2022	2454	3275
CFWB4" growth/Acre/yr	-	0	1	20	59	97	119	129	141	154
Number of Observations	-	26	51	60	87	74	77	50	43	51



**TABLE 5**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 80**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	5	12	21	30	39	47	53	61	66	71
Height growth/yr - ft	2.5	3.2	3.8	4.0	4.1	4.1	4.0	3.9	3.8	3.6
Dbh - in.	0.0	1.0	2.8	4.2	5.5	6.0	6.8	7.7	8.0	8.3
Dbh growth/yr - in.	0.0	0.3	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.4
Height to live crown - ft	0	0	2	7	12	18	23	27	31	39
Trees per Acre	581	547	523	566	504	511	486	402	410	434
Basal Area per acre - sqft	0	3	22	56	80	99	122	127	135	159
BA growth/Acre/yr - sqft	0.0	0.8	3.9	7.4	8.4	8.7	9.1	8.2	7.8	8.0
Fusiform rust stem %	0	3	7	9	9	7	11	11	13	8
Crooked stem %	21	57	68	62	61	63	67	72	67	75
Non-planted T/A $\geq 1$ "	0	29	70	251	416	520	665	453	405	433
CFWBTS/Acre	0	17	187	685	1260	1893	2646	3151	3660	4750
CFWBTS growth/Acre/yr	0	4	32	90	132	165	198	202	211	238
CFWB4"/Acre	0	0	17	341	903	1473	2214	2780	3258	4303
CFWB4" growth/Acre/yr	0	0	3	44	94	129	166	179	188	216
Number of Observations	9	27	35	36	44	42	45	18	16	17

**TABLE 6**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS  $\geq 90$**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	5	12	24	34	44	54	63	70	73	87
Height growth/yr - ft	3.2	3.7	4.4	4.6	4.6	4.6	4.7	4.6	4.2	4.5
Dbh - in.	0.0	0.1	3.3	4.9	5.7	6.6	7.6	7.5	8.4	8.9
Dbh growth/yr - in.	0.0	0.3	0.6	0.7	0.6	0.6	0.6	0.5	0.5	0.5
Height to live crown - ft	0	0	3	8	13	22	28	31	38	41
Trees per Acre	569	593	564	559	561	515	415	446	360	323
Basal Area per acre - sqft	0	4	32	71	94	118	128	130	137	133
BA growth/Acre/yr - sqft	0	1.2	6.0	9.8	9.9	10.2	9.5	8.5	7.9	6.9
Fusiform rust stem %	0	3	10	14	14	13	18	12	17	6
Crooked stem %	4	61	74	63	65	69	62	65	71	59
Non-planted T/A $\geq 1$ "	-	78	253	338	475	402	689	380	525	832
CFWBTS/Acre	0	23	305	970	1642	2569	3340	3798	4124	4626
CFWBTS growth/Acre/yr	0	7	56	132	171	222	246	247	236	241
CFWB4"/Acre	0	0	73	606	1214	2110	2942	3299	3750	4262
CFWB4" growth/Acre/yr	0	0	13	82	126	182	217	214	215	222
Number of Observations	15	21	28	19	21	20	16	6	4	4

**TABLE 7**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN TREES PER ACRE CLASS ≤300**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	2	8	16	23	32	38	44	51	55	62
Height growth/yr - ft	1.2	2.4	2.9	3.0	3.2	3.3	3.3	3.3	3.1	3.0
Dbh - in.	0.0	0.5	2.1	3.5	5.1	6.1	6.7	7.7	8.1	8.3
Dbh growth/yr - in.	0.0	0.1	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4
Height to live crown - ft	0	0	1	3	7	10	14	20	23	28
Site Index (IA=25 yrs) - ft	40	59	62	61	63	65	66	67	67	69
Basal Area per acre - sqft	0	1	8	20	41	59	68	85	93	105
BA growth/Acre/yr - sqft	0	0.1	1.4	2.7	4.2	5.2	5.1	5.4	5.3	5.2
Fusiform rust stem %	0	2	7	9	13	10	13	13	12	11
Crooked stem %	0	40	67	68	74	55	66	64	64	70
Non-planted T/A ≥1"	-	204	106	360	404	374	568	567	471	581
CFWBTS/Acre	0	3	61	206	571	993	1317	1849	2189	2783
CFWBTS growth/Acre/yr	0	1	11	27	59	86	99	119	124	137
CFWB4"/Acre	0	0	8	93	421	818	1130	1648	1983	2545
CFWB4" growth/Acre/yr	0	0	1	12	43	71	85	106	112	125
Number of Observations	2	25	29	38	49	35	59	47	21	28

**TABLE 8**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN TREES PER ACRE CLASS 400**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	9	17	24	34	41	47	51	60	65
Height growth/yr - ft	2.2	2.5	3.1	3.2	3.6	3.6	3.5	3.3	3.4	3.1
Dbh - in.	0.0	0.7	2.1	3.5	5.2	6.0	6.6	7.0	7.5	8.0
Dbh growth/yr - in.	0.0	0.2	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4
Height to live crown - ft	0	0	1	3	9	13	18	22	28	34
Site Index (IA=25 yrs) - ft	86	63	66	65	69	70	70	67	73	71
Basal Area per acre - sqft	0	2	13	28	61	79	99	110	127	139
BA growth/Acre/yr - sqft	0	0.4	2.3	3.8	6.4	6.9	7.4	7.0	7.3	6.6
Fusiform rust stem %	0	2	5	10	10	10	12	11	8	9
Crooked stem %	2	50	66	58	62	64	63	72	70	74
Non-planted T/A ≥1"	-	88	58	275	317	388	482	458	525	303
CFWBTS/Acre	0	8	113	287	881	1398	1966	2316	3172	3774
CFWBTS growth/Acre/yr	0	2	20	39	91	121	147	148	182	178
CFWB4"/Acre	0	0	36	114	634	1116	1654	1987	2796	3404
CFWB4" growth/Acre/yr	0	0	6	15	65	97	123	127	161	161
Number of Observations	8	30	31	48	54	46	58	31	26	41



**TABLE 9**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN TREES PER ACRE CLASS 500**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	5	10	18	25	34	43	47	56	54	63
Height growth/yr - ft	2.6	2.7	3.3	3.4	3.6	3.7	3.5	3.6	3.1	3.0
Dbh - in.	0.0	0.6	2.2	3.6	4.8	5.7	6.2	6.6	6.7	7.3
Dbh growth/yr - in.	0.0	0.2	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.3
Height to live crown - ft	0	0	2	4	9	16	19	25	25	34
Site Index (IA=25 yrs) - ft	90	67	71	67	70	73	70	74	67	69
Basal Area per acre - sqft	0	2	16	39	65	90	106	121	122	142
BA growth/Acre/yr - sqft	0	0.4	2.9	5.1	6.8	7.8	7.9	7.9	7.1	6.7
Fusiform rust stem %	0	3	7	7	7	8	9	8	9	9
Crooked stem %	4	60	72	61	63	64	67	66	62	74
Non-planted T/A $\geq 1"$	-	52	175	162	491	473	418	479	320	412
CFWBTS/Acre	0	7	141	419	901	1610	2111	2836	2732	3700
CFWBTS growth/Acre/yr	0	2	25	55	94	139	157	183	158	175
CFWB4"/Acre	0	0	23	187	593	1242	1722	2378	2290	3216
CFWB4" growth/Acre/yr	0	0	4	24	62	107	128	154	133	152
Number of Observations	16	33	41	51	53	47	49	21	23	40

**TABLE 10**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN TREES PER ACRE CLASS  $\geq 600$**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	10	20	28	36	42	49	47	54	59
Height growth/yr - ft	2.2	2.8	3.6	3.8	3.8	3.6	3.6	3.1	3.1	2.9
Dbh - in.	0.0	0.6	2.4	3.8	4.6	5.2	6.0	5.6	6.1	6.6
Dbh growth/yr - in.	0.0	0.2	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.3
Height to live crown - ft	0	0	2	6	10	16	22	20	25	32
Site Index (IA=25 yrs) - ft	78	72	77	76	74	71	72	63	66	66
Basal Area per acre - sqft	0	2	22	55	76	97	127	109	127	143
BA growth/Acre/yr - sqft	0	0.7	3.9	7.4	8.0	8.4	9.3	7.2	7.4	7.2
Fusiform rust stem %	0	2	5	9	8	8	10	11	10	8
Crooked stem %	10	54	66	64	57	58	65	68	70	72
Non-planted T/A $\geq 1"$	0	15	133	199	317	464	564	424	346	394
CFWBTS/Acre	0	13	176	648	1114	1672	2547	2179	2809	3589
CFWBTS growth/Acre/yr	0	3	32	86	117	144	187	144	163	180
CFWB4"/Acre	0	0	9	283	663	1168	2014	1651	2239	3018
CFWB4" growth/Acre/yr	0	0	2	37	69	101	148	109	130	151
Number of Observations	24	62	59	59	68	72	41	21	20	12

TABLE 11  
 LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
 BY AGE CLASSES WITHIN SITE INDEX CLASS ≤50 AND TREES PER ACRE CLASS ≤300

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	2	6	10	18	22	27	30	36	42	43
Height growth/yr - ft	1.2	1.7	2.0	2.4	2.2	2.4	2.3	2.3	2.4	2.2
Dbh - in.	0.0	0.3	0.9	2.7	3.2	4.7	4.9	5.8	7.1	6.9
Dbh growth/yr - in.	0.0	0.1	0.2	0.4	0.3	0.4	0.4	0.4	0.4	0.4
Height to live crown - ft	0	0	0	1	3	5	8	12	15	15
Basal Area per acre - sqft	0	0	1	10	16	29	31	51	71	68
BA growth/Acre/yr - sqft	0	0.0	0.3	1.3	1.7	2.6	2.3	3.4	4.0	3.5
Fusiform rust stem %	0	0	5	8	9	9	8	7	5	12
Crooked stem %	0	31	72	74	84	64	67	80	56	71
Non-planted T/A ≥1"	-	-	53	379	234	234	678	888	919	919
CFWBTS/Acre	0	0	7	75	159	328	394	761	1227	1203
CFWBTS growth/Acre/yr	0	0	1	10	16	29	29	50	69	62
CFWB4"/Acre	0	0	0	10	70	219	271	582	1061	1031
CFWB4" growth/Acre/yr	0	0	0	1	7	19	20	38	60	53
Number of Observations	2	10	9	16	10	10	12	7	4	4

