CO-OP REDWOOD YIELD RESEARCH PROJECT
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Research Note No. 1 December 11, 1975

PRELIMINARY YOUNG GROWTH VOLUME TABLES FOR COASTAL CALIFORNIA CONIFERS

by

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This report presents preliminary young-growth cubic and board foot Scribner volume tables for coastal redwood, Douglas fir and other whitewoods (lowland white fir, hemlock and Sitka spruce). These tables are intended to be used in managed young-growth stands and will reflect the average volumes expected in crop trees rather than the average volumes of all trees in an unmanaged stand. These tables are considered preliminary because additional trees will be measured in the future which will add to the precision of volume estimates and allow a segregation by geographical areas within the north coast region.

Scribner volumes are from stump to a six inch top inside bark. Cubic foot volumes are from stump to tip of the tree. Cubic volumes from stump to a four inch top inside bark are consistently about one half a cubic foot less than volumes to tree tip so separate tables for this case were deemed unnecessary at this stage.

All volumes are gross with no allowance for defect or breakage.

Sampling Procedures and Tree Selection

Sampling was performed during the summer of 1975 on lands belonging to members of the Redwood Yield Research Cooperative. Tree selection was semi-random. A loose criterion was adopted to select trees between 3-50 inches DBH over the range of conditions encountered on the properties sampled with the following restrictions.

1. Trees on the edges of road cuts were not measured unless the roads were recently constructed.

2. Trees were not selected in stands composed of residual old growth or in stands where there was evidence that the trees present developed as an understory of old growth stands.

3. Trees were not selected if they were severely suppressed, had broken tops or possessed other abnormalities that would make them unlikely candidates as crop trees in managed young growth stands.

Acknowledgements are extended to Robert Davenport and Joe Dye for performing necessary statistical computations and data processing. Dan Coombes is also acknowledged for collecting field data.

Tree Volumes: Measurements and Processing

Tree measurements were taken with a Barr and Stroud optical dendrometer. Individual tree data were processed by a specially modified version of the computer program STX which produced information on tree volumes to various top diameters inside bark[1/].

Volume Equations

The tree volume equation selected was of the form:

$$\log(V) = b_0 + b_1 \log(D) + b_2 \log(H) \qquad (1)$$

where V is tree volume in the respective units, D is DBH in inches, H is tree height in feet, b_0, b_1, b_2 are constants to be fitted and *log* denotes the *natural logarithm*[2/]. This form was selected because experience has shown that it results in good functional fits, is well behaved, is easy to use, and the constants b_0, b_1, b_2 can be easily estimated with conventional linear regression techniques.

Equation (1) is equivalent to

$$V = \mathrm{EXP}\ (b_0 + b_1 \log(D) + b_2 \log(H) \qquad (2)$$

where EXP means *e*, the base of natural logarithms (2.71828) raised to the power of the quantity in parenthesis. Perhaps more conveniently, equation (1) is also equivalent to

$$V = \overset{*}{b}_0 D^{b_1} H^{b_2} \qquad (3)$$

where $\overset{*}{b}_0 = \mathrm{EXP}(b_0)$ or e^{b_0}.

Experience has shown that the bias introduced by making a logarithmic transformation of the dependent variable (volume) is negligible so adjustments were not considered.

Volume Tables

The volume tables shown at the end of this report (Tables 1-6) were generated by substituting various DBH and height combinations in the appropriate equations. The equations are shown at the bottom of each table. A few items should be noted concerning these tables.

1. Trees with less than one 16 foot log were not included in the board foot tables.

2. Stump height was chosen in the field to coincide where the tree would probably be cut. Thus, it is variable.

1/ Readers desiring more information on the use of optical dendrometers and the STX program in preparing volume tables are referred to the discussion and reference citations in: Wensel, Lee C. 1971, Tree Volume Equations and Tables from Dendrometer Measurements. Hilgardia, V41, No.4, U.C. Agric. Exp. Sta.

2/ The equations at the bottom of the volume tables have *log* replaced with the notation 'LN'.

Reliability

The volume tables essentially give 'average' volumes for trees of a given DBH and height. These volumes are subject to two sources of statistical error when used for an individual tree; (1) an error associated with estimating the 'true' population volume relationship from samples. This source of error can be reduced by taking more samples. (2) An error associated with random deviations about the 'true' population volume relationship. This source of error may be reduced by adding additional explanatory variables (e.g., form class).

To give some idea of the precision of the volume equations, 95 percent confidence intervals, expressed as a percent of the tabled volumes are shown in Tables 7-12. These intervals are relatively small in the DBH-Height categories where the bulk of the tree samples were taken (Tables 13-15).

Notes to Users

As with all regional volume studies, field checks should be made to test for local anomalies from the general relationships shown in the volume tables before general usage. Checks against the redwood cubic volume tables of Palley indicate that there is a reasonable compliance in the small DBH classes but these tables are about 10 percent higher in the larger DBH classes (30-40 inches). Possibilities for this discrepancy are numerous: different sampling distributions, different methods and levels of accuracy in various phases of volume estimation, different criterion in tree selection, different functional volume equation forms, shifts in population characteristics over time, etc.

No attempt has been made at this time to account for these differences.

