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PACIFIC SOUTHWEST Forest and Range Experiment Station

GROSS VOLUME TABLES FOR REDWOOD TREES in and near the Redwood National Park

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In 1968, Congress created the Redwood National Park, in northern California, from land that involved six major ownerships: Forest Service, State of California, and four private companies. Forest Service land included the "Purchase Unit" used in exchange for portions of the proposed National Park. The U.S. Bureau of Outdoor Recreation was assigned the responsibility of evaluating the timber and land used in exchange, and of negotiating a price paid private landowners for their holdings. Because existing volume tables for redwood¹ represented average conditions for the entire redwood forest type, their applicability for the select stands of the park area was not certain. The Pacific Southwest Forest and Range Experiment Station agreed to analyze available data, and to produce appropriate gross volume tables based on Spaulding and Humboldt log rules.²

METHODS

Measuring Tree Diameters and Heights

The collection of tree measurements was necessarily limited by the time and money available and the nature of the terrain and vegetation encountered. A two-man survey crew, led by Ralph C. Hall, used a Barr and Stroud optical dendrometer³ to measure diameters at selected intervals—usually a minimum of six—along the tree boles and total tree heights. The advantage of the dendrometer was that, from a single setting of the instrument, precise estimates of diameter (outside bark) and heights were possible at any point on the bole of the tree—provided the stem was clearly visible. Diameters at breast height were also measured with a diameter tape as a check against the dendrometer. A comparison of taped and dendrometer measures of a sample of 432 trees on all ownerships showed no significant differences between the two methods for the average tree, although

Abstract: To aid in appraising timber on lands acquired for the Redwood National Park, in northern California, local gross volume tables were developed for Spaulding and Humboldt log rules. This note includes the Spaulding table. The Humboldt table is 70 percent of the Spaulding table for each category listed. Readers are cautioned that the tables produced in this study do not represent the range of conditions throughout the redwood type.

Oxford: 174.7 *Sequoia sempervirens:* 524.315: U681.3.

Retrieval Terms: forestry: *Sequoia sempervirens:* volume tables: Spaulding Log Rule: Humboldt Log Rule: Redwood National Park.

individual tree measurements varied. The crew took advantage of openings, recent road rights-of-way, and recently cut patches to find trees that could be readily seen and measured. Although this procedure precluded them from obtaining a strictly random sample, they did measure a sample of trees on all ownerships. Trees were carefully selected to represent the full range of merchantable diameters from 12 inches to more than 200 inches as well as the different stand conditions encountered. The professional crew worked 10 weeks and measured about 700 trees.

Constructing Volume Tables

Measurement technique specialists at the Experiment Station used the STX Program⁴ to compute tree diameters and heights from dendrometer measurements provided. Diameters outside bark were converted to diameter inside bark from the 256 bark-thickness measurements provided by the field crews. Diameters at regular 20-foot log lengths were then determined by a special computer program; Spaulding volumes were entered for each log within a tree and totaled for each tree. Volumes were determined from a 2-foot stump to a 12-inch top diameter (inside bark).

These basic data were then used to develop a multivariate regression model that would give gross volumes, by logs, for trees from 14 to 196 inches d.b.h. and from 1 to 16 logs in height. The huge range in tree sizes and volumes required a rather complex analysis before a suitable model was developed. Six basic regression models were evaluated, and on the basis of best mathematical fit, the final regression model was chosen.

Computer log volumes were adjusted slightly to insure that they added to correct tree volume. Furthermore, minor discrepancies were adjusted in log volumes to remove irregularities and inconsistencies, but total tree volumes were not affected. For example, top log (12 inches d.i.b.) was forced to equal 10 on the log scale as shown in the table. Volumes by individual logs may not exactly match

Spaulding log volumes, but the volumes by trees accurately reflect the basic field data.

The Humboldt volume table was developed through a simple adjustment of multiplying Spaulding volumes by 0.7.

In the analysis, separate regression equations were computed for each ownership involved and for various stand conditions encountered. We found no significant differences in tree volumes by d.b.h. and height on the different ownership or stand divisions. Therefore, all the data were lumped to produce the present volume tables.