TABLE 12  
 LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
 BY AGE CLASSES WITHIN SITE INDEX CLASS ≤50 AND TREES PER ACRE CLASS 400

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	3	6	11	19	24	29	33	39	-	-
Height growth/yr - ft	1.5	1.8	2.1	2.4	2.6	2.6	2.6	2.6	-	-
Dbh - in.	0.0	0.1	0.9	2.4	3.5	4.3	4.9	6.0	-	-
Dbh growth/yr - in.	0.0	0.0	0.2	0.3	0.4	0.4	0.4	0.4	-	-
Height to live crown - ft	0	0	1	2	5	6	11	14	-	-
Basal Area per acre - sqft	0	0	2	14	27	40	52	79	-	-
BA growth/Acre/yr - sqft	0	0.0	0.4	1.9	2.8	3.6	4.0	5.3	-	-
Fusiform rust stem %	0	0	3	5	5	17	9	12	-	-
Crooked stem %	0	28	66	70	82	61	72	58	-	-
Non-planted T/A ≥1"	-	0	102	197	298	333	467	788	-	-
CFWBTS/Acre	0	0	10	110	244	452	674	1278	-	-
CFWBTS growth/Acre/yr	0	0	2	14	26	40	52	85	-	-
CFWB4"/Acre	0	0	0	15	66	274	449	1008	-	-
CFWB4" growth/Acre/yr	0	0	0	2	7	24	35	67	-	-
Number of Observations	3	11	10	10	5	5	3	2	-	-



**TABLE 13**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS ≤50 AND TREES PER ACRE CLASS 500**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	3	7	10	19	23	28	31	36	42	47
Height growth/yr - ft	1.5	1.9	1.9	2.5	2.3	2.5	2.3	2.4	2.5	2.4
Dbh - in.	0.0	0.3	0.6	2.6	3.0	3.7	4.1	5.3	5.5	5.6
Dbh growth/yr - in.	0.0	0.1	0.1	0.3	0.3	0.3	0.3	0.4	0.3	0.3
Height to live crown - ft	0	0	0	2	4	7	8	14	16	25
Basal Area per acre - sqft	0	0	1	22	27	40	48	78	80	93
BA growth/Acre/yr - sqft	0	0.1	0.2	2.8	2.7	3.6	3.6	5.2	4.7	4.7
Fusiform rust stem %	0	0	1	3	8	14	15	4	12	19
Crooked stem %	0	49	49	79	81	66	68	42	51	63
Non-planted T/A ≥1"	-	0	29	142	241	438	372	963	263	1313
CFWBTS/Acre	0	1	5	168	265	453	614	1102	1378	1746
CFWBTS growth/Acre/yr	0	0	1	21	27	41	46	74	81	87
CFWB4"/Acre	0	0	0	19	74	241	358	788	1035	1291
CFWB4" growth/Acre/yr	0	0	0	2	7	22	27	53	61	65
Number of Observations	3	8	8	10	4	4	4	2	1	1

**TABLE 14**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS ≤50 AND TREES PER ACRE CLASS ≥600**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	2	6	10	18	24	31	38	33	36	40
Height growth/yr - ft	1.2	1.8	1.9	2.4	2.7	2.7	2.7	2.2	2.1	2.0
Dbh - in.	0.0	0.2	0.7	2.2	3.0	4.1	4.9	4.1	4.2	4.4
Dbh growth/yr - in.	0.0	0.0	0.1	0.3	0.3	0.4	0.4	0.3	0.2	0.2
Height to live crown - ft	0	0	0	0	5	10	11	12	14	16
Basal Area per acre - sqft	0	0	2	17	32	58	78	56	60	64
BA growth/Acre/yr - sqft	0	0.1	0.5	2.1	3.5	4.9	5.6	3.7	3.5	3.2
Fusiform rust stem %	0	0	0	7	7	13	15	11	2	6
Crooked stem %	18	42	57	77	83	51	17	84	86	82
Non-planted T/A ≥1"	-	0	117	88	263	44	88	263	0	219
CFWBTS/Acre	0	1	10	122	296	723	1129	724	768	928
CFWBTS growth/Acre/yr	0	0	2	16	33	61	81	48	45	46
CFWB4"/Acre	0	0	0	8	39	358	747	361	394	524
CFWB4" growth/Acre/yr	0	0	0	1	4	30	53	24	23	26
Number of Observations	4	14	4	3	3	5	1	3	2	2



**TABLE 15**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 60 AND TREES PER ACRE CLASS ≤300**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	9	17	24	30	35	41	46	51	55
Height growth/yr - ft	-	2.5	2.8	3.1	3.1	3.1	3.0	3.0	2.9	2.7
Dbh - in.	-	0.6	2.6	3.5	4.8	5.9	6.9	7.6	8.0	7.8
Dbh growth/yr - in.	-	0.2	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4
Height to live crown - ft	-	0	0	3	6	9	11	15	18	23
Basal Area per acre - sqft	-	1	8	19	31	54	65	68	87	93
BA growth/Acre/yr - sqft	-	0.2	1.4	2.5	3.1	4.9	4.8	4.4	5.0	4.6
Fusiform rust stem %	-	4	13	6	15	7	17	15	9	8
Crooked stem %	-	35	81	70	70	52	66	46	77	76
Non-planted T/A ≥1"	-	409	197	339	350	508	490	506	496	656
CFWBTS/Acre	-	3	58	187	377	774	1095	1312	1828	2138
CFWBTS growth/Acre/yr	-	1	10	24	38	69	81	85	104	105
CFWB4"/Acre	-	0	2	55	231	594	924	1153	1635	1912
CFWB4" growth/Acre/yr	-	0	0	7	23	53	69	74	93	94
Number of Observations	-	7	4	8	12	6	15	10	6	6

**TABLE 16**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 60 AND TREES PER ACRE CLASS 400**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	10	15	22	30	35	42	47	49	59
Height growth/yr - ft	2.0	2.5	2.8	3.0	3.1	3.1	3.1	3.0	2.8	2.8
Dbh - in.	0.0	0.6	1.6	3.2	4.8	5.4	6.1	6.7	6.7	7.4
Dbh growth/yr - in.	0.0	0.2	0.3	0.4	0.5	0.5	0.5	0.4	0.4	0.3
Height to live crown - ft	0	0	1	3	7	9	14	18	22	32
Basal Area per acre - sqft	0	1	6	23	50	66	84	102	99	118
BA growth/Acre/yr - sqft	0	0.2	1.1	3.1	5.2	5.8	6.2	6.6	5.7	5.6
Fusiform rust stem %	0	2	3	7	7	11	9	7	5	12
Crooked stem %	0	73	86	45	62	58	53	74	70	64
Non-planted T/A ≥1"	-	262	22	132	216	429	484	525	88	402
CFWBTS/Acre	0	4	37	201	616	934	1426	1971	2008	2883
CFWBTS growth/Acre/yr	0	1	6	27	63	82	105	127	116	135
CFWB4"/Acre	0	0	0	38	386	674	1137	1656	1676	2527
CFWB4" growth/Acre/yr	0	0	0	5	39	59	84	107	96	118
Number of Observations	2	6	4	14	16	12	17	8	3	10

**TABLE 17**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 60 AND TREES PER ACRE CLASS 500**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	10	16	22	30	35	42	45	49	58
Height growth/yr - ft	2.0	2.5	2.9	3.0	3.2	3.1	3.1	3.0	2.9	2.6
Dbh - in.	0.0	0.7	1.7	3.2	4.4	4.8	5.6	5.9	6.1	6.8
Dbh growth/yr - in.	0.0	0.2	0.3	0.4	0.5	0.4	0.4	0.4	0.4	0.3
Height to live crown - ft	0	0	2	2	7	10	16	19	22	31
Basal Area per acre - sqft	0	1	8	28	50	69	87	102	102	128
BA growth/Acre/yr - sqft	0	0.4	1.4	3.8	5.2	6.2	6.5	6.8	6.0	5.9
Fusiform rust stem %	0	4	0	7	8	4	8	10	14	13
Crooked stem %	1	69	84	64	52	61	64	62	68	72
Non-planted T/A ≥1"	-	0	525	105	563	394	368	350	325	509
CFWBTS/Acre	0	6	54	249	615	991	1473	1829	2047	2964
CFWBTS growth/Acre/yr	0	2	9	33	64	89	109	122	120	136
CFWB4"/Acre	0	0	0	48	328	648	1102	1417	1619	2493
CFWB4" growth/Acre/yr	0	0	0	6	34	59	82	94	95	114
Number of Observations	3	9	2	13	9	4	10	5	7	11

**TABLE 18**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 60 AND TREES PER ACRE CLASS ≥600**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	9	17	22	29	37	42	45	48	56
Height growth/yr - ft	2.0	2.5	2.9	3.1	3.1	3.1	3.1	3.0	2.8	2.8
Dbh - in.	0.0	0.5	1.9	2.9	3.9	4.9	5.6	5.5	6.0	6.6
Dbh growth/yr - in.	0.0	0.1	0.3	0.4	0.4	0.4	0.4	0.4	0.4	0.3
Height to live crown - ft	0	0	2	4	6	13	17	19	22	31
Basal Area per acre - sqft	0	1	14	30	54	84	104	101	114	148
BA growth/Acre/yr - sqft	0	0.3	2.4	4.1	5.8	7.1	7.6	6.7	6.7	7.3
Fusiform rust stem %	0	4	3	6	9	11	11	14	19	16
Crooked stem %	0	49	62	70	51	42	50	71	66	62
Non-planted T/A ≥1"	-	0	0	306	399	321	625	625	722	554
CFWBTS/Acre	0	5	89	264	623	1223	1797	1846	2199	3396
CFWBTS growth/Acre/yr	0	1	15	36	66	104	132	123	129	167
CFWB4"/Acre	0	0	0	45	234	774	1348	1341	1724	2849
CFWB4" growth/Acre/yr	0	0	0	6	25	66	99	89	101	104
Number of Observations	9	11	5	7	13	18	7	9	4	3