BK/bjd

Table 1

GROSS CUBIC-FOOT VOLUME TABLE
REDWOOD

DBH (INCHES)	TOTAL HEIGHT (FEET) 20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230
4	1	1	1	1	2	2	2	2	3	3	3	3	4	4	4	4	5	5	5	5	6	6
6	1	2	2	3	4	4	5	5	6	6	7	7	8	9	9	10	10	11	11	12	12	13
8	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
10	3	5	7	8	10	11	13	15	16	18	19	21	22	24	25	27	28	30	31	33	34	36
12	5	7	10	12	14	16	19	21	23	25	28	30	32	34	36	39	41	43	45	47	50	52
14	7	10	13	16	19	22	25	28	32	35	38	41	44	47	50	53	56	58	61	64	67	70
16	9	13	17	21	25	29	33	37	41	45	49	53	57	61	65	69	72	76	80	84	88	92
18	11	16	22	27	32	37	42	47	52	57	62	67	72	77	82	87	92	97	102	106	111	116
20	13	20	27	33	39	46	52	58	64	70	77	83	89	95	101	107	113	119	125	131	137	143
22	16	24	32	40	47	55	63	70	78	85	93	100	107	115	122	130	137	144	152	159	166	173
24	20	29	38	47	56	66	75	83	92	101	110	119	128	137	145	154	163	172	180	189	198	206
26	23	34	45	56	66	77	87	98	108	119	129	140	150	160	171	181	191	201	212	222	232	242
28	27	39	52	64	77	89	101	114	126	138	150	162	174	186	198	210	222	233	245	257	269	281
30	31	45	60	74	88	102	116	130	144	158	172	186	200	213	227	241	254	268	281	295	309	322
32	35	51	68	84	100	116	132	148	164	180	196	211	227	243	258	274	289	305	320	336	351	366
34	39	58	77	95	113	131	149	167	185	203	221	239	256	274	291	309	327	344	361	379	396	414
36	44	65	86	106	127	147	167	188	208	228	248	267	287	307	327	346	366	386	405	425	444	464
38	49	72	96	119	141	164	187	209	231	254	276	298	320	342	364	386	408	430	451	473	495	516
40	54	80	106	131	157	182	207	232	256	281	306	330	354	379	403	427	452	476	500	524	548	572
42	60	88	117	145	173	200	228	255	282	310	337	364	391	418	444	471	498	525	551	578	604	631
44	66	97	128	159	189	220	250	280	310	340	370	399	429	458	488	517	546	576	605	634	663	692
46	72	106	140	174	207	240	273	306	339	371	404	436	469	501	533	565	597	629	661	693	725	756
48	78	116	152	189	225	261	297	333	369	404	440	475	510	545	580	615	650	685	720	754	789	823
50	85	125	165	205	244	284	323	361	400	439	477	515	553	592	629	667	705	743	781	818	856	893
52	92	136	179	222	264	307	349	391	433	474	516	557	597	640	681	722	763	803	844	885	925	966

VOLUME = EXP(-6.2597 + 1.9967 LN(DBH) + .9642 LN(HT))

Table 2

GROSS CUBIC-FOOT VOLUME TABLE
DOUGLAS-FIR

DBH (INCHES)	TOTAL HEIGHT (FEET) 20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220
4	1	1	1	2	2	3	3	4	5	5	6	6	7	7	8	9	9	10	11	11	12
6	1	2	3	4	5	6	7	8	9	10	11	12	14	15	16	17	19	20	21	22	24
8	2	3	5	6	8	10	11	13	15	17	19	20	22	24	26	28	30	33	35	37	39
10	3	5	7	9	12	14	17	19	22	24	27	30	33	36	39	42	45	48	51	54	57
12	4	7	10	13	16	19	23	26	30	33	37	41	45	49	53	57	61	65	69	74	78
14	5	9	13	16	21	25	29	34	39	43	48	53	58	64	69	74	79	85	90	96	102
16	7	11	16	21	26	31	37	43	49	55	61	67	73	80	86	93	100	107	114	121	128
18	8	14	19	25	32	38	45	52	59	67	74	82	90	98	106	114	122	131	139	148	156
20	10	16	23	30	38	46	54	63	71	80	89	98	108	117	127	137	146	156	167	177	187
22	12	19	27	36	45	54	64	74	84	94	105	116	127	138	149	161	172	184	196	208	221
24	13	22	32	42	52	63	74	85	97	109	122	134	147	160	173	187	200	214	228	242	256
26	15	25	36	48	60	72	85	98	112	125	140	154	169	183	199	214	230	245	261	277	294
28	18	29	41	54	68	82	96	111	127	142	158	175	191	208	226	243	261	278	297	315	333
30	20	33	46	61	76	92	108	125	143	160	178	197	215	234	254	273	293	313	334	354	375
32	22	36	52	68	85	103	121	140	159	179	199	220	241	262	283	305	328	350	373	396	419
34	24	40	57	75	94	114	134	155	177	199	221	244	267	291	314	339	363	388	414	439	465
36	27	44	63	83	104	126	148	171	195	219	244	269	294	320	347	374	401	428	456	484	513
38	30	49	69	91	114	138	163	188	214	240	267	295	323	352	381	410	440	470	500	531	562
40	33	53	76	100	125	151	177	205	233	262	292	322	353	384	415	448	480	513	546	580	614
42	35	58	82	108	136	164	193	223	254	285	317	350	383	417	452	487	522	558	594	631	668
44	38	63	89	117	147	177	209	241	275	309	344	379	415	452	489	527	565	604	643	683	723
46	41	68	96	127	158	191	225	261	296	333	371	409	448	488	528	569	610	652	694	737	780
48	44	73	104	136	170	206	242	280	319	358	399	440	482	525	568	612	656	701	747	793	839
50	47	78	111	146	183	221	260	301	342	384	428	472	517	563	609	656	704	752	801	[illegible]	900

VOLUME = EXP(-6.5193 + 1.7131 LN(DBH) + 1.2274 LN(HT))

Table 3

GROSS CUBIC-FOOT VOLUME TABLE
WHITEWOODS W/O DF

DBH (INCHES)	TOTAL HEIGHT (FEET) 20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190
4	1	1	2	2	3	3	4	4	5	6	7	7	8	9	9	10	11	12
6	1	2	3	4	5	6	8	9	10	12	13	14	16	17	19	20	22	24
8	2	3	5	7	9	11	13	15	17	19	21	23	26	28	31	33	36	38
10	3	5	7	10	13	15	18	21	24	28	31	34	38	41	45	49	52	56
12	4	7	10	14	17	21	25	29	33	38	42	47	52	56	61	66	71	77
14	5	9	13	18	22	27	32	38	43	49	55	61	67	73	80	86	93	100
16	7	11	17	22	28	34	41	47	54	61	69	76	84	92	100	108	117	125
18	8	14	20	27	34	42	50	58	66	75	84	93	103	112	122	132	142	153
20	10	17	24	32	41	50	59	69	79	90	101	112	123	134	146	158	170	183
22	12	20	28	38	48	59	70	81	93	106	118	131	145	158	172	186	200	215
24	13	23	33	44	56	68	81	95	108	123	137	152	168	183	199	216	232	249
26	15	26	38	51	64	78	93	108	124	141	157	175	192	210	229	247	266	286
28	17	30	43	57	73	89	105	123	141	159	178	198	218	238	259	280	302	324
30	20	33	48	64	82	100	119	138	158	179	201	223	245	268	292	315	340	364
32	22	37	54	72	91	111	132	154	177	200	224	249	274	299	325	352	379	407
34	24	41	60	80	101	123	147	171	196	222	248	276	303	332	361	390	420	451
36	27	45	66	88	111	136	162	188	216	245	274	304	334	366	398	430	463	497
38	29	50	72	96	122	149	177	207	237	268	300	333	367	401	436	472	508	545
40	32	54	79	105	133	163	194	225	259	293	328	363	400	438	476	515	554	595

VOLUME = EXP(-6.7013 + 1.7022 LN(DBH) + 1.2979 LN(HT))