COMPARISON WITH EARLIER TABLES

We recognize that the volume tables produced in this study are derived from a localized data base. They do not represent the range of conditions throughout the redwood type. Consequently their application elsewhere will require extensive checking against representative data.

Only the Spaulding table is reproduced in this note (table 1). The Humboldt table is simply 70 percent of the Spaulding table for each category listed. The Humboldt volume table is available on request to the Director, Pacific Southwest Forest and Range Experiment Station, P.O. Box 245, Berkeley, California 94701.

NOTES

¹Hallin, William. *Volume and taper tables for old growth coastal redwood*. 1941. (Unpublished report on file at Pacific Southwest Forest and Range Experiment Station, Berkeley, California.)

²Thanks are due the consulting firm of Hammon, Jensen, and Wallen for supplying basic tree data and resources for analysis of data.

³Grosenbaugh, L. R. *Optical dendrometers for out-of-reach diameters: a conspectus and some new theory*. Forest Sci. Monogr. 47 p., 1963.

⁴Grosenbaugh, L. R. *STX-Fortran 4 program for estimates of tree populations from 3P sample-tree-measurements*. U.S. Forest Serv. Res. Paper PSW-13, Pacific SW. Forest & Range Exp. Sta., Berkeley, Calif., 49 p., illus. 1967.

The Authors

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Table 1—Gross volume table for old-growth redwood (*Sequoia sempervirens*).
 Volumes, by logs and totaled for the tree, are based on the Spaulding log rule. All
 entries above the solid line have been extrapolated beyond actual field data.

D.b.h.	Height in logs	Log position																Total volume
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Tens of board feet																		
14	1	10																10
16	1	10																10
	2	13	10															23
18	1	10																10
	2	14	10															24
	3	20	14	10														44
20	1	10																10
	2	14	10															24
	3	21	14	10														45
22	1	10																10
	2	15	10															25
	3	22	15	10														47
24	1	10																10
	2	15	10															25
	3	24	16	10														50
26	1	10																10
	2	16	10															26
	3	24	16	10														50
	4	32	25	17	10													84
28	1	10																10
	2	17	10															27
	3	25	18	10														53
	4	35	26	18	10													89
30	1	10																10
	2	19	10															29
	3	25	18	10														53
	4	33	26	18	10													87
	5	42	34	26	19	10												131
32	2	25	10															35
	3	29	20	10														59
	4	36	27	19	10													92
	5	44	36	27	18	10												135
	6	53	44	35	27	18	10											187
34	2	27	10															37
	3	31	21	10														62
	4	39	29	20	10													98
	5	48	38	29	19	10												144
	6	57	48	38	29	19	10											201
36	2	33	10															43
	3	35	23	10														68
	4	41	31	21	10													103
	5	49	40	30	20	10												149
	6	58	48	39	29	20	10											204
	7	67	57	48	38	29	20	10										269
38	3	40	26	10														76
	4	48	35	21	10													114
	5	57	44	32	20	10												163
	6	66	54	43	31	19	10											223
	7	76	64	53	42	30	19	10										294
	8	85	75	63	52	41	30	19	10									375
40	4	58	43	27	10													138
	5	65	51	35	21	10												182
	6	71	59	45	32	19	10											236
	7	79	67	54	42	29	18	10										299
	8	86	75	64	52	40	28	17	10									372
	9	94	84	73	62	50	38	27	17	10								455
42	4	63	46	28	10													147
	5	70	54	38	22	10												194
	6	77	63	48	34	20	10											252
	7	84	72	58	45	31	19	10										319
	8	93	81	68	56	42	30	18	10									398
	9	101	90	78	66	53	41	29	18	10								486
44	4	67	49	31	10													157
	5	75	58	41	23	10												207
	6	82	68	52	36	21	10											269
	7	91	77	62	48	33	20	10										341
	8	100	87	73	59	45	32	19	10									425
46	9	108	97	84	70	57	44	30	19	10								519
	4	72	53	33	10													168
	5	81	62	43	25	10												221
	6	89	72	55	39	22	10											287
	7	97	82	67	51	36	21	10										364
48	8	107	93	78	63	48	34	20	10									453
	9	116	103	89	75	61	47	32	20	10								553
	5	96	74	52	30	10												262
	6	100	81	62	42	23	10											318
	7	104	89	71	54	36	20	10										384
	8	110	96	80	64	49	33	19	10									461
	9	116	104	89	74	60	45	31	18	10								547
	10	123	112	98	84	70	56	43	29	18	10							643

Table 1—Gross volume table for old-growth redwood (*Sequoia sempervirens*). Volumes, by logs and totaled for the tree, are based on the Spaulding log rule. All entries above the solid line have been extrapolated beyond actual field data, continued.