**TABLE 19**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 70 AND TREES PER ACRE CLASS ≤300**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	10	17	27	35	42	46	53	56	63
Height growth/yr - ft	-	2.9	3.2	3.5	3.6	3.6	3.5	3.4	3.1	3.0
Dbh - in.	-	0.8	2.5	4.2	5.9	6.8	7.2	8.1	8.1	8.6
Dbh growth/yr - in.	-	0.2	0.5	0.6	0.6	0.6	0.5	0.5	0.5	0.4
Height to live crown - ft	-	0	2	4	8	12	14	21	24	31
Basal Area per acre - sqft	-	1	9	29	50	73	74	93	94	114
BA growth/Acre/yr - sqft	-	0.2	1.7	3.8	5.0	6.3	5.6	5.9	5.3	5.4
Fusiform rust stem %	-	1	4	12	14	12	11	12	9	12
Crooked stem %	-	52	63	57	69	50	71	66	58	71
Non-planted T/A ≥1"	-	0	88	416	516	331	443	598	245	425
CFWBTS/Acre	-	6	66	312	717	1265	1403	2071	2190	2991
CFWBTS growth/Acre/yr	-	1	12	41	73	109	106	132	123	142
CFWB4"/Acre	-	0	7	162	553	1074	1209	1865	1968	2741
CFWB4" growth/Acre/yr	-	0	1	21	56	92	91	118	111	130
Number of Observations	0	5	11	10	20	12	18	21	5	21

**TABLE 20**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 70 AND TREES PER ACRE CLASS 400**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	10	18	25	35	41	46	53	56	65
Height growth/yr - ft	-	2.8	3.2	3.5	3.6	3.6	3.5	3.3	3.2	3.0
Dbh - in.	-	0.8	2.4	3.7	5.4	6.1	6.7	7.1	7.3	8.0
Dbh growth/yr - in.	-	0.2	0.4	0.5	0.6	0.5	0.5	0.5	0.4	0.4
Height to live crown - ft	-	0	1	4	8	13	18	22	26	34
Basal Area per acre - sqft	-	2	13	31	63	80	100	112	120	141
BA growth/Acre/yr - sqft	-	0.4	2.3	4.3	6.5	6.9	7.6	7.1	6.9	6.5
Fusiform rust stem %	-	10	5	13	8	7	11	14	6	9
Crooked stem %	-	84	57	58	56	66	67	72	66	78
Non-planted T/A ≥1"	-	0	22	210	294	328	370	306	591	195
CFWBTS/Acre	-	6	105	327	868	1405	1895	2402	2775	3751
CFWBTS growth/Acre/yr	-	2	18	45	89	123	143	151	159	173
CFWB4"/Acre	-	0	9	126	619	1120	1597	2073	2417	3378
CFWB4" growth/Acre/yr	-	0	1	17	64	98	121	131	139	155
Number of Observations	-	2	6	17	16	16	23	17	13	13



TABLE 21

LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS 70 AND TREES PER ACRE CLASS 500

plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	11	18	26	34	41	46	53	56	65
Height growth/yr - ft	-	2.9	3.3	3.4	3.6	3.5	3.5	3.4	3.2	3.0
Dbh - in.	-	0.9	2.2	3.9	5.0	5.8	6.4	6.7	7.0	7.5
Dbh growth/yr - in.	-	0.2	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4
Height to live crown - ft	-	0	1	4	8	14	18	24	27	34
Basal Area per acre - sqft	-	2	14	41	67	91	114	121	134	149
BA growth/Acre/yr - sqft	-	0.6	2.4	5.4	7.1	7.8	8.5	7.8	7.7	7.0
Fusiform rust stem %	-	6	5	7	7	8	9	6	6	6
Crooked stem %	-	72	80	52	62	66	70	72	59	74
Non-planted T/A $\geq 1$ "	-	2	131	204	384	511	216	438	338	291
CFWBTS/Acre	-	9	103	416	915	1491	2133	2628	3097	3946
CFWBTS growth/Acre/yr	-	2	18	55	96	128	159	169	178	185
CFWB4"/Acre	-	0	1	165	595	1135	1747	2191	2647	3471
CFWB4" growth/Acre/yr	-	0	0	21	62	97	130	141	152	162
Number of Observations	0	8	16	14	28	20	21	4	13	22

TABLE 22

LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS 70 AND TREES PER ACRE CLASS  $\geq 600$

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	10	18	27	34	42	47	51	56	63
Height growth/yr - ft	-	2.8	3.3	3.6	3.6	3.6	3.5	3.4	3.3	3.1
Dbh - in.	-	0.6	2.1	3.6	4.5	5.3	5.9	6.0	6.3	6.9
Dbh growth/yr - in.	-	0.2	0.4	0.5	0.5	0.4	0.4	0.4	0.4	0.3
Height to live crown - ft	-	0	2	5	10	16	21	23	27	36
Basal Area per acre - sqft	-	2	17	49	73	100	122	132	136	157
BA growth/Acre/yr - sqft	-	0.5	3.0	6.6	7.7	8.5	8.9	8.8	7.9	7.9
Fusiform rust stem %	-	2	4	8	6	5	9	10	8	7
Crooked stem %	-	49	56	60	56	64	67	58	71	75
Non-planted T/A $\geq 1$ "	-	29	93	129	275	525	514	328	306	385
CFWBTS/Acre	-	9	120	519	981	1689	2345	2848	3098	4079
CFWBTS growth/Acre/yr	-	2	21	69	103	143	171	190	179	204
CFWB4"/Acre	-	0	1	155	528	1169	1814	2244	2489	3456
CFWB4" growth/Acre/yr	-	0	0	20	55	99	132	150	143	173
Number of Observations	-	11	18	19	23	26	15	8	12	5

**TABLE 23**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 80 AND TREES PER ACRE CLASS ≤300**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	12	21	29	37	46	53	61	67	73
Height growth/yr - ft	-	3.2	3.8	3.9	4.0	4.1	4.1	4.0	3.8	3.8
Dbh - in.	-	0.9	3.1	4.5	6.0	6.6	7.5	8.2	9.0	9.7
Dbh growth/yr - in.	-	0.2	0.6	0.6	0.7	0.6	0.6	0.5	0.5	0.5
Height to live crown - ft	-	0	2	6	10	15	20	27	31	40
Basal Area per acre - sqft	-	2	16	35	64	76	94	113	115	145
BA growth/Acre/yr - sqft	-	0.4	2.9	4.7	7.0	6.8	7.2	7.3	6.6	7.6
Fusiform rust stem %	-	2	6	11	12	13	16	16	22	17
Crooked stem %	-	82	50	68	80	46	66	68	63	82
Non-planted T/A ≥1"	-	0	132	204	248	1400	728	313	403	350
CFWBTS/Acre	-	8	141	403	958	1400	2076	2828	3214	4546
CFWBTS growth/Acre/yr	-	2	25	54	104	125	158	184	183	239
CFWB4"/Acre	-	0	28	246	759	1157	1828	2560	2974	4279
CFWB4" growth/Acre/yr	-	0	5	32	82	105	140	167	169	225
Number of Observations	-	2	4	3	6	5	10	8	5	1

**TABLE 24**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 80 AND TREES PER ACRE CLASS 400**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	5	12	19	30	39	48	52	60	66	72
Height growth/yr - ft	2.5	3.2	3.7	3.9	4.1	4.1	4.0	3.8	3.8	3.6
Dbh - in.	0.0	1.1	2.7	4.1	5.9	6.7	7.2	7.5	7.9	8.7
Dbh growth/yr - in.	0.0	0.3	0.5	0.5	0.6	0.6	0.6	0.5	0.5	0.4
Height to live crown - ft	0	0	1	6	12	18	22	27	31	39
Basal Area per acre - sqft	0	3	16	37	75	98	114	130	140	159
BA growth/Acre/yr - sqft	0	0.8	3.2	4.8	7.8	8.4	8.7	8.4	8.1	8.0
Fusiform rust stem %	0	3	7	10	12	8	9	7	9	6
Crooked stem %	14	54	62	62	61	69	60	74	74	76
Non-planted T/A ≥1"	-	44	117	263	333	492	750	766	525	457
CFWBTS/Acre	0	16	124	440	1198	1942	2439	3160	3851	4818
CFWBTS growth/Acre/yr	0	4	24	57	125	165	186	204	221	240
CFWB4"/Acre	0	0	17	185	914	1621	2096	2772	3446	4445
CFWB4" growth/Acre/yr	0	0	3	23	95	95	137	160	179	222
Number of Observations	1	10	7	3	12	8	7	4	7	9

TABLE 25

LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS 80 AND TREES PER ACRE CLASS 500

plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	5	12	21	29	38	47	53	60	63	70
Height growth/yr - ft	2.5	3.2	3.7	4.0	4.1	4.1	4.0	3.8	3.7	3.5
Dbh - in.	0.0	1.0	2.8	4.2	5.4	6.0	6.7	7.2	7.1	7.5
Dbh growth/yr - in.	0.0	0.3	0.5	0.6	0.6	0.5	0.5	0.5	0.4	0.4
Height to live crown - ft	0	0	2	6	12	18	23	27	29	38
Basal Area per acre - sqft	0	3	22	48	80	98	119	140	136	153
BA growth/Acre/yr - sqft	0	0.8	3.7	6.4	8.5	8.6	9.0	8.9	8.0	7.6
Fusiform rust stem %	0	1	15	8	6	4	6	8	12	13
Crooked stem %	7	80	76	53	65	64	67	74	70	73
Non-planted T/A $\geq 1"$	-	0	13	250	805	420	604	438	219	438
CFWBTS/Acre	0	15	187	564	1223	1873	2643	3451	3429	4444
CFWBTS growth/Acre/yr	0	4	32	76	129	164	199	218	202	220
CFWB4"/Acre	0	0	18	283	892	1472	2209	2985	2954	3903
CFWB4" growth/Acre/yr	0	0	3	37	94	128	167	189	174	193
Number of Observations	3	2	7	9	10	12	11	5	2	5