Table 4

GROSS BOARD-FOOT VOLUME TABLE
REDWOOD

DBH (INCHES)	TOTAL HEIGHT (FEET) 20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230
8	3	6	9	12	16	20	25	30	35	40	46	52	58	65	71	78	85	92	100	107	115	123
10	5	9	15	20	27	34	42	50	58	67	77	87	97	108	119	130	142	154	167	179	192	206
12	8	14	22	31	41	52	63	76	89	103	117	132	148	164	181	198	216	234	253	273	293	313
14	11	21	32	44	59	74	90	108	127	146	167	188	211	234	258	282	308	334	361	389	417	446
16	15	28	43	60	80	100	123	147	172	199	227	256	286	318	350	384	418	454	491	528	567	606
18	20	37	56	79	104	132	161	192	226	261	297	335	375	416	459	503	548	595	643	692	743	794
20	25	47	72	101	133	168	205	245	287	332	379	427	478	530	585	641	699	758	819	882	946	1012
22	31	58	90	126	165	209	255	305	358	413	471	532	595	660	728	798	870	944	1020	1098	1178	1260
24	38	71	109	153	202	255	312	373	437	505	576	650	727	807	889	975	1063	1153	1246	1341	1439	1539
26	46	85	132	184	243	306	375	448	525	607	692	781	874	970	1069	1171	1277	1386	1498	1612	1730	1850
28	55	101	156	218	288	363	445	531	623	719	820	926	1036	1150	1267	1389	1514	1643	1776	1912	2051	2193
30	64	118	183	256	337	426	521	622	730	843	961	1085	1214	1347	1485	1628	1775	1926	2081	2240	2403	2570
32	74	137	212	297	391	494	604	722	847	978	1115	1259	1408	1563	1723	1888	2058	2234	2414	2598	2788	2981
34	85	158	244	341	450	568	695	830	973	1124	1282	1447	1618	1796	1980	2170	2366	2568	2774	2987	3204	3427
36	97	180	278	389	513	647	792	946	1110	1282	1462	1650	1846	2048	2258	2475	2698	2928	3164	3406	3654	3908
38	110	204	315	441	581	733	897	1072	1257	1451	1655	1868	2090	2319	2557	2802	3055	3315	3583	3857	4138	4425
40	124	229	354	496	653	825	1009	1206	1414	1633	1863	2102	2351	2610	2877	3153	3438	3730	4031	4339	4656	4979
42	139	256	396	555	731	923	1129	1349	1582	1827	2084	2352	2630	2919	3218	3527	3846	4173	4509	4854	5208	5570
44	155	285	441	617	813	1027	1256	1501	1760	2033	2319	2617	2927	3249	3582	3925	4280	4644	5018	5402	5796	6199
46	171	316	488	684	901	1137	1391	1663	1950	2252	2568	2898	3242	3598	3967	4348	4740	5143	5558	5983	6419	6865
48	189	348	538	754	993	1254	1534	1833	2150	2483	2832	3196	3575	3968	4375	4794	5227	5672	6129	6598	7079	7571
50	207	383	591	828	1091	1377	1685	2014	2361	2727	3111	3511	3927	4358	4805	5266	5741	6230	6732	7247	7775	8316
52	227	419	647	906	1194	1507	1844	2204	2584	2985	3404	3842	4297	4770	5258	5763	6283	6818	7367	7931	8509	9100

VOLUME = EXP(-8.1850 + 2.2985 LN(DBH) + 1.5114 LN(HT))

Table 5

GROSS BOARD-FOOT VOLUME TABLE
DOUGLAS-FIR

DBH (INCHES)	TOTAL HEIGHT (FEET) 30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220
8	4	8	13	19	26	35	45	56	68	82	97	113	130	149	169	191	214	238	263	290
10	7	12	20	29	40	53	67	84	103	123	146	170	196	225	255	288	322	359	397	438
12	9	17	28	40	56	74	94	118	144	172	204	238	275	315	357	403	451	502	556	613
14	13	23	37	54	74	98	125	156	191	229	271	316	365	418	474	535	599	667	738	814
16	16	29	47	69	95	125	160	200	244	293	346	404	467	534	607	684	766	853	944	1041
18	20	36	58	85	118	155	199	248	303	363	430	502	580	664	753	849	951	1059	1173	1293
20	24	44	71	103	143	189	242	301	368	441	522	609	704	806	915	1031	1155	1286	1424	1570
22	29	53	84	123	170	225	288	359	438	526	622	726	839	961	1091	1229	1377	1533	1697	1871
24	34	62	99	145	200	264	339	421	514	617	730	852	985	1127	1280	1443	1616	1799	1993	2196
26	39	72	114	168	231	306	392	488	596	715	846	988	1141	1307	1483	1672	1872	2085	2309	2545
28	45	82	131	192	265	351	449	560	683	820	970	1132	1308	1498	1700	1916	2146	2390	2647	2917
30	51	93	149	218	301	398	510	636	776	931	1101	1286	1486	1700	1931	2176	2437	2713	3005	3313
32	58	105	168	246	339	449	574	716	874	1048	1240	1448	1673	1915	2174	2451	2745	3056	3384	3731
34	64	117	187	275	379	502	642	800	977	1172	1386	1619	1871	2141	2431	2740	3069	3417	3784	4171
36	71	131	208	305	421	557	713	889	1086	1302	1540	1799	2078	2379	2701	3044	3409	3796	4204	4634
38	79	144	230	337	465	616	788	982	1199	1439	1701	1987	2296	2628	2984	3363	3766	4193	4644	5120
40	87	158	253	370	512	677	866	1080	1318	1581	1870	2184	2523	2888	3279	3696	4139	4609	5105	5627
42	95	173	277	405	560	740	947	1181	1442	1730	2046	2389	2760	3160	3588	4044	4529	5042	5584	6156
44	103	189	301	441	610	806	1032	1287	1571	1885	2229	2603	3007	3443	3909	4406	4934	5493	6084	6705
46	112	205	327	479	662	875	1120	1396	1705	2046	2419	2825	3264	3736	4242	4781	5355	5962	6603	7279
48	121	222	354	518	716	946	1211	1510	1844	2212	2616	3055	3530	4041	4588	5171	5791	6448	7141	7872
50	131	239	381	559	771	1020	1306	1628	1988	2385	2820	3294	3806	4356	4946	5575	6243	6951	7699	8487

VOLUME = EXP(-9.4524 + 1.8416 LN(DBH) + 2.0940 LN(HT)).