D.b.h.	Height in logs	Log Position																Total volume							
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16								
50	5	101	79	56	33	10	Tens of board feet										279								
	6	107	87	66	44	25	10											339							
	7	112	94	76	57	39	21	10											409						
	8	117	102	86	69	52	35	20	10											491					
	9	124	111	95	79	64	48	33	19	10											583				
	10	132	119	105	90	75	60	45	31	19	10											686			
52	5	101	79	56	33	10											279								
	6	111	91	68	46	25	10											351							
	7	120	102	81	61	41	22	10											437						
	8	129	112	94	75	56	38	21	10											535					
	9	139	124	106	89	71	53	35	20	10											647				
	10	150	135	119	102	85	67	51	34	20	10											773			
54	11	161	147	132	115	98	82	65	49	33	19	10											911		
	12	172	159	144	128	112	96	80	63	47	32	19	10											1062	
	5	108	84	60	35	10											297								
	6	118	96	73	49	27	10											373							
	7	128	108	86	65	43	24	10											464						
	8	137	120	100	80	59	40	22	10											568					
56	9	148	132	113	94	75	56	37	21	10											686				
	10	159	144	126	108	90	71	53	36	21	10											818			
	11	171	156	139	122	104	87	69	51	35	20	10											964		
	12	182	169	153	136	118	101	84	67	50	34	20	10											1124	
	5	115	90	63	38	10											316								
	6	126	103	78	52	28	10											397							
58	7	136	114	92	69	46	25	10											492						
	8	146	127	106	85	63	42	23	10											602					
	9	157	139	120	100	79	59	40	22	10											726				
	10	169	152	134	114	95	76	56	38	21	10											865			
	11	181	165	147	129	110	92	73	54	37	21	10											1019		
	12	193	178	161	144	125	107	89	71	53	36	21	10											1188	
60	5	122	96	68	41	10											337								
	6	134	109	82	56	30	10											421							
	7	144	122	97	73	49	26	10											521						
	8	155	135	112	90	67	44	24	10											637					
	9	166	148	127	105	84	62	42	23	10											767				
	10	179	161	141	121	100	80	60	40	22	10											914			
62	11	191	174	156	136	116	97	77	57	39	22	10											1075		
	12	204	188	170	151	132	113	94	74	56	38	22	10											1252	
	5	130	102	73	43	10											358								
	6	143	116	87	59	32	10											447							
	7	153	129	103	77	52	28	10											552						
	8	164	142	119	95	71	47	25	10											673					
64	9	176	156	134	111	89	66	44	24	10											810				
	10	188	170	149	128	106	84	63	42	23	10											963			
	11	201	184	164	143	123	102	81	60	41	23	10											1132		
	12	215	198	179	159	139	119	99	78	59	39	23	10											1317	
	5	139	108	77	47	10											381								
	6	151	123	93	63	34	10											474							
66	7	162	136	109	82	55	29	10											583						
	8	173	150	125	100	75	50	27	10											710					
	9	185	164	141	117	94	70	47	25	10											853				
	10	198	179	157	134	111	89	66	44	25	10											1013			
	11	212	193	173	151	129	107	85	63	43	24	10											1190		
	12	226	208	188	167	146	125	104	82	62	41	24	10											1383	
68	5	147	115	83	50	10											405								
	6	160	130	99	67	36	10											502							
	7	171	144	115	87	58	31	10											616						
	8	183	158	132	106	79	52	28	10											748					
	9	195	173	149	123	98	73	49	27	10											897				
	10	208	188	165	141	117	93	69	47	26	10											1064			
70	11	223	203	181	158	135	113	89	67	45	25	10											1249		
	12	237	218	197	175	153	131	109	87	65	44	25	10											1451	
	5	156	123	88	53	10											430								
	6	170	137	104	71	39	10											531							
	7	181	152	122	91	61	33	10											650						
	8	192	167	139	111	83	55	30	10											787					
72	9	205	182	156	130	103	77	52	28	10											943				
	10	219	197	173	148	123	98	73	49	27	10											1117			
	11	233	213	190	166	142	118	94	70	47	26	10											1309		
	12	248	228	207	184	160	137	114	91	68	46	26	10											1519	
	6	179	147	113	79	45	10											573							
	7	193	163	130	98	66	35	10											695						
74	8	205	178	148	118	88	58	30	10											835					
	9	218	193	165	137	109	81	53	28	10											994				
	10	231	208	182	156	129	102	76	50	27	10											1171			
	11	245	224	200	174	149	123	97	72	48	26	10											1368		
	12	260	240	217	192	168	143	118	94	69	46	26	10											1583	
	6	188	155	119	83	48	10											603							
76	7	203	171	137	103	69	37	10											730						
	8	216	187	156	124	92	60	32	10											877					
	9	229	203	174	144	114	85	55	29	10											1043				
	10	243	219	192	164	136	107	79	52	27	10											1229			
	11	258	236	210	183	156	129	102	75	49	26	10											1434		
	12	274	253	228	202	176	150	124	98	72	47	26	10											1660	
78	13	290	269	246	221	196	171	145	120	94	70	46	26	10											1904