TABLE 26

LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS 80 AND TREES PER ACRE CLASS  $\geq 600$

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	5	11	22	31	39	47	54	63	64	71
Height growth/yr - ft	2.5	3.2	3.8	4.0	4.1	4.2	4.0	3.9	3.8	3.6
Dbh - in.	0.0	0.9	2.7	4.2	5.0	5.6	6.4	7.0	6.7	7.5
Dbh growth/yr - in.	0.0	0.2	0.5	0.6	0.5	0.5	0.5	0.4	0.4	0.4
Height to live crown - ft	0	0	3	7	12	19	25	32	34	39
Basal Area per acre - sqft	0	4	26	66	91	107	142	160	168	182
BA growth/Acre/yr - sqft	0	0.9	4.5	8.6	9.4	9.5	10.5	10.0	9.9	9.3
Fusiform rust stem %	0	3	5	9	7	7	12	3	6	2
Crooked stem %	31	52	72	65	52	63	71	75	52	70
Non-planted T/A $\geq 1"$	0	29	77	258	269	542	628	263	176	350
CFWBTS/Acre	0	19	224	812	1441	2030	3068	4190	4335	5316
CFWBTS growth/Acre/yr	0	5	38	106	149	179	226	262	255	272
CFWB4"/Acre	0	0	13	402	957	1491	2493	3554	3618	4674
CFWB4" growth/Acre/yr	0	0	2	52	99	131	184	222	213	239
Number of Observations	5	13	17	21	16	17	17	1	2	2



**TABLE 27**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS ≥90 AND TREES PER ACRE CLASS ≤300**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-19	19-27
Height - ft	-	11	12	32	45	56	64	66	74	91
Height growth/yr - ft	-	3.7	4.2	4.6	4.5	4.7	4.8	4.4	4.1	4.7
Dbh - in.	-	0.9	3.4	5.6	7.2	7.6	8.0	9.2	9.0	9.4
Dbh growth/yr - in.	-	0.3	0.7	0.8	0.7	0.6	0.6	0.6	0.5	0.5
Height to live crown - ft	-	0	0	7	14	18	22	20	35	42
Basal Area per acre - sqft	-	1	20	59	97	100	104	86	101	127
BA growth/Acre/yr - sqft	-	0.3	4.0	8.4	9.7	8.4	7.9	5.7	5.6	6.6
Fusiform rust stem %	-	16	20	10	14	12	9	26	29	8
Crooked stem %	-	33	89	42	70	79	48	65	50	45
Non-planted T/A ≥1"	-	-	88	-	700	350	700	88	0	788
CFWBTS/Acre	-	6	175	789	1798	2320	2642	2352	3086	4624
CFWBTS growth/Acre/yr	-	2	35	113	180	193	201	157	171	240
CFWB4"/Acre	-	0	23	591	1560	2054	2383	2198	2869	4330
CFWB4" growth/Acre/yr	-	0	5	84	156	171	181	147	159	225
Number of Observations	-	1	1	1	1	2	4	1	1	3

**TABLE 28**  
**LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS ≥90 AND TREES PER ACRE CLASS 400**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	15	27	32	44	55	63	-	72	-
Height growth/yr - ft	3.5	3.8	4.5	4.5	4.6	4.8	4.6	-	4.2	-
Dbh - in.	0.0	1.7	4.3	5.3	6.6	7.1	7.5	-	8.2	-
Dbh growth/yr - in.	0.0	0.4	0.7	0.8	0.7	0.6	0.5	-	0.5	-
Height to live crown - ft	0	0	4	6	12	20	28	-	39	-
Basal Area per acre - sqft	0	6	40	58	92	114	130	-	149	-
BA growth/Acre/yr - sqft	0	1.5	6.6	8.2	9.5	10.0	9.4	-	8.6	-
Fusiform rust stem %	0	1	11	22	26	18	23	-	13	-
Crooked stem %	0	33	70	69	62	65	73	-	78	-
Non-planted T/A ≥1"	-	-	22	897	630	328	558	-	700	-
CFWBTS/Acre	0	38	438	750	1646	2564	3388	-	4469	-
CFWBTS growth/Acre/yr	0	10	73	107	171	225	245	-	258	-
CFWB4"/Acre	0	0	235	525	1372	2202	2979	-	4044	-
CFWB4" growth/Acre/yr	0	0	39	75	143	193	216	-	233	-
Number of Observations	2	1	4	4	5	5	8	-	3	-

TABLE 29

LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS  $\geq 90$  AND TREES PER ACRE CLASS 500

plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	6	11	25	35	44	54	66	71	-	75
Height growth/yr - ft	3.4	3.6	4.5	4.7	4.7	4.6	4.8	4.6	-	3.9
Dbh - in.	0.0	0.7	3.5	5.2	6.0	6.5	7.6	7.2	-	7.5
Dbh growth/yr - in.	0.0	0.2	0.6	0.7	0.6	0.6	0.6	0.5	-	0.4
Height to live crown - ft	0	0	4	10	14	24	34	33	-	39
Basal Area per acre - sqft	0	2	34	77	93	115	152	139	-	152
BA growth/Acre/yr - sqft	0	0.6	6.2	10.0	9.7	9.9	11.2	9.1	-	8.0
Fusiform rust stem %	0	0	12	15	14	15	20	9	-	1
Crooked stem %	7	40	73	62	88	59	48	65	-	99
Non-planted T/A $\geq 1$ "	-	613	361	29	569	525	1167	438	-	963
CFWBTS/Acre	0	11	333	1109	1661	2512	4125	4087	-	4633
CFWBTS growth/Acre/yr	0	3	60	145	173	214	304	265	-	244
CFWB4"/Acre	0	0	98	771	1302	2069	3642	3519	-	4057
CFWB4" growth/Acre/yr	0	0	18	100	135	176	268	228	-	214
Number of Observations	7	6	8	5	2	7	3	5	-	1

TABLE 30

LOBLOLLY PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS  $\geq 90$  AND TREES PER ACRE CLASS  $\geq 600$

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	12	22	34	44	53	60	-	-	-
Height growth/yr - ft	2.8	3.8	4.3	4.7	4.6	4.6	4.6	-	-	-
Dbh - in.	0.0	1.1	2.9	4.5	5.1	5.9	6.5	-	-	-
Dbh growth/yr - in.	0.0	0.3	0.6	0.6	0.5	0.5	0.5	-	-	-
Height to live crown - ft	0	1	2	8	14	22	30	-	-	-
Basal Area per acre - sqft	0	5	30	76	95	129	139	-	-	-
BA growth/Acre/yr - sqft	0	1.5	5.8	10.5	10.0	11.3	10.7	-	-	-
Fusiform rust stem %	0	3	8	11	9	6	1	-	-	-
Crooked stem %	2	75	75	62	63	80	71	-	-	-
Non-planted T/A $\geq 1$ "	-	11	269	150	384	365	263	-	-	-
CFWBTS/Acre	0	30	263	1011	1626	2723	3397	-	-	-
CFWBTS growth/Acre/yr	0	8	50	138	170	238	261	-	-	-
CFWB4"/Acre	0	0	20	552	1114	2100	2783	-	-	-
CFWB4" growth/Acre/yr	0	0	4	75	116	184	214	-	-	-
Number of Observations	6	13	15	9	13	6	1	-	-	-

**TABLE 31**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES ONLY**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-19	19-25
Height - ft	5	10	18	26	33	40	47	52	57	66
Height growth/yr - ft	3.0	3.0	3.2	3.4	3.5	3.5	3.4	3.4	3.3	3.2
Dbh - in.	0.2	1.0	2.4	3.6	4.6	5.5	6.4	7.1	7.3	8.5
Dbh growth/yr - in.	0.1	0.3	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4
Height to live crown - ft	0	0	2	5	8	14	19	22	25	31
Site Index (IA=25 yrs) - ft	85	74	73	75	75	75	75	75	74	75
Trees per Acre	543	504	500	420	410	389	312	299	321	239
Basal Area per acre - sqft	1	4	18	32	48	64	69	78	90	91
BA growth/Acre/yr - sqft	0.3	1.0	3.1	4.2	5.1	5.5	5.1	5.1	5.1	4.3
Fusiform rust stem %	2	12	29	39	41	38	45	46	52	48
Crooked stem %	4	27	47	42	51	49	51	51	55	55
Non-planted T/A ≥1"	-	0	95	272	486	531	611	965	696	605
CFWBTS/Acre	1	24	158	396	715	1170	1502	1867	2324	2774
CFWBTS growth/Acre/yr	0	7	28	52	76	101	110	122	132	130
CFWB4"/Acre	0	0	11	150	443	880	1255	1627	2055	2577
CFWB4" growth/Acre/yr	0	0	2	19	47	76	92	106	117	121
Number of Observations	30	52	86	94	86	110	74	52	40	34

**TABLE 32**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS ≤50 .**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	7	8	14	15	23	31	36	40	40
Height growth/yr - ft	1.8	1.8	1.4	1.7	1.7	2.0	2.3	2.2	2.4	2.1
Dbh - in.	0.0	0.2	0.6	1.9	1.8	2.9	4.6	5.6	5.7	6.7
Dbh growth/yr - in.	0.0	0.1	0.1	0.2	0.2	0.3	0.3	0.4	0.3	0.4
Height to live crown - ft	0	0	1	0	2	4	8	10	14	14
Trees per Acre	494	405	451	284	256	294	154	126	155	116
Basal Area per acre - sqft	0	0	2	5	4	13	18	22	28	28
BA growth/Acre/yr - sqft	0	0.1	0.3	0.6	0.5	1.2	1.4	1.4	1.6	1.5
Fusiform rust stem %	0	2	9	35	26	26	40	48	26	49
Crooked stem %	0	11	26	39	69	61	71	42	53	35
Non-planted T/A ≥1"	-	0	0	0	0	125	175	132	569	88
CFWBTS/Acre	0	2	9	36	32	131	251	356	470	508
CFWBTS growth/Acre/yr	0	0	2	4	4	11	19	22	28	27
CFWB4"/Ac-e	0	0	0	4	0	24	158	278	367	438
CFWB4" growth/Acre/yr	0	0	0	0	0	2	12	17	22	23
Number of Observations	3	13	8	5	3	8	4	2	2	