Table 6

GROSS BOARD-FOOT VOLUME TABLE
WHITEWOODS W/O DF

DBH (INCHES)	TOTAL HEIGHT (FEET) 30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190
8	6	10	13	18	22	27	32	38	44	50	56	63	70	77	84	91	99
10	11	17	24	31	39	48	57	66	77	87	98	110	122	134	147	160	174
12	17	27	37	49	62	75	90	105	121	138	156	174	193	213	233	254	275
14	26	39	55	72	91	111	132	155	179	204	230	257	285	314	343	374	406
16	36	55	77	101	127	155	183	217	250	285	322	359	398	439	481	524	568
18	48	74	103	136	171	209	249	292	337	384	433	483	536	590	646	704	764
20	63	96	135	177	223	272	325	381	439	500	564	630	699	770	843	918	996
22	80	123	171	225	284	346	413	484	559	636	717	801	888	978	1071	1167	1266
24	99	153	213	280	353	431	514	602	695	791	892	997	1106	1218	1334	1453	1575
26	121	187	261	343	432	527	629	737	850	968	1091	1220	1352	1490	1631	1777	1927
28	146	225	314	413	520	635	758	888	1024	1167	1315	1470	1630	1795	1966	2142	2322
30	174	268	374	491	619	756	902	1056	1218	1388	1565	1749	1939	2136	2339	2548	2763
32	205	315	440	578	728	890	1061	1243	1433	1633	1841	2057	2281	2512	2751	2997	3250
34	238	367	512	673	848	1036	1236	1447	1670	1902	2144	2396	2657	2927	3205	3491	3786
36	275	424	592	778	980	1197	1427	1671	1928	2196	2475	2767	3068	3380	3701	4032	4372
38	315	485	678	891	1122	1371	1636	1915	2209	2517	2837	3170	3515	3872	4240	4620	5009
40	359	552	771	1014	1277	1560	1861	2179	2514	2863	3228	3607	4000	4406	4825	5256	5700

VOLUME = EXP(-8.4979 + 2.5173 LN(DBH) + 1.4980 LN(HT))

Table 7

95-PERCENT CONFIDENCE INTERVALS
GROSS CUBIC-FOOT VOLUME TABLE
REDWOOD

DBH (INCHES)	TOTAL HEIGHT (FEET) 20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230
	(PERCENT)																					
4	16.4	16.4	19.9	23.9	27.7	31.0	34.1	36.8	39.3	41.6	43.7	45.6	47.5	49.2	50.8	52.3	53.7	55.1	56.4	57.6	58.8	60.0
6	18.9	12.8	12.6	15.1	18.2	21.3	24.2	26.9	29.3	31.6	33.6	35.6	37.4	39.1	40.7	42.2	43.6	45.0	46.2	47.5	48.7	49.8
8	23.2	14.5	10.4	10.1	12.1	14.7	17.4	19.9	22.3	24.5	26.6	28.5	30.3	32.0	33.6	35.1	36.5	37.9	39.1	40.4	41.5	42.7
10	27.4	17.8	11.7	8.6	8.3	10.0	12.3	14.7	17.0	19.2	21.2	23.1	24.9	26.6	28.1	29.6	31.1	32.4	33.7	34.9	36.1	37.2
12	31.1	21.1	14.4	9.7	7.2	7.0	8.5	10.6	12.7	14.8	16.8	18.7	20.5	22.2	23.7	25.2	26.7	28.0	29.3	30.5	31.7	32.8
14	34.5	24.2	17.2	12.0	8.3	6.2	6.1	7.4	9.3	11.3	13.2	15.1	16.8	18.5	20.1	21.6	23.0	24.3	25.6	26.8	28.0	29.1
16	37.4	27.1	19.9	14.5	10.3	7.1	5.4	5.4	6.6	8.4	10.2	12.0	13.7	15.4	16.9	18.4	19.8	21.2	22.4	23.7	24.8	25.9
18	40.1	29.7	22.4	16.9	12.5	9.0	6.3	4.9	4.9	6.1	7.7	9.4	11.1	12.7	14.2	15.7	17.1	18.4	19.7	20.9	22.1	23.2
20	42.5	32.1	24.8	19.2	14.7	11.0	8.0	5.8	4.6	4.7	5.8	7.3	8.8	10.4	11.9	13.3	14.7	16.0	17.3	18.5	19.7	20.8
22	44.7	34.2	26.9	21.3	16.8	13.0	9.9	7.3	5.4	4.5	4.7	5.7	7.0	8.4	9.9	11.3	12.6	13.9	15.2	16.4	17.5	18.6
24	46.7	36.3	28.9	23.3	18.7	14.9	11.7	9.0	6.8	5.3	4.5	4.8	5.7	6.9	8.2	9.5	10.8	12.1	13.3	14.5	15.6	16.7
26	48.6	38.1	30.8	25.1	20.5	16.7	13.5	10.7	8.4	6.5	5.2	4.7	5.0	5.8	6.9	8.1	9.3	10.5	11.7	12.8	14.0	15.0
28	50.4	39.9	32.5	26.8	22.3	18.4	15.2	12.4	10.0	8.0	6.4	5.3	5.0	5.2	6.0	6.9	8.0	9.2	10.3	11.4	12.5	13.5
30	52.0	41.5	34.1	28.5	23.9	20.0	16.8	13.9	11.5	9.4	7.7	6.3	5.5	5.3	5.5	6.2	7.1	8.1	9.1	10.1	11.2	12.2
32	53.6	43.0	35.7	30.0	25.4	21.6	18.3	15.4	13.0	10.8	9.0	7.5	6.4	5.8	5.6	5.9	6.5	7.3	8.2	9.1	10.1	11.0
34	55.1	44.5	37.1	31.4	26.8	23.0	19.7	16.9	14.4	12.2	10.3	8.7	7.5	6.5	6.0	5.9	6.2	6.8	7.5	8.3	9.2	10.1
36	56.4	45.9	38.5	32.8	28.2	24.4	21.1	18.2	15.7	13.5	11.6	9.9	8.6	7.5	6.7	6.3	6.3	6.6	7.1	7.7	8.5	9.3
38	57.8	47.2	39.8	34.1	29.5	25.6	22.4	19.5	17.0	14.8	12.8	11.1	9.7	8.5	7.6	6.9	6.6	6.7	6.9	7.4	8.0	8.7
40	59.0	48.4	41.0	35.3	30.7	26.9	23.6	20.7	18.2	16.0	14.0	12.3	10.8	9.5	8.5	7.7	7.2	7.0	7.0	7.3	7.7	8.2
42	60.2	49.6	42.2	36.5	31.9	28.1	24.8	21.9	19.4	17.1	15.2	13.4	11.9	10.5	9.4	8.5	7.9	7.5	7.3	7.4	7.6	8.0
44	61.4	50.7	43.3	37.6	33.0	29.2	25.9	23.0	20.5	18.2	16.3	14.5	12.9	11.5	10.4	9.4	8.6	8.1	7.7	7.6	7.7	7.9
46	62.5	51.8	44.4	38.7	34.1	30.3	27.0	24.1	21.6	19.3	17.3	15.5	13.9	12.5	11.3	10.3	9.4	8.7	8.3	8.0	7.9	8.0
48	63.5	52.9	45.4	39.7	35.1	31.3	28.0	25.1	22.6	20.3	18.3	16.5	14.9	13.5	12.2	11.1	10.2	9.5	8.9	8.5	8.3	8.3
50	64.5	53.9	46.4	40.7	36.1	32.3	29.0	26.1	23.6	21.3	19.3	17.5	15.9	14.4	13.1	12.0	11.0	10.2	9.6	9.1	8.8	8.6
52	65.5	54.8	47.4	41.7	37.1	33.2	29.9	27.1	24.5	22.3	20.2	18.4	16.8	15.3	14.0	12.8	11.8	11.0	10.2	9.7	9.3	9.0