Table 1—Gross volume table for old-growth redwood (*Sequoia sempervirens*). Volumes, by logs and totaled for the tree, are based on the Spaulding log rule. All entries above the solid line have been extrapolated beyond actual field data, continued.

D.b.h.	Height in logs	Log position																Total volume
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
72		Tens of board feet																
	6	201	164	127	90	52	10											644
	7	213	180	145	109	75	41	10										773
	8	225	195	163	130	98	66	36	10									923
	9	238	210	180	150	120	90	61	33	10								1092
	10	251	226	198	170	141	113	84	57	31	10							1281
	11	266	242	216	189	162	134	107	80	54	30	10						1490
	12	281	259	234	208	182	155	129	103	77	52	29	10					1719
74	13	298	275	251	226	201	176	151	125	100	75	51	29	10				1968
	14	314	293	270	245	221	196	171	147	122	97	73	50	28	10			2237
	7	226	190	153	116	78	43	10										816
	8	237	205	172	138	103	69	37	10									971
	9	250	220	189	158	126	95	64	34	10								1146
	10	263	236	207	178	148	118	89	60	33	10							1342
	11	279	253	226	197	169	141	112	84	57	31	10						1559
	12	294	270	244	217	190	162	135	108	81	55	30	10					1796
76	13	311	288	262	236	210	184	157	131	104	78	53	30	10				2054
	14	328	306	281	256	230	204	179	153	127	102	76	52	29	10			2333
	7	236	199	160	122	83	45	10										855
	8	248	215	179	144	108	73	39	10									1016
	9	262	231	198	165	132	99	66	36	10								1199
	10	276	247	217	186	155	123	92	62	34	10							1402
	11	291	265	236	206	177	147	117	88	59	32	10						1628
	12	308	282	255	227	198	169	141	112	84	57	31	10					1874
78	13	325	301	274	247	219	192	164	136	108	81	55	31	10				2143
	14	343	319	294	267	240	213	186	159	132	106	79	54	30	10			2432
	7	246	208	168	128	88	48	10										896
	8	260	225	188	150	113	76	41	10									1063
	9	273	242	207	173	138	103	69	37	10								1252
	10	288	259	227	194	161	129	96	64	35	10							1463
	11	304	277	246	216	184	153	122	91	61	33	10						1697
	12	321	295	266	236	207	177	147	117	87	58	32	10					1953
80	13	339	314	286	258	229	200	171	141	113	84	56	31	10				2232
	14	357	333	306	279	251	222	194	166	137	109	82	55	31	10			2532
	7	257	217	176	134	92	51	10										937
	8	271	235	196	157	118	80	43	10									1110
	9	286	252	217	180	144	107	72	38	10								1306
	10	301	270	237	203	168	134	100	67	36	10							1526
	11	318	289	257	225	192	159	127	94	63	34	10						1768
	12	335	307	278	247	215	184	153	121	90	60	33	10					2033
82	13	353	327	298	268	238	208	178	147	117	87	58	32	10				2321
	14	372	346	319	290	261	231	202	172	143	113	85	57	32	10			2633
	7	268	227	184	140	97	55	10										981
	8	283	246	205	164	124	83	45	10									1160
	9	298	263	226	188	150	112	75	40	10								1362
	10	314	282	247	211	175	140	104	69	37	10							1589
	11	331	300	268	234	200	166	132	98	65	35	10						1839
	12	348	320	289	256	224	191	159	126	94	63	34	10					2114
84	13	367	340	310	279	248	216	184	153	121	90	61	33	10				2412
	14	387	360	331	301	271	240	210	179	148	118	88	59	32	10			2734
	7	279	237	192	147	102	58	10										1025
	8	295	256	214	172	129	87	47	10									1210
	9	311	274	236	196	156	117	78	41	10								1419
	10	327	293	257	220	183	145	108	72	38	10							1653
	11	344	313	279	243	208	172	137	102	68	36	10						1912
	12	362	332	300	266	233	199	165	131	97	65	35	10					2195
86	13	381	353	322	290	257	224	191	158	126	94	63	34	10				2503
	14	402	374	344	313	281	249	217	185	154	122	91	61	33	10			2836
	7	291	247	200	154	108	61	10										1071
	8	308	267	223	179	135	91	49	10									1262
	9	323	286	245	204	163	122	81	43	10								1477
	10	340	305	267	229	190	151	112	75	40	10							1719
	11	358	325	289	253	216	179	142	106	70	37	10						1985
	12	376	345	312	277	241	206	171	136	101	67	36	10					2278
88	13	396	366	334	301	267	232	198	164	130	97	65	35	10				2595
	14	416	388	357	324	292	258	225	192	159	126	94	63	34	10			2938
	7	303	257	209	161	113	65	10										1118
	8	320	278	232	187	141	95	52	10									1315
	9	336	297	255	212	170	127	85	45	10								1537
	10	353	317	278	237	197	157	117	78	41	10							1785
	11	371	337	300	262	224	186	148	110	73	39	10						2060
	12	390	358	323	287	250	214	177	141	105	69	37	10					2361
90	13	410	380	346	311	276	241	206	170	135	100	67	36	10				2688
	14	431	401	369	336	302	267	233	199	165	131	97	65	35	10			3041
	7	316	268	218	168	118	69	10										1167
	8	333	289	242	194	147	100	54	10									1369
	9	350	309	265	221	176	132	88	47	10								1598
	10	366	329	288	247	205	163	121	81	43	10							1853
	11	385	349	311	272	233	193	153	114	76	40	10						2136
	12	404	371	335	297	259	221	183	146	108	72	39	10					2445
	13	424	393	358	322	286	249	213	176	140	104	69	37	10				2781
	14	446	415	382	347	312	277	241	206	170	135	101	67	36	10			3145