**TABLE 33**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 60**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	10	16	20	27	34	38	45	48	57
Height growth/yr - ft	2.0	2.6	2.8	2.8	2.9	2.9	2.7	2.8	2.7	2.6
Dbh - in.	0.0	1.0	1.9	2.9	3.4	5.0	4.6	6.2	6.6	7.5
Dbh growth/yr - in.	0.0	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.3
Height to live crown - ft	0	0	2	2	7	9	10	18	21	25
Trees per Acre	592	377	455	367	570	438	478	321	308	318
Basal Area per acre - sqft	0	2	10	17	40	53	56	68	73	90
BA growth/Acre/yr - sqft	0.0	0.5	1.6	2.3	4.3	4.5	4.0	4.2	4.2	4.2
Fusiform rust stem %	0	14	17	42	24	46	38	44	61	63
Crooked stem %	0	38	46	20	48	45	32	21	65	61
Non-planted T/A ≥1"	-	0	105	219	225	328	-	875	1313	175
CFWBTS/Acre	0	10	73	158	486	802	908	1325	1579	2268
CFWBTS growth/Acre/yr	0	3	12	21	51	68	65	83	91	106
CFWB4"/Acre	0	0	0	11	165	473	538	1091	1341	2009
CFWB4" growth/Acre/yr	0	0	0	1	17	40	38	68	77	94
Number of Observations	1	7	11	14	7	8	2	3	3	3

**TABLE 34**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 70**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	9	18	23	31	38	44	49	55	63
Height growth/yr - ft	2.4	2.8	3.1	3.2	3.3	3.3	3.2	3.2	3.1	3.2
Dbh - in.	0.0	0.6	2.4	3.3	4.5	5.4	6.5	6.8	7.3	8.5
Dbh growth/yr - in.	0.0	0.2	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.4
Height to live crown - ft	0	0	1	4	7	12	16	21	24	29
Trees per Acre	513	658	502	376	410	394	260	345	297	239
Basal Area per acre - sqft	0	2	16	22	45	62	57	78	84	88
BA growth/Acre/yr - sqft	0	0.5	2.8	3.0	4.8	5.3	4.2	5.1	4.7	4.1
Fusiform rust stem %	0	8	26	37	40	41	49	45	55	51
Crooked stem %	1	33	42	42	50	52	49	47	52	40
Non-planted T/A ≥1"	-	0	67	292	438	474	499	765	695	772
CFWBTS/Acre	0	8	134	232	602	1045	1124	1780	2058	2490
CFWBTS growth/Acre/yr	0	2	23	31	64	89	82	117	115	116
CFWB4"/Acre	0	0	2	41	338	755	933	1491	1823	2299
CFWB4" growth/Acre/yr	0	0	0	5	36	64	68	98	102	107
Number of Observations	8	6	25	23	32	39	27	19	16	11

**TABLE 35**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 80**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	6	12	19	28	35	43	49	55	61	71
Height growth/yr - ft	3.0	3.3	3.5	3.7	3.7	3.7	3.6	3.6	3.5	3.4
Dbh - in.	0.2	1.2	2.6	4.0	4.9	5.8	6.5	7.4	7.6	8.7
Dbh growth/yr - in.	0.1	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.4	0.4
Height to live crown - ft	0	0	2	6	10	16	21	24	27	34
Trees per Acre	498	464	513	470	399	362	338	265	378	241
Basal Area per acre - sqft	0	4	19	41	53	67	77	79	106	96
BA growth/Acre/yr - sqft	0.0	1.0	3.4	5.3	5.6	5.8	5.7	5.1	6.1	4.5
Fusiform rust stem %	6	15	33	39	46	38	41	47	50	47
Crooked stem %	5	30	52	48	52	48	49	55	59	63
Non-planted T/A $\geq 1"$	-	0	115	257	528	814	740	1278	602	719
CFWBTS/Acre	1	21	162	516	830	1263	1717	1956	2879	3051
CFWBTS growth/Acre/yr	0	6	29	68	87	110	126	127	166	144
CFWB4"/Acre	0	0	7	200	544	985	1439	1750	2542	2847
CFWB4" growth/Acre/yr	0	0	1	26	56	85	106	114	146	134
Number of Observations	6	8	20	35	32	34	33	25	17	14

**TABLE 36**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS  $\geq 90$**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	6	14	22	32	40	47	56	62	69	81
Height growth/yr - ft	3.7	4.0	4.0	4.2	4.2	4.2	4.0	4.0	3.8	3.8
Dbh - in.	0.3	1.5	3.1	4.4	5.4	6.1	7.0	7.5	8.7	9.3
Dbh growth/yr - in.	0.2	0.4	0.6	0.6	0.6	0.5	0.5	0.5	0.5	0.4
Height to live crown - ft	0	1	3	7	10	18	25	29	29	41
Trees per Acre	594	592	527	461	383	443	415	382	222	238
Basal Area per acre - sqft	1	7	28	47	59	86	107	116	92	112
BA growth/Acre/yr - sqft	0.7	2.1	5.0	6.3	6.4	7.6	7.7	7.6	5.1	5.2
Fusiform rust stem %	3	19	40	43	46	37	51	45	57	30
Crooked stem %	7	32	56	49	47	41	64	74	40	72
Non-planted T/A $\geq 1"$	-	0	122	333	841	414	613	204	700	328
CFWBTS/Acre	2	52	280	671	1019	1788	2666	3216	2703	4099
CFWBTS growth/Acre/yr	1	14	50	88	109	158	191	210	150	189
CFWB4"/Acre	0	0	33	348	730	1422	2314	2892	2536	3895
CFWB4" growth/Acre/yr	0	0	6	45	78	125	166	189	141	179
Number of Observations	12	18	22	17	12	21	8	3	2	4

TABLE 37

**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN TREES PER ACRE CLASS ≤300**

plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-25
Height - ft	3	10	16	23	32	38	46	52	57	67
Height growth/yr - ft	1.5	2.5	2.7	3.2	3.4	3.3	3.4	3.4	3.2	3.2
Dbh - in.	0.0	0.8	2.0	3.4	4.7	5.5	6.6	7.2	7.6	8.7
Dbh growth/yr - in.	0.0	0.2	0.3	0.5	0.5	0.5	0.5	0.5	0.4	0.4
Height to live crown - ft	0	0	1	3	7	12	17	22	25	32
Site Index (IA=25 yrs) - ft	41	59	61	69	75	72	74	75	73	76
Basal Area per acre - sqft	0	1	8	18	34	44	57	69	82	88
BA growth/Acre/yr - sqft	0.0	0.4	1.4	2.4	3.6	3.8	4.2	4.4	4.7	4.2
Fusiform rust stem %	0	12	30	48	47	47	50	47	54	49
Crooked stem %	0	29	37	36	54	54	54	49	56	56
Non-planted T/A ≥1"	-	0	117	359	517	505	689	1062	727	592
CFWBTS/Acre	0	9	74	203	507	785	1200	1663	2108	2732
CFWBTS growth/Acre/yr	0	2	13	27	54	68	88	107	120	129
CFWB4"/Acre	0	0	9	67	344	614	1029	1478	1905	2560
CFWB4" growth/Acre/yr	0	0	2	9	36	53	75	95	108	120
Number of Observations	1	12	14	37	37	48	44	40	33	30

TABLE 38

**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN TREES PER ACRE CLASS 400**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-25
Height - ft	5	12	18	27	32	42	49	53	59	65
Height growth/yr - ft	2.8	3.2	3.2	3.6	3.5	3.7	3.6	3.4	3.4	2.9
Dbh - in.	0.2	1.4	2.5	3.9	4.6	5.7	6.2	6.8	7.0	7.2
Dbh growth/yr - in.	0.1	0.4	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.3
Height to live crown - ft	0	0	2	5	7	14	21	24	22	32
Site Index (IA=25 yrs) - ft	80	77	73	78	75	79	78	78	76	70
Basal Area per acre - sqft	1	5	15	36	45	70	83	101	108	114
BA growth/Acre/yr - sqft	0.7	1.4	2.6	4.7	4.8	6.2	6.1	6.7	6.1	5.1
Fusiform rust stem %	6	16	26	40	50	33	37	45	40	43
Crooked stem %	5	30	48	60	53	49	46	60	62	42
Non-planted T/A ≥1"	-	0	175	228	294	596	481	827	306	817
CFWBTS/Acre	1	36	128	470	633	1294	1856	2388	2910	3352
CFWBTS growth/Acre/yr	0	9	22	61	68	114	135	159	164	149
CFWB4"/Acre	0	0	10	219	381	995	1537	2068	2564	2972
CFWB4" growth/Acre/yr	0	0	2	29	41	87	112	137	144	132
Number of Observations	9	8	19	21	15	31	23	9	2	3



**TABLE 39**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN TREES PER ACRE CLASS 500**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-25
Height - ft	6	9	18	27	33	40	44	58	56	53
Height growth/yr - ft	3.2	2.7	3.4	3.5	3.6	3.5	3.3	3.9	3.2	2.6
Dbh - in.	0.2	0.8	2.4	3.5	4.4	5.1	5.6	7.0	6.3	6.3
Dbh growth/yr - in.	0.1	0.2	0.4	0.5	0.5	0.4	0.4	0.5	0.4	0.3
Height to live crown - ft	0	0	2	5	9	16	18	28	21	21
Site Index (IA=25 yrs) - ft	91	67	78	77	78	77	72	86	74	62
Basal Area per acre - sqft	0	3	16	36	55	74	88	124	111	98
BA growth/Acre/yr - sqft	0.1	0.8	3.0	4.8	5.9	6.5	6.5	8.3	6.3	4.9
Fusiform rust stem %	0	8	31	37	43	29	35	48	55	49
Crooked stem %	5	9	52	46	52	42	39	92	52	61
Non-planted T/A ≥1"	-	0	93	247	536	671	496	175	219	350
CFWBTS/Acre	1	21	146	470	837	1412	1761	3223	2904	2325
CFWBTS growth/Acre/yr	0	6	27	61	90	123	131	215	164	116
CFWB4"/Acre	0	0	9	183	504	1044	1348	2834	2444	1921
CFWB4" growth/Acre/yr	0	0	1	23	54	91	101	189	138	96
Number of Observations	5	12	20	15	16	16	4	1	2	1