Table 8

95-PERCENT CONFIDENCE INTERVALS
GROSS CUBIC FOOT VOLUME TABLE
DOUGLAS-FIR

DBH (INCHES)	TOTAL HEIGHT (FEET) 20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220
	(PERCENT)																				
4	9.6	7.1	9.7	13.0	16.1	18.8	21.2	23.3	25.3	27.0	28.7	30.2	31.5	32.9	34.1	35.2	36.3	37.3	38.3	39.3	40.2
6	14.6	7.9	5.4	6.7	9.2	11.7	14.0	16.1	18.1	19.8	21.4	22.9	24.3	25.6	26.8	28.0	29.0	30.1	31.1	32.0	32.9
8	19.1	11.6	6.9	4.5	5.0	7.0	9.1	11.1	13.0	14.7	16.3	17.8	19.2	20.5	21.7	22.9	23.9	25.0	25.9	26.9	27.8
10	22.7	15.1	9.9	6.1	4.0	4.0	5.6	7.4	9.2	10.9	12.5	13.9	15.3	16.6	17.8	18.9	20.0	21.0	22.0	22.9	23.8
12	25.8	18.1	12.7	8.7	5.6	3.7	3.5	4.6	6.2	7.8	9.4	10.8	12.2	13.4	14.6	15.8	16.8	17.9	18.8	19.7	20.6
14	28.4	20.7	15.3	11.1	7.8	5.2	3.5	3.2	4.1	5.4	6.8	8.2	9.6	10.8	12.0	13.1	14.2	15.2	16.2	17.1	18.0
16	30.7	23.0	17.5	13.3	10.0	7.2	5.0	3.5	3.1	3.7	4.9	6.1	7.4	8.6	9.8	10.9	11.9	12.9	13.9	14.8	15.7
18	32.8	25.0	19.5	15.3	11.9	9.1	6.8	4.9	3.6	3.1	3.6	4.5	5.6	6.8	7.9	9.0	10.0	11.0	11.9	12.8	13.7
20	34.6	26.8	21.4	17.1	13.7	10.9	8.5	6.4	4.8	3.7	3.2	3.5	4.3	5.3	6.3	7.3	8.3	9.3	10.2	11.1	12.0
22	36.3	28.5	23.0	18.8	15.4	12.5	10.1	8.0	6.2	4.8	3.8	3.4	3.6	4.2	5.1	6.0	6.9	7.8	8.7	9.6	10.4
24	37.9	30.0	24.5	20.3	16.9	14.0	11.5	9.4	7.6	6.1	4.8	4.0	3.6	3.7	4.2	5.0	5.8	6.6	7.5	8.3	9.1
26	39.3	31.4	25.9	21.7	18.3	15.4	12.9	10.8	8.9	7.3	6.0	4.9	4.1	3.8	3.9	4.3	4.9	5.6	6.4	7.2	7.9
28	40.6	32.8	27.2	23.0	19.6	16.7	14.2	12.1	10.2	8.5	7.1	5.9	4.9	4.3	4.0	4.1	4.4	4.9	5.6	6.3	7.0
30	41.8	34.0	28.5	24.2	20.8	17.9	15.4	13.3	11.4	9.7	8.2	6.9	5.9	5.0	4.5	4.2	4.3	4.5	5.0	5.5	6.2
32	43.0	35.1	29.6	25.4	21.9	19.0	16.5	14.4	12.5	10.8	9.3	8.0	6.8	5.9	5.2	4.7	4.4	4.4	4.7	5.1	5.6
34	44.1	36.2	30.7	26.4	23.0	20.1	17.6	15.4	13.5	11.8	10.3	9.0	7.8	6.8	5.9	5.3	4.8	4.6	4.6	4.8	5.2
36	45.1	37.2	31.7	27.4	24.0	21.1	18.6	16.4	14.5	12.8	11.3	9.9	8.7	7.6	6.7	6.0	5.4	5.0	4.8	4.8	5.0
38	46.1	38.2	32.7	28.4	25.0	22.1	19.6	17.4	15.5	13.8	12.2	10.8	9.6	8.5	7.5	6.7	6.0	5.5	5.2	5.0	5.0
40	47.0	39.1	33.6	29.3	25.9	23.0	20.5	18.3	16.4	14.6	13.1	11.7	10.5	9.3	8.3	7.5	6.7	6.1	5.6	5.3	5.2
42	47.9	40.0	34.5	30.2	26.7	23.8	21.3	19.2	17.2	15.5	13.9	12.5	11.3	10.1	9.1	8.2	7.4	6.7	6.2	5.8	5.5
44	48.7	40.8	35.3	31.0	27.6	24.7	22.2	20.0	18.0	16.3	14.8	13.3	12.1	10.9	9.9	8.9	8.1	7.4	6.8	6.3	5.9
46	49.5	41.6	36.1	31.8	28.4	25.5	23.0	20.8	18.8	17.1	15.5	14.1	12.8	11.7	10.6	9.6	8.8	8.0	7.4	6.8	6.4
48	50.3	42.4	36.8	32.6	29.1	26.2	23.7	21.5	19.6	17.8	16.3	14.9	13.6	12.4	11.3	10.3	9.5	8.7	8.0	7.4	6.9
50	51.0	43.1	37.6	33.3	29.8	26.9	24.4	22.2	20.3	18.6	17.0	15.6	14.3	13.1	12.0	11.0	10.1	9.3	8.6	7.9	7.4