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D.b.h.	Height in logs	Log position																Total volume
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Tens of board feet																		
92	7	328	279	228	176	124	72	10										1217
	8	346	300	252	202	153	104	57	10									1424
	9	363	321	275	229	183	137	92	49	10								1659
	10	380	341	299	256	212	169	126	84	45	10							1922
	11	399	362	322	282	241	200	159	118	78	41	10						2212
	12	418	384	346	307	268	229	190	151	112	75	40	10					2530
	13	439	406	370	333	296	258	220	182	145	107	72	38	10				2876
94	14	461	429	394	359	322	286	249	213	176	140	104	69	37	10			3249
	7	339	289	237	184	131	78	10										1268
	8	360	312	262	210	159	109	59	10									1481
	9	376	332	286	238	190	143	96	51	10								1722
	10	394	353	310	265	220	176	131	87	46	10							1992
	11	412	375	334	292	249	207	165	122	81	43	10						2290
	12	432	397	358	318	277	237	197	156	116	77	41	10					2616
96	13	454	419	382	344	305	266	227	189	150	111	74	40	10				2971
	14	476	443	407	370	333	295	257	219	182	144	107	72	39	10			3354
	7	366	311	255	197	141	83	10										1363
	8	379	328	275	223	170	117	65	10									1567
	9	391	345	297	248	200	151	102	55	10								1799
	10	405	362	318	273	228	182	137	93	50	10							2058
	11	420	380	339	297	255	212	170	128	86	47	10						2344
98	12	437	400	361	321	281	241	200	159	121	82	44	10					2657
	13	455	420	383	345	307	268	230	191	153	115	78	43	10				2998
	14	475	441	406	369	332	295	258	221	184	148	111	75	41	10			3366
	15	496	463	428	393	359	322	286	250	214	178	143	107	73	40	10		3761
	7	379	322	264	205	147	87	10										1414
	8	393	340	286	231	176	122	67	10									1625
	9	405	358	307	257	207	156	106	57	10								1863
100	10	419	375	329	282	236	189	142	96	52	10							2130
	11	435	394	351	307	263	220	176	132	89	48	10						2425
	12	452	414	373	332	290	249	207	166	125	84	46	10					2748
	13	471	434	396	357	317	277	238	198	158	119	80	44	10				3099
	14	491	456	419	382	343	305	267	229	190	152	114	78	42	10			3478
	15	512	479	443	406	370	333	295	258	221	184	147	111	75	41	10		3885
	7	392	334	274	213	153	91	10										1467
102	8	407	353	296	239	183	126	70	10									1684
	9	420	370	318	266	214	162	110	59	10								1929
	10	434	388	341	292	244	196	147	99	53	10							2204
	11	450	407	363	318	272	227	182	137	92	49	10						2507
	12	468	428	386	343	300	257	214	171	129	87	47	10					2840
	13	487	449	409	369	327	287	245	204	163	123	83	45	10				3201
	14	507	471	433	394	355	315	275	236	196	157	118	80	44	10			3591
104	15	529	494	457	420	381	343	305	267	228	190	152	114	78	42	10		4010