**TABLE 40**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN TREES PER ACRE CLASS ≥600**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-25
Height - ft	5	11	19	28	33	42	52	48	60	-
Height growth/yr - ft	3.1	3.4	3.4	3.7	3.5	3.6	3.8	3.2	3.4	-
Dbh - in.	0.1	1.0	2.5	3.7	4.6	5.2	6.0	5.2	6.0	-
Dbh growth/yr - in.	0.1	0.3	0.4	0.5	0.5	0.4	0.4	0.3	0.3	-
Height to live crown - ft	0	0	2	6	11	17	25	21	28	-
Site Index (IA=25 yrs) - ft	88	86	76	81	75	77	84	70	78	-
Basal Area per acre - sqft	0	5	24	49	75	102	122	136	152	-
BA growth/Acre/yr - sqft	0.1	1.4	4.2	6.5	7.8	8.6	8.9	9.0	8.8	-
Fusiform rust stem %	1	13	29	26	21	31	48	31	35	-
Crooked stem %	3	36	48	31	42	42	74	44	48	-
Non-planted T/A ≥1"	-	0	69	237	540	323	379	132	934	-
CFWBTS/Acre	1	29	219	607	1106	1890	2868	2911	3921	-
CFWBTS growth/Acre/yr	0	9	38	81	114	161	209	194	226	-
CFWB4"/Acre	0	0	13	201	644	1318	2294	2014	3110	-
CFWB4" growth/Acre/yr	0	0	2	26	66	112	167	134	179	-
Number of Observations	15	20	33	21	18	15	3	2	3	-

TABLE 41

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS ≤50 AND TREES PER ACRE CLASS ≤300

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	3	7	7	16	15	23	31	36	40	40
Height growth/yr - ft	1.5	1.9	1.1	2.0	1.7	2.0	2.3	2.2	2.4	2.1
Dbh - in.	0.0	0.2	0.5	2.5	1.8	3.0	4.6	5.6	5.7	6.7
Dbh growth/yr - in.	0.0	0.1	0.1	0.3	0.2	0.3	0.3	0.4	0.3	0.4
Height to live crown - ft	0	0	0	0	2	4	8	10	14	14
Basal Area per acre - sqft	0	0	0	6	4	11	18	22	28	28
BA growth/Acre/yr - sqft	0	0.1	0.0	0.8	0.5	1.0	1.4	1.4	1.6	1.5
Fusiform rust stem %	0	1	20	58	26	34	40	48	26	49
Crooked stem %	0	1	20	11	69	71	71	42	53	35
Non-planted T/A ≥1"	-	-	0	-	0	88	175	132	569	88
CFWBTS/Acre	0	1	1	51	32	104	251	356	470	508
CFWBTS growth/Acre/yr	0	0	0	6	4	9	19	22	28	27
CFWB4"/Acre	0	0	0	6	0	20	158	278	367	438
CFWB4" growth/Acre/yr	0	0	0	1	0	2	12	17	22	23
Number of Observations	1	5	3	3	3	6	4	2	2	2

TABLE 42

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS ≤50 AND TREES PER ACRE CLASS 400

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	9	4	8	-	-	-	-	-	-
Height growth/yr - ft	-	2.2	0.7	1.0	-	-	-	-	-	-
Dbh - in.	-	0.7	0.1	0.7	-	-	-	-	-	-
Dbh growth/yr - in.	-	0.2	0.0	0.1	-	-	-	-	-	-
Height to live crown - ft	-	0	1	1	-	-	-	-	-	-
Basal Area per acre - sqft	-	2	0	1	-	-	-	-	-	-
BA growth/Acre/yr - sqft	-	0.4	0.0	0.1	-	-	-	-	-	-
Fusiform rust stem %	-	2	1	2	-	-	-	-	-	-
Crooked stem %	-	45	67	68	-	-	-	-	-	-
Non-planted T/A ≥1"	-	0	-	0	-	-	-	-	-	-
CFWBTS/Acre	-	6	0	4	-	-	-	-	-	-
CFWBTS growth/Acre/yr	-	1	0	0	-	-	-	-	-	-
CFWB4"/Acre	-	0	0	0	-	-	-	-	-	-
CFWB4" growth/Acre/yr	-	0	0	0	-	-	-	-	-	-
Number of Observations	-	3	1	1	-	-	-	-	-	-

**TABLE 43**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS ≤50 AND TREES PER ACRE CLASS 500**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	4	8	13	-	24	-	-	-	-
Height growth/yr - ft	-	1.4	1.3	1.6	-	2.1	-	-	-	-
Dbh - in.	-	0.0	0.5	1.2	-	2.8	-	-	-	-
Dbh growth/yr - in.	-	0.0	0.1	0.1	-	0.2	-	-	-	-
Height to live crown - ft	-	0	2	1	-	6	-	-	-	-
Basal Area per acre - sqft	-	0	1	4	-	22	-	-	-	-
BA growth/Acre/yr - sqft	-	0.0	0.2	0.5	-	1.8	-	-	-	-
Fusiform rust stem %	-	1	4	1	-	2	-	-	-	-
Crooked stem %	-	0	49	94	-	29	-	-	-	-
Non-planted T/A ≥1"	-	-	0	0	-	219	-	-	-	-
CFWBTS/Acre	-	0	3	21	-	209	-	-	-	-
CFWBTS growth/Acre/yr	-	0	0	3	-	18	-	-	-	-
CFWB4"/Acre	-	0	0	0	-	36	-	-	-	-
CFWB4" growth/Acre/yr	-	0	0	0	-	3	-	-	-	-
Number of Observations	-	4	1	1	-	2	-	-	-	-

**TABLE 44**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS ≤50 BY TREES PER ACRE CLASS ≥600**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	5	10	-	-	-	-	-	-	-
Height growth/yr - ft	2.0	1.7	1.9	-	-	-	-	-	-	-
Dbh - in.	0.0	0.0	0.9	-	-	-	-	-	-	-
Dbh growth/yr - in.	0.0	0.0	0.2	-	-	-	-	-	-	-
Height to live crown - ft	0	0	1	-	-	-	-	-	-	-
Basal Area per acre - sqft	0	0	4	-	-	-	-	-	-	-
BA growth/Acre/yr - sqft	0.0	0.0	0.8	-	-	-	-	-	-	-
Fusiform rust stem %	0	4	3	-	-	-	-	-	-	-
Crooked stem %	0	0	10	-	-	-	-	-	-	-
Non-planted T/A ≥1"	-	-	0	-	-	-	-	-	-	-
CFWBTS/Acre	0	0	21	-	-	-	-	-	-	-
CFWBTS growth/Acre/yr	0	0	4	-	-	-	-	-	-	-
CFWB4"/Acre	0	0	0	-	-	-	-	-	-	-
CFWB4" growth/Acre/yr	0	0	0	-	-	-	-	-	-	-
Number of Observations	2	1	3	-	-	-	-	-	-	-



**TABLE 45**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 60 AND TREES PER ACRE CLASS ≤300**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	11	16	20	27	34	-	45	48	58
Height growth/yr - ft	-	2.6	2.8	2.8	2.7	3.0	-	2.8	2.7	2.6
Dbh - in.	-	1.1	1.9	2.9	2.6	5.3	-	6.2	6.6	8.1
Dbh growth/yr - in.	-	0.3	0.3	0.4	0.3	0.5	-	0.4	0.4	0.4
Height to live crown - ft	-	1	1	2	7	6	-	18	21	26
Basal Area per acre - sqft	-	2	6	11	12	29	-	68	73	86
BA growth/Acre/yr - sqft	-	0.4	1.1	1.5	1.2	2.5	-	4.2	4.2	3.9
Fusiform rust stem %	-	18	19	47	9	57	-	44	61	70
Crooked stem %	-	49	36	15	45	50	-	21	65	62
Non-planted T/A ≥1"	-	0	-	438	350	420	-	875	1313	88
CFWBTS/Acre	-	9	48	107	145	444	-	1325	1579	2240
CFWBTS growth/Acre/yr	-	2	8	14	14	38	-	83	91	101
CFWB4"/Acre	-	0	0	10	33	324	-	1091	1341	2053
CFWB4" growth/Acre/yr	-	0	0	1	3	28	-	68	77	93
Number of Observations	-	5	5	8	1	5	-	3	3	2

**TABLE 46**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 60 AND TREES PER ACRE CLASS 400**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	-	17	21	-	-	39	-	-	-
Height growth/yr - ft	-	-	2.8	2.8	-	-	2.8	-	-	-
Dbh - in.	-	-	2.4	2.9	-	-	4.7	-	-	-
Dbh growth/yr - in.	-	-	0.4	0.4	-	-	0.4	-	-	-
Height to live crown - ft	-	-	3	3	-	-	9	-	-	-
Basal Area per acre - sqft	-	-	11	18	-	-	52	-	-	-
BA growth/Acre/yr - sqft	-	-	1.8	2.4	-	-	3.7	-	-	-
Fusiform rust stem %	-	-	21	36	-	-	30	-	-	-
Crooked stem %	-	-	33	48	-	-	40	-	-	-
Non-planted T/A ≥1"	-	-	-	0	-	-	-	-	-	-
CFWBTS/Acre	-	-	91	167	-	-	847	-	-	-
CFWBTS growth/Acre/yr	-	-	15	22	-	-	60	-	-	-
CFWB4"/Acre	-	-	0	20	-	-	525	-	-	-
CFWB4" growth/Acre/yr	-	-	0	2	-	-	38	-	-	-
Number of Observations	-	-	1	3	-	-	1	-	-	-