Table 9

95-PERCENT CONFIDENCE INTERVALS
GROSS CUBIC-FOOT VOLUME TABLE
WHITEWOODS W/O BF

DBH (INCHES)	TOTAL HEIGHT (FEET) 20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190
	(PERCENT)																	
4	11.0	9.1	14.0	19.2	23.7	27.6	31.1	34.1	36.9	39.5	41.8	43.9	45.9	47.8	49.5	51.2	52.7	54.2
6	17.9	8.7	6.7	10.1	14.2	18.0	21.4	24.4	27.2	29.7	32.0	34.1	36.1	37.9	39.6	41.3	42.8	44.3
8	24.1	13.7	7.3	5.6	8.1	11.4	14.7	17.7	20.4	22.8	25.1	27.2	29.2	31.0	32.8	34.4	35.9	37.4
10	29.1	18.5	11.3	6.5	5.1	7.0	9.8	12.6	15.3	17.7	19.9	22.0	24.0	25.8	27.5	29.1	30.6	32.1
12	33.4	22.6	15.2	9.7	6.1	5.0	6.5	8.8	11.3	13.6	15.8	17.9	19.8	21.6	23.3	24.9	26.4	27.8
14	37.0	26.2	18.7	13.0	8.8	5.9	5.1	6.3	8.3	10.4	12.5	14.5	16.4	18.1	19.8	21.4	22.9	24.3
16	40.2	29.3	21.8	16.0	11.6	8.1	6.0	5.4	6.4	8.0	9.9	11.7	13.5	15.3	16.9	18.4	19.9	21.3
18	43.0	32.1	24.5	18.8	14.2	10.6	7.8	6.1	5.8	6.6	8.0	9.6	11.2	12.9	14.4	15.9	17.4	18.7
20	45.6	34.7	27.0	21.2	16.6	12.9	9.9	7.6	6.4	6.1	6.8	8.0	9.4	10.9	12.4	13.8	15.2	16.5
22	47.9	37.0	29.3	23.5	18.8	15.0	11.9	9.4	7.6	6.6	6.5	7.1	8.2	9.4	10.7	12.1	13.4	14.7
24	50.0	39.1	31.4	25.6	20.9	17.0	13.8	11.2	9.1	7.7	6.9	6.9	7.5	8.4	9.5	10.6	11.9	13.1
26	52.0	41.0	33.3	27.5	22.8	18.9	15.6	12.9	10.7	9.0	7.8	7.3	7.3	7.8	8.6	9.6	10.6	11.7
28	53.8	42.8	35.1	29.3	24.5	20.6	17.4	14.6	12.3	10.4	8.9	8.0	7.6	7.7	8.1	8.8	9.7	10.7
30	55.5	44.5	36.8	30.9	26.2	22.3	19.0	16.1	13.8	11.8	10.2	9.0	8.2	7.9	8.0	8.4	9.1	9.9
32	57.1	46.1	38.4	32.5	27.7	23.8	20.5	17.6	15.2	13.1	11.4	10.0	9.0	8.4	8.2	8.4	8.7	9.3
34	58.6	47.5	39.8	33.9	29.2	25.2	21.9	19.0	16.6	14.4	12.6	11.1	10.0	9.2	8.7	8.5	8.7	9.0
36	60.0	48.9	41.2	35.3	30.6	26.6	23.3	20.4	17.9	15.7	13.8	12.3	11.0	10.0	9.3	8.9	8.8	9.0
38	61.4	50.3	42.5	36.6	31.9	27.9	24.5	21.6	19.1	16.9	15.0	13.4	12.0	10.9	10.1	9.5	9.2	9.1
40	62.7	51.5	43.8	37.9	33.1	29.1	25.8	22.8	20.3	18.1	16.1	14.4	13.0	11.8	10.8	10.1	9.7	9.4

Table 10

95-PERCENT CONFIDENCE INTERVALS
GROSS BOARD-FOOT VOLUME TABLE
REDWOOD

DBH (INCHES)	TOTAL HEIGHT (FEET) 20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230
	(PERCENT)																					
8	8.2	5.5	4.1	3.8	4.0	4.7	5.3	6.1	6.7	7.4	8.0	8.6	9.1	9.6	10.1	10.5	10.9	11.4	11.7	12.1	12.5	12.8
10	9.2	6.3	4.4	3.4	3.1	3.3	3.9	4.5	5.1	5.8	6.4	6.9	7.5	8.0	8.4	8.9	9.3	9.7	10.1	10.5	10.9	11.2
12	10.2	7.2	5.1	3.7	2.8	2.6	2.8	3.3	3.9	4.5	5.1	5.6	6.2	6.7	7.1	7.6	8.0	8.4	8.8	9.2	9.5	9.9
14	11.1	8.0	5.8	4.2	3.1	2.3	2.1	2.4	2.9	3.4	4.0	4.5	5.1	5.6	6.0	6.5	6.9	7.3	7.7	8.1	8.5	8.8
16	12.0	8.8	6.5	4.9	3.6	2.6	2.0	1.8	2.1	2.5	3.1	3.6	4.1	4.6	5.1	5.5	6.0	6.4	6.8	7.2	7.5	7.9
18	12.7	9.5	7.2	5.5	4.1	3.0	2.2	1.7	1.6	1.9	2.3	2.8	3.3	3.8	4.3	4.7	5.2	5.6	6.0	6.4	6.7	7.1
20	13.4	10.2	7.9	6.2	4.7	3.6	2.7	1.9	1.5	1.5	1.7	2.2	2.6	3.1	3.6	4.0	4.5	4.9	5.3	5.6	6.0	6.3
22	14.0	10.8	8.5	6.8	5.3	4.2	3.2	2.4	1.7	1.4	1.4	1.7	2.1	2.5	3.0	3.4	3.8	4.2	4.6	5.0	5.4	5.7
24	14.6	11.3	9.1	7.3	5.9	4.7	3.7	2.8	2.1	1.6	1.4	1.4	1.7	2.1	2.5	2.9	3.3	3.7	4.1	4.5	4.8	5.2
26	15.1	11.9	9.6	7.8	6.4	5.2	4.2	3.3	2.6	2.0	1.6	1.4	1.5	1.7	2.1	2.5	2.9	3.2	3.6	4.0	4.3	4.7
28	15.6	12.4	10.1	8.3	6.9	5.7	4.7	3.8	3.1	2.4	1.9	1.6	1.5	1.6	1.8	2.1	2.5	2.8	3.2	3.5	3.9	4.2
30	16.1	12.8	10.6	8.8	7.4	6.2	5.2	4.3	3.5	2.8	2.3	1.9	1.6	1.6	1.7	1.9	2.2	2.5	2.9	3.2	3.5	3.8
32	16.5	13.3	11.0	9.2	7.8	6.6	5.6	4.7	3.9	3.3	2.7	2.2	1.9	1.7	1.7	1.8	2.0	2.3	2.6	2.9	3.2	3.5
34	16.9	13.7	11.4	9.7	8.2	7.0	6.0	5.1	4.4	3.7	3.1	2.6	2.2	2.0	1.8	1.8	2.0	2.2	2.4	2.7	2.9	3.2
36	17.3	14.1	11.8	10.1	8.6	7.4	6.4	5.5	4.8	4.1	3.5	3.0	2.6	2.2	2.0	2.0	2.0	2.1	2.3	2.5	2.8	3.0
38	17.7	14.5	12.2	10.4	9.0	7.8	6.8	5.9	5.1	4.5	3.9	3.3	2.9	2.5	2.3	2.1	2.1	2.1	2.2	2.4	2.6	2.8
40	18.0	14.8	12.5	10.8	9.4	8.2	7.2	6.3	5.5	4.8	4.2	3.7	3.2	2.9	2.6	2.4	2.2	2.2	2.3	2.4	2.5	2.7
42	18.4	15.2	12.9	11.1	9.7	8.5	7.5	6.6	5.8	5.2	4.6	4.0	3.6	3.2	2.8	2.6	2.4	2.4	2.4	2.4	2.5	2.7
44	18.7	15.5	13.2	11.5	10.0	8.9	7.8	7.0	6.2	5.5	4.9	4.3	3.9	3.5	3.1	2.9	2.7	2.5	2.5	2.5	2.5	2.7
46	19.0	15.8	13.5	11.8	10.4	9.2	8.2	7.3	6.5	5.8	5.2	4.7	4.2	3.8	3.4	3.1	2.9	2.7	2.6	2.6	2.6	2.7
48	19.3	16.1	13.8	12.1	10.7	9.5	8.5	7.6	6.8	6.1	5.5	5.0	4.5	4.1	3.7	3.4	3.1	2.9	2.8	2.7	2.7	2.7
50	19.6	16.4	14.1	12.4	11.0	9.8	8.8	7.9	7.1	6.4	5.8	5.2	4.8	4.3	4.0	3.6	3.4	3.2	3.0	2.9	2.8	2.8
52	19.8	16.6	14.4	12.6	11.2	10.1	9.0	8.2	7.4	6.7	6.1	5.5	5.0	4.6	4.2	3.9	3.6	3.4	3.2	3.1	3.0	3.0