	7	406	346	284	221	159	95	10										1521
	8	421	365	307	248	189	131	73	10									1744
	9	434	383	329	276	221	167	114	62	10								1996
	10	449	402	352	302	252	202	152	103	55	10							2279
	11	465	421	375	328	282	235	188	141	95	51	10						2591
	12	483	442	398	354	310	266	221	177	133	90	48	10					2932
106	13	503	463	422	380	338	296	253	211	169	127	86	46	10				3304
	14	524	486	447	406	366	325	284	243	203	162	122	82	45	10			3705
	15	546	509	472	433	393	354	314	275	235	196	157	118	80	44	10		4136
	7	435	370	304	238	172	104	10										1633
	8	451	390	328	266	203	141	79	10									1868
	9	464	409	352	295	237	179	122	66	10								2134
	10	478	428	376	322	269	216	163	110	59	10							2431
108	11	495	448	400	350	300	250	200	151	102	54	10						2760
	12	514	470	424	377	330	283	235	188	142	96	51	10					3120
	13	534	493	449	404	359	314	269	224	180	135	91	49	10				3511
	14	556	516	474	432	389	345	302	259	215	172	129	88	47	10			3934
	15	579	541	500	459	417	376	334	292	250	208	166	125	85	46	10		4388
	7	420	358	294	230	165	99	10										1576
	8	436	377	317	257	196	136	76	10									1805
110	9	449	396	341	285	229	173	118	64	10								2065
	10	463	415	364	312	261	209	157	106	57	10							2354
	11	480	435	387	339	291	242	194	146	98	53	10						2675
	12	498	456	411	366	320	274	228	183	137	93	50	10					3026
	13	518	478	435	392	349	305	261	218	174	131	88	48	10				3407
	14	540	501	460	419	377	335	293	251	209	167	126	85	46	10			3819
	15	563	525	486	446	406	365	324	283	243	202	161	121	82	45	10		4262
108	7	449	383	315	247	179	108	10										1691
	8	466	403	339	275	211	146	82	10									1932
	9	479	422	363	304	245	186	127	69	10								2205
	10	494	442	387	333	278	223	168	114	61	10							2510
	11	511	462	412	361	309	258	207	155	105	56	10						2846
	12	530	484	437	388	340	291	243	194	146	99	53	10					3215
	13	550	507	462	416	370	324	277	231	185	139	94	51	10				3616
110	14	573	531	488	444	400	355	311	266	222	177	133	90	49	10			4049
	15	596	556	515	472	430	387	343	300	257	214	171	129	87	48	10		4515
	7	464	396	326	256	186	113	10										1751
	8	481	416	351	284	218	152	85	10									1997
	9	495	436	375	314	253	192	131	71	10								2277
	10	509	455	400	343	287	230	174	118	63	10							2589
	11	526	476	424	372	319	266	213	161	109	58	10						2934
110	12	545	498	450	400	350	300	250	200	151	102	55	10					3311
	13	566	522	475	428	381	333	286	238	191	143	97	52	10				3722
	14	589	546	502	457	411	365	320	274	228	183	137	93	50	10			4165
	15	613	572	529	485	441	397	353	309	265	220	176	133	90	49	10		4642