TABLE 47

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS 60 AND TREES PER ACRE CLASS 500

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	10	16	18	27	-	37	-	-	53
Height growth/yr - ft	-	2.5	2.8	2.6	2.9	-	2.6	-	-	2.6
Dbh - in.	-	1.2	1.7	2.7	3.3	-	4.5	-	-	6.3
Dbh growth/yr - in.	-	0.3	0.3	0.4	0.4	-	0.3	-	-	0.3
Height to live crown - ft	-	0	2	0	5	-	10	-	-	21
Basal Area per acre - sqft	-	4	7	19	31	-	59	-	-	98
BA growth/Acre/yr - sqft	-	1.0	1.3	2.7	3.2	-	4.2	-	-	4.9
Fusiform rust stem %	-	1	12	40	33	-	45	-	-	49
Crooked stem %	-	0	54	1	55	-	25	-	-	61
Non-planted T/A $\geq 1"$	-	-	262	-	175	-	-	-	-	350
CFWBTS/Acre	-	20	52	161	377	-	968	-	-	2325
CFWBTS growth/Acre/yr	-	5	9	23	39	-	69	-	-	116
CFWB4"/Acre	-	0	0	0	151	-	551	-	-	1921
CFWB4" growth/Acre/yr	-	0	0	0	16	-	39	-	-	96
Number of Observations	-	1	2	1	3	-	1	-	-	1

TABLE 48

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS 60 AND TREES PER ACRE CLASS  $\geq 600$

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	7	16	22	28	35	-	-	-	-
Height growth/yr - ft	2.0	2.3	2.8	2.9	3.0	2.9	-	-	-	-
Dbh - in.	0.0	0.7	1.9	2.9	3.9	4.5	-	-	-	-
Dbh growth/yr - in.	0.0	0.2	0.3	0.4	0.4	0.4	-	-	-	-
Height to live crown - ft	0	0	3	4	8	13	-	-	-	-
Basal Area per acre - sqft	0	2	16	36	59	93	-	-	-	-
BA growth/Acre/yr - sqft	0.0	0.7	2.8	4.8	6.3	7.7	-	-	-	-
Fusiform rust stem %	0	5	17	30	20	29	-	-	-	-
Crooked stem %	0	25	62	5	41	38	-	-	-	-
Non-planted T/A $\geq 1"$	-	-	0	-	233	175	-	-	-	-
CFWBTS/Acre	0	7	123	350	708	1399	-	-	-	-
CFWBTS growth/Acre/yr	0	2	21	46	76	117	-	-	-	-
CFWB4"/Acre	0	0	1	8	223	722	-	-	-	-
CFWB4" growth/Acre/yr	0	0	0	1	23	60	-	-	-	-
Number of Observations	1	1	3	2	3	3	-	-	-	-

TABLE 49

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS 70 AND TREES PER ACRE CLASS ≤300

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	-	16	23	31	37	43	50	56	63
Height growth/yr - ft	-	-	3.1	3.2	3.2	3.2	3.2	3.2	3.1	3.0
Dbh - in.	-	-	2.2	3.4	4.8	5.7	6.7	7.2	7.5	8.7
Dbh growth/yr - in.	-	-	0.4	0.5	0.5	0.5	0.5	0.5	0.4	0.4
Height to live crown - ft	-	-	0	3	6	11	15	21	25	29
Basal Area per acre - sqft	-	-	8	17	32	47	50	68	85	83
BA growth/Acre/yr - sqft	-	-	1.5	2.3	3.4	4.0	3.7	4.4	4.7	3.9
Fusiform rust stem %	-	-	40	46	45	48	53	46	55	53
Crooked stem %	-	-	51	44	48	54	53	46	54	40
Non-planted T/A ≥1"	-	-	88	321	385	396	574	929	750	788
CFWBTS/Acre	-	-	69	181	434	767	959	1604	2113	2344
CFWBTS growth/Acre/yr	-	-	12	25	46	66	71	104	118	111
CFWB4"/Acre	-	-	0	39	270	589	824	1414	1900	2186
CFWB4" growth/Acre/yr	-	-	0	5	28	51	61	92	106	103
Number of Observations	-	-	3	16	12	17	19	13	14	9

TABLE 50

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS 70 AND TREES PER ACRE CLASS 400

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	4	-	18	26	31	39	45	50	52	62
Height growth/yr - ft	2.2	-	3.2	3.2	3.3	3.3	3.3	3.3	3.1	2.8
Dbh - in.	0.0	-	2.3	3.8	4.5	5.4	5.9	6.3	5.9	7.3
Dbh growth/yr - in.	0.0	-	0.4	0.5	0.5	0.5	0.4	0.4	0.3	0.3
Height to live crown - ft	0	-	1	6	7	13	17	21	17	30
Basal Area per acre - sqft	0	-	12	34	43	63	73	84	74	112
BA growth/Acre/yr - sqft	0.0	-	2.1	4.3	4.6	5.4	5.4	5.5	4.4	4.9
Fusiform rust stem %	0	-	25	20	48	35	40	46	53	43
Crooked stem %	0	-	38	66	55	49	38	53	36	38
Non-planted T/A ≥1"	-	-	175	219	289	613	204	547	613	700
CFWBTS/Acre	0	-	99	398	571	1080	1449	1786	1615	3152
CFWBTS growth/Acre/yr	0	-	17	50	62	93	106	118	95	138
CFWB4"/Acre	0	-	1	116	329	782	1145	1481	1256	2809
CFWB4" growth/Acre/yr	0	-	0	14	35	67	84	98	74	123
Number of Observations	4	-	9	2	10	11	7	4	1	2



TABLE 51

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS 70 AND TREES PER ACRE CLASS 500

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	5	10	16	23	30	37	47	-	50	-
Height growth/yr - ft	2.5	2.8	3.0	3.3	3.1	3.2	3.4	-	2.9	-
Dbh - in.	0.0	0.6	2.3	2.3	3.9	4.8	5.7	-	5.5	-
Dbh growth/yr - in.	0.0	0.2	0.4	0.3	0.4	0.4	0.4	-	0.3	-
Height to live crown - ft	0	0	1	5	8	14	23	-	17	-
Basal Area per acre - sqft	0	2	14	15	43	62	92	-	82	-
BA growth/Acre/yr - sqft	0	0.4	2.5	2.1	4.4	5.3	6.6	-	4.8	-
Fusiform rust stem %	0	2	20	9	38	35	24	-	57	-
Crooked stem %	5	30	39	48	59	48	52	-	29	-
Non-planted T/A $\geq 1$ "	-	0	0	1050	554	700	175	-	-	-
CFWBTS/Acre	0	8	105	155	575	1036	1980	-	1738	-
CFWBTS growth/Acre/yr	0	2	19	22	60	89	141	-	102	-
CFWB4"/Acre	0	0	0	3	245	675	1517	-	1305	-
CFWB4" growth/Acre/yr	0	0	0	0	25	58	108	-	77	-
Number of Observations	1	2	4	1	3	5	1	-	1	-

TABLE 52

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS 70 AND TREES PER ACRE CLASS  $\geq 600$

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	5	8	19	23	31	40	-	48	-	-
Height growth/yr - ft	2.5	2.8	3.2	3.2	3.3	3.3	-	3.2	-	-
Dbh - in.	0.0	0.6	2.5	3.0	4.4	5.2	-	5.2	-	-
Dbh growth/yr - in.	0.0	0.2	0.4	0.4	0.5	0.4	-	0.3	-	-
Height to live crown - ft	0	0	2	4	9	16	-	21	-	-
Basal Area per acre - sqft	0	2	24	36	71	101	-	136	-	-
BA growth/Acre/yr - sqft	0.0	0.5	4.1	4.9	7.6	8.4	-	9.0	-	-
Fusiform rust stem %	0	11	26	14	21	34	-	31	-	-
Crooked stem %	0	35	43	20	40	58	-	44	-	-
Non-planted T/A $\geq 1$ "	-	0	39	0	675	248	-	132	-	-
CFWBTS/Acre	0	8	203	370	944	1778	-	2911	-	-
CFWBTS growth/Acre/yr	0	2	35	50	101	148	-	148	-	-
CFWB4"/Acre	0	0	4	23	506	1240	-	2014	-	-
CFWB4" growth/Acre/yr	0	0	1	3	54	103	-	134	-	-
Number of Observations	3	4	9	4	7	6	-	2	-	-

**TABLE 53**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 80 AND TREES PER ACRE CLASS ≤300**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	14	21	27	34	44	50	55	61	71
Height growth/yr - ft	-	3.5	3.5	3.7	3.7	3.7	3.7	3.6	3.5	3.4
Dbh - in.	-	1.6	2.6	3.9	5.0	6.0	6.7	7.5	8.0	8.8
Dbh growth/yr - in.	-	0.4	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.4
Height to live crown - ft	-	0	3	4	8	16	20	23	27	34
Basal Area per acre - sqft	-	4	11	25	36	56	69	73	89	94
BA growth/Acre/yr - sqft	-	1.0	1.8	3.3	3.9	4.8	5.0	4.7	5.2	4.5
Fusiform rust stem %	-	24	22	41	54	44	46	47	55	48
Crooked stem %	-	52	61	47	59	48	49	54	58	64
Non-planted T/A ≥1"	-	-	263	234	511	856	841	1275	584	694
CFWBTS/Acre	-	28	105	297	550	1081	1540	1807	2409	2997
CFWBTS growth/Acre/yr	-	7	18	40	59	93	113	117	140	142
CFWB4"/Acre	-	0	16	113	369	868	1319	1625	2203	2812
CFWB4" growth/Acre/yr	-	0	3	15	39	74	96	105	128	133
Number of Observations	-	2	1	7	15	16	18	21	12	13

**TABLE 54**  
**SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS**  
**BY AGE CLASSES WITHIN SITE INDEX CLASS 80 AND TREES PER ACRE CLASS 400**