Table 11

95-PERCENT CONFIDENCE INTERVALS
GROSS BOARD-FOOT VOLUME TABLE
DOUGLAS-FIR

DBH (INCHES)	TOTAL HEIGHT (FEET) 30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220
	(PERCENT)																			
8	6.9	4.8	3.8	3.7	4.2	5.0	5.8	6.6	7.4	8.1	8.7	9.4	10.0	10.5	11.1	11.6	12.1	12.5	13.0	13.4
10	8.1	5.7	4.1	3.1	3.0	3.4	4.0	4.7	5.5	6.2	6.8	7.5	8.1	8.6	9.2	9.7	10.2	10.6	11.1	11.5
12	9.3	6.8	4.9	3.5	2.6	2.4	2.7	3.3	4.0	4.6	5.3	5.9	6.5	7.1	7.6	8.1	8.6	9.1	9.5	9.9
14	10.5	7.8	5.8	4.3	3.1	2.3	2.0	2.3	2.8	3.4	4.0	4.6	5.2	5.8	6.3	6.8	7.3	7.8	8.2	8.7
16	11.5	8.8	6.8	5.1	3.8	2.7	2.0	1.7	1.9	2.4	3.0	3.6	4.1	4.7	5.2	5.7	6.2	6.7	7.1	7.6
18	12.4	9.7	7.6	6.0	4.6	3.4	2.5	1.8	1.6	1.7	2.2	2.7	3.2	3.8	4.3	4.8	5.3	5.7	6.2	6.6
20	13.2	10.5	8.4	6.8	5.4	4.2	3.2	2.4	1.8	1.5	1.6	2.0	2.5	3.0	3.5	4.0	4.5	4.9	5.4	5.8
22	13.9	11.3	9.2	7.5	6.1	4.9	3.9	3.0	2.3	1.8	1.5	1.7	2.0	2.4	2.9	3.3	3.8	4.2	4.6	5.1
24	14.6	12.0	9.9	8.2	6.8	5.6	4.6	3.6	2.9	2.3	1.8	1.6	1.7	2.0	2.4	2.8	3.2	3.6	4.0	4.4
26	15.3	12.6	10.5	8.9	7.5	6.2	5.2	4.3	3.5	2.8	2.3	1.9	1.8	1.8	2.1	2.4	2.8	3.1	3.5	3.9
28	15.9	13.2	11.2	9.5	8.1	6.9	5.8	4.9	4.1	3.4	2.8	2.3	2.0	1.9	2.0	2.2	2.4	2.8	3.1	3.5
30	16.5	13.8	11.7	10.0	8.6	7.4	6.4	5.4	4.6	3.9	3.3	2.8	2.4	2.2	2.1	2.1	2.3	2.5	2.8	3.1
32	17.0	14.3	12.3	10.6	9.2	8.0	6.9	6.0	5.2	4.4	3.8	3.3	2.8	2.5	2.3	2.2	2.3	2.4	2.6	2.9
34	17.5	14.8	12.8	11.1	9.7	8.5	7.4	6.5	5.7	5.0	4.3	3.8	3.3	2.9	2.6	2.5	2.4	2.4	2.6	2.8
36	18.0	15.3	13.2	11.6	10.2	9.0	7.9	7.0	6.2	5.4	4.8	4.2	3.7	3.3	3.0	2.8	2.6	2.6	2.6	2.7
38	18.4	15.8	13.7	12.0	10.6	9.4	8.4	7.4	6.6	5.9	5.2	4.7	4.1	3.7	3.4	3.1	2.9	2.8	2.7	2.8
40	18.9	16.2	14.1	12.5	11.1	9.9	8.8	7.9	7.1	6.3	5.7	5.1	4.6	4.1	3.7	3.4	3.2	3.0	2.9	2.9
42	19.3	16.6	14.5	12.9	11.5	10.3	9.2	8.3	7.5	6.7	6.1	5.5	5.0	4.5	4.1	3.8	3.5	3.3	3.1	3.1
44	19.7	17.0	14.9	13.3	11.9	10.7	9.6	8.7	7.9	7.1	6.5	5.9	5.3	4.9	4.5	4.1	3.8	3.6	3.4	3.3
46	20.0	17.4	15.3	13.6	12.2	11.0	10.0	9.1	8.2	7.5	6.8	6.2	5.7	5.2	4.8	4.4	4.1	3.8	3.6	3.5
48	20.4	17.7	15.7	14.0	12.6	11.4	10.4	9.4	8.6	7.9	7.2	6.6	6.1	5.6	5.1	4.8	4.4	4.1	3.9	3.7
50	20.7	18.1	16.0	14.4	13.0	11.8	10.7	9.8	9.0	8.2	7.6	7.0	6.4	5.9	5.5	5.1	4.7	4.4	4.2	4.0

Table 12

95-PERCENT CONFIDENCE INTERVALS
GROSS BOARD-FOOT VOLUME TABLE
WHITEWOODS W/O DF

DBH (INCHES)	TOTAL HEIGHT (FEET) 30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190
	(PERCENT)																
8	9.5	8.1	8.2	9.1	10.3	11.5	12.7	13.9	15.0	16.0	17.0	17.9	18.7	19.5	20.3	21.0	21.7
10	10.5	7.8	6.6	6.6	7.3	8.3	9.4	10.5	11.6	12.6	13.6	14.5	15.3	16.1	16.9	17.6	18.3
12	12.0	8.7	6.6	5.6	5.5	6.1	7.0	8.0	9.0	10.0	10.9	11.8	12.7	13.5	14.2	15.0	15.7
14	13.6	10.0	7.5	5.8	4.9	4.8	5.3	6.1	7.0	7.9	8.8	9.7	10.5	11.3	12.1	12.8	13.5
16	15.2	11.5	8.8	6.7	5.3	4.6	4.5	4.9	5.5	6.3	7.1	7.9	8.8	9.5	10.3	11.0	11.7
18	16.8	13.0	10.1	8.0	6.3	5.1	4.5	4.4	4.7	5.2	5.9	6.6	7.4	8.1	8.8	9.5	10.2
20	18.2	14.4	11.5	9.2	7.5	6.1	5.2	4.6	4.5	4.7	5.2	5.8	6.4	7.0	7.7	8.4	9.0
22	19.5	15.7	12.8	10.5	8.7	7.2	6.1	5.3	4.9	4.8	4.9	5.3	5.8	6.3	6.9	7.5	8.1
24	20.7	16.9	14.0	11.7	9.9	8.3	7.1	6.2	5.6	5.2	5.1	5.2	5.5	5.9	6.4	6.9	7.4
26	21.9	18.1	15.2	12.9	11.0	9.4	8.2	7.2	6.4	5.9	5.6	5.5	5.6	5.8	6.1	6.5	6.9
28	23.0	19.2	16.3	13.9	12.1	10.5	9.2	8.1	7.3	6.7	6.2	6.0	5.9	6.0	6.2	6.4	6.7
30	24.0	20.2	17.3	15.0	13.1	11.5	10.2	9.1	8.2	7.5	7.0	6.6	6.4	6.3	6.4	6.5	6.7
32	24.9	21.1	18.2	15.9	14.0	12.5	11.1	10.0	9.1	8.3	7.7	7.3	7.0	6.8	6.7	6.8	6.9
34	25.8	22.0	19.2	16.8	14.9	13.4	12.0	10.9	9.9	9.1	8.5	8.0	7.6	7.4	7.2	7.1	7.2
36	26.7	22.9	20.0	17.7	15.8	14.2	12.9	11.7	10.8	9.9	9.3	8.7	8.3	7.9	7.7	7.6	7.5
38	27.5	23.7	20.8	18.5	16.6	15.1	13.7	12.5	11.6	10.7	10.0	9.4	8.9	8.6	8.3	8.1	8.0
40	28.3	24.5	21.6	19.3	17.4	15.8	14.5	13.3	12.3	11.5	10.7	10.1	9.6	9.2	8.8	8.6	8.4

Table 13

NUMBER OF SAMPLE TREES
GROSS CUBIC-FOOT VOLUME TABLE
REDWOOD

DBH (INCHES)	TOTAL HEIGHT (FEET) 20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	230	TOTAL
	(NUMBER OF TREES)																						
4	1	1																					2
6	4																						4
8		3	6																				9
10				2	1																		3
12				2																			2
14				1	1	2	5	4	2	1													16
16					1		3	6		1													11
18							2	1	2		7	2											14
20							1	3	1	2	3	1											11
22									4	1	2	4	7										18
24										3	3	3	4	1	1								15
26								1			1	5	3	2	1	1							14
28												2	3				2						7
30												2	1	5	3	3	1	1					16
32												1	1	3	3		2						10
34														1	1	2							4
36													1	2	3	2		2					10
38																		1	1				2
40												1					2	1					4
42																3		2	1			1	7
44															1	1			1				3
46												1				1							2
48															1								1
50											1												1
52																1							1
TOTAL	5	4	6	5	3	2	11	15	9	8	17	22	20	14	14	14	7	7	3	0	0	1	187

Table 14

NUMBER OF SAMPLE TREES
GROSS CUBIC-FOOT VOLUME TABLE
DOUGLAS-FIR

DBH (INCHES)	TOTAL HEIGHT (FEET) 20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	200	210	220	TOTAL
	(NUMBER OF TREES)																					
4	8	13	1																			22
6		3	9	2																		14
8			6	2	1	1																10
10				1		2	1															4
12				1	1		1		1	1												5
14							2		3		1											6
16							1	1	1	2	2	3	1									11
18							1	1		2	4	5	3	2								18
20										2	1	4	6	5	1		1					20
22									1	2		5	6	1	2							17
24										1		5	8	4	1							19
26										1	3	5	2	5	1	2	1					20
28													2	4	1		1		1			9
30													1	2	1			1				5
32														2		1	2	2	1			8
34														2		1	1				1	5
36														1			1	1	1	2		6
38																		1				1
40																	1		1			2
42																						0
44																						0
46																						0
48																						0
50																			1			1
TOTAL	8	16	16	6	2	3	6	2	6	11	11	27	29	28	7	4	8	5	5	2	1	203

Table 15

NUMBER OF SAMPLE TREES
GROSS CUBIC-FOOT VOLUME TABLE
WHITEWOODS W/O DF

DBH (INCHES)	TOTAL HEIGHT (FEET) 20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	190	TOTAL
	(NUMBER OF TREES)																		
4	6	8																	14
6		6	3	1		1													11
8		1		3	1														5
10			1	1	2														4
12			1	1		2			2										6
14							1		1										2
16					2						1								3
18							1			1	1								3
20									1		1		1						3
22											1		1	1					3
24										1						1			2
26											1	1				1			3
28											1	2	1	1	2				7
30											1		1	1					3
32																	2		2
34													1						1
36																		1	1
38																			0
40														1					1
TOTAL	6	15	5	6	5	3	2	0	4	2	7	3	5	4	2	2	2	1	74