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	6	13	19	28	35	41	50	55	66	71
Height growth/yr - ft	3.0	3.2	3.5	3.7	3.7	3.7	3.6	3.7	3.7	3.2
Dbh - in.	0.3	1.6	2.8	4.1	4.8	5.7	6.2	7.1	8.1	7.0
Dbh growth/yr - in.	0.2	0.4	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.3
Height to live crown - ft	0	0	2	6	9	14	23	26	26	35
Basal Area per acre - sqft	0	5	18	40	50	70	83	112	141	118
BA growth/Acre/yr - sqft	0	1.2	3.2	5.2	5.3	6.2	6.0	7.5	7.8	5.4
Fusiform rust stem %	11	4	29	44	53	32	35	46	26	42
Crooked stem %	1	22	57	58	47	50	46	65	88	51
Non-planted T/A ≥1"	-	-	66	271	306	629	595	1291	0	1050
CFWBTS/Acre	1	30	158	511	756	1289	1878	2736	4206	3752
CFWBTS growth/Acre/yr	0	8	28	66	80	114	137	182	234	171
CFWB4"/Acre	0	0	14	227	486	994	1552	2404	3872	3299
CFWB4" growth/Acre/yr	0	0	2	29	51	88	113	160	215	150
Number of Observations	3	1	6	10	5	13	12	4	1	1

TABLE 55

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS 80 AND TREES PER ACRE CLASS 500

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	6	11	18	27	35	44	47	-	63	-
Height growth/yr - ft	3.0	3.1	3.6	3.6	3.7	3.8	3.6	-	3.5	-
Dbh - in.	0.0	1.0	2.1	3.6	4.9	5.9	6.2	-	7.1	-
Dbh growth/yr - in.	0.0	0.3	0.4	0.5	0.5	0.5	0.5	-	0.4	-
Height to live crown - ft	0	0	1	5	10	20	20	-	25	-
Basal Area per acre - sqft	0	4	12	37	66	95	100	-	140	-
BA growth/Acre/yr - sqft	0	0.9	2.4	5.0	7.0	8.2	7.7	-	7.8	-
Fusiform rust stem %	0	18	39	42	47	34	36	-	53	-
Crooked stem %	0	2	60	46	49	53	40	-	74	-
Non-planted T/A $\geq 1"$	-	-	219	219	893	1225	656	-	438	-
CFWBTS/Acre	0	20	102	451	1033	1843	2048	-	4070	-
CFWBTS growth/Acre/yr	0	5	20	61	109	158	158	-	226	-
CFWB4"/Acre	0	0	0	134	680	1463	1662	-	3583	-
CFWB4" growth/Acre/yr	0	0	0	18	71	126	128	-	199	-
Number of Observations	1	2	4	8	5	3	2	-	1	-

TABLE 56

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS 80 AND TREES PER ACRE CLASS  $\geq 600$

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	6	10	19	29	36	42	45	-	60	-
Height growth/yr - ft	3.0	3.2	3.5	3.8	3.7	3.7	3.5	-	3.4	-
Dbh - in.	0.1	0.9	2.6	4.1	4.9	5.2	5.9	-	6.0	-
Dbh growth/yr - in.	0.1	0.3	0.5	0.5	0.5	0.5	0.5	-	0.3	-
Height to live crown - ft	0	0	2	7	14	18	23	-	28	-
Basal Area per acre - sqft	0	3	23	55	83	88	112	-	152	-
BA growth/Acre/yr - sqft	0	0.9	4.1	7.2	8.4	7.7	8.6	-	8.8	-
Fusiform rust stem %	3	11	35	29	21	30	46	-	35	-
Crooked stem %	12	36	45	39	45	35	93	-	48	-
Non-planted T/A $\geq 1"$	-	0	98	280	425	919	525	-	934	-
CFWBTS/Acre	0	14	197	728	1336	1688	2304	-	3921	-
CFWBTS growth/Acre/yr	0	5	35	94	135	147	177	-	226	-
CFWB4"/Acre	0	0	5	288	861	1149	1797	-	3110	-
CFWB4" growth/Acre/yr	0	0	1	37	87	100	138	-	179	-
Number of Observations	2	3	9	10	7	2	1	-	3	-



TABLE 57

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS  $\geq 90$  AND TREES PER ACRE CLASS  $\leq 300$

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	-	-	24	32	41	47	54	69	69	81
Height growth/yr - ft	-	-	4.0	4.2	4.3	4.1	4.0	4.3	3.8	3.8
Dbh - in.	-	-	3.7	4.7	5.7	6.6	7.3	8.0	8.7	9.3
Dbh growth/yr - in.	-	-	0.6	0.6	0.6	0.6	0.5	0.5	0.5	0.4
Height to live crown - ft	-	-	6	7	8	15	21	29	29	41
Basal Area per acre - sqft	-	-	23	36	47	56	81	98	92	112
BA growth/Acre/yr - sqft	-	-	3.8	4.6	5.0	4.9	5.9	6.1	5.1	5.2
Fusiform rust stem %	-	-	57	63	49	66	62	54	57	30
Crooked stem %	-	-	28	50	49	62	62	65	40	72
Non-planted T/A $\geq 1"$	-	-	-	671	1294	321	1269	350	700	328
CFWBTS/Acre	-	-	244	514	840	1129	1951	3024	2703	4099
CFWBTS growth/Acre/yr	-	-	41	66	89	98	142	189	150	189
CFWB4"/Acre	-	-	54	322	653	957	1743	2767	2536	3895
CFWB4" growth/Acre/yr	-	-	9	41	69	83	127	173	141	179
Number of Observations	-	-	2	3	6	4	3	1	2	4

TABLE 58

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS  $\geq 90$  AND TREES PER ACRE CLASS 400

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	8	15	22	34	-	46	57	59	-	-
Height growth/yr - ft	3.8	4.0	4.1	4.4	-	4.1	4.1	3.9	-	-
Dbh - in.	0.5	1.9	3.4	4.6	-	6.1	7.4	7.6	-	-
Dbh growth/yr - in.	0.2	0.5	0.6	0.6	-	0.6	0.5	0.5	-	-
Height to live crown - ft	0	0	4	7	-	17	28	31	-	-
Basal Area per acre - sqft	6	8	24	48	-	81	119	126	-	-
BA growth/Acre/yr - sqft	3.0	2.1	4.5	6.3	-	7.2	8.5	8.4	-	-
Fusiform rust stem %	12	29	36	50	-	31	42	32	-	-
Crooked stem %	22	20	64	67	-	45	64	65	-	-
Non-planted T/A $\geq 1"$	-	-	394	280	-	490	379	88	-	-
CFWBTS/Acre	2	61	250	691	-	1639	3058	3402	-	-
CFWBTS growth/Acre/yr	1	15	46	91	-	147	218	227	-	-
CFWB4"/Acre	0	0	44	410	-	1331	2733	3074	-	-
CFWB4" growth/Acre/yr	0	0	8	54	-	119	195	205	-	-
Number of Observations	2	4	2	5	-	7	3	1	-	-

TABLE 59

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS  $\geq 90$  AND TREES PER ACRE CLASS 500

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	6	14	21	33	37	47	-	58	-	-
Height growth/yr - ft	3.5	4.2	4.0	4.1	4.2	4.1	-	3.9	-	-
Dbh - in.	0.3	1.6	2.9	4.4	5.0	5.8	-	7.0	-	-
Dbh growth/yr - in.	0.1	0.5	0.5	0.5	0.6	0.5	-	0.5	-	-
Height to live crown - ft	0	0	2	8	11	19	-	28	-	-
Basal Area per acre - sqft	0	8	23	52	65	92	-	124	-	-
BA growth/Acre/yr - sqft	0.2	2.1	4.2	6.6	7.3	8.1	-	8.3	-	-
Fusiform rust stem %	0	16	40	42	47	29	-	48	-	-
Crooked stem %	7	13	54	47	48	36	-	92	-	-
Non-planted T/A $\geq 1$ "	-	-	63	117	385	490	-	175	-	-
CFWBTS/Acre	1	59	220	777	1075	1910	-	3223	-	-
CFWBTS growth/Acre/yr	1	16	40	97	119	169	-	215	-	-
CFWB4"/Acre	0	0	19	418	695	1477	-	2834	-	-
CFWB4" growth/Acre/yr	0	0	3	52	77	130	-	189	-	-
Number of Observations	3	3	9	5	6	-	1	-	-	-

TABLE 60

SLASH PINE PLANTATIONS IN EAST TEXAS ... OBSERVED AVERAGE CHARACTERISTICS  
BY AGE CLASSES WITHIN SITE INDEX CLASS  $\geq 90$  AND TREES PER ACRE CLASS  $\geq 600$

Plantation Characteristic	Observed average plantation characteristic by age class									
	1-2	3-4	5-6	7-8	9-10	11-12	13-14	15-16	17-18	19-27
Height - ft	6	13	23	30	42	50	56	-	-	-
Height growth/yr - ft	3.8	4.0	4.1	4.1	4.2	4.3	4.0	-	-	-
Dbh - in.	0.3	1.3	3.1	4.0	5.5	5.8	6.1	-	-	-
Dbh growth/yr - in.	0.1	0.4	0.6	0.5	0.6	0.5	0.4	-	-	-
Height to live crown - ft	0	1	3	7	17	21	26	-	-	-
Basal Area per acre - sqft	0	7	35	50	97	116	127	-	-	-
BA growth/Acre/yr - sqft	0.2	2.0	6.2	7.0	9.7	10.1	9.1	-	-	-
Fusiform rust stem %	1	15	37	25	20	29	48	-	-	-
Crooked stem %	2	41	63	33	28	22	64	-	-	-
Non-planted T/A $\geq 1$ "	-	0	107	306	1313	175	306	-	-	-
CFWBTS/Acre	2	46	354	659	1818	2526	3150	-	-	-
CFWBTS growth/Acre/yr	1	13	63	91	182	219	225	-	-	-
CFWB4"/Acre	0	0	40	247	1362	1965	2542	-	-	-
CFWB4" growth/Acre/yr	0	0	7	34	136	170	182	-	-	-
Number of Observations	7	11	9	5	1	4	2	-	-	-