Table 1—Gross volume table for old-growth redwood (*Sequoia sempervirens*).
 Volumes, by logs and totaled for the tree, are based on the Spaulding log rule. All
 entries above the solid line have been extrapolated beyond actual field data,
 continued.

D.b.h.	Height in logs	Log position																Total volume
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Tens of board feet																		
112	7	479	409	337	266	193	118	10										1812
	8	496	430	362	294	226	157	89	10									2064
	9	510	450	387	324	261	198	136	74	10								2350
	10	525	469	412	354	296	237	179	122	65	10							2669
	11	542	490	437	383	328	274	220	166	112	60	10						3022
	12	561	513	463	412	360	309	258	206	155	105	56	10					3408
	13	582	536	489	440	391	343	294	245	196	148	100	54	10				3828
114	14	605	561	516	469	422	375	329	282	235	188	142	96	52	10			4282
	15	629	587	543	498	453	408	363	317	272	227	182	137	93	50	10		4769
	7	495	422	348	275	201	123	10										1874
	8	512	444	374	304	233	163	92	10									2132
	9	526	463	399	334	270	205	141	76	10								2424
	10	540	483	424	364	305	245	185	126	68	10							2750
	11	558	504	449	394	338	282	227	171	116	62	10						3111
116	12	577	527	476	423	370	318	265	213	160	109	58	10					3506
	13	599	551	502	453	402	352	302	252	202	152	103	56	10				3936
	14	622	576	529	482	434	386	338	289	241	194	146	99	53	10			4399
	15	646	603	557	511	465	419	372	326	279	233	187	141	96	52	10		4897
	7	511	436	360	285	208	128	10										1938
	8	528	458	386	313	241	169	96	10									2201
	9	542	477	411	345	278	212	146	79	10								2500
118	10	557	497	437	375	314	252	191	130	70	10							2833
	11	574	519	462	405	348	290	233	176	120	64	10						3201
	12	593	542	488	435	381	327	273	219	165	112	60	10					3605
	13	615	566	516	464	413	362	310	259	208	157	106	57	10				4043
	14	638	592	543	494	445	396	347	298	248	199	150	102	55	10			4517
	15	663	618	572	524	477	430	382	335	287	239	192	145	99	53	10		5026
	7	527	450	372	294	216	134	10										2003
120	8	544	472	398	324	249	175	100	10									2272
	9	558	492	423	355	287	219	150	82	10								2576
	10	573	511	449	386	323	260	197	135	73	10							2917
	11	590	533	475	416	358	299	240	182	124	66	10						3293
	12	609	556	502	446	391	336	281	225	170	116	62	10					3704
	13	631	581	529	477	424	371	319	266	214	161	110	59	10				4152
	14	655	606	557	507	457	406	356	305	255	205	155	105	57	10			4636
122	15	680	633	586	538	489	440	392	343	295	246	197	149	102	55	10		5155
	7	532	453	374	296	218	134	10										2017
	8	550	476	402	328	255	181	104	10									2306
	9	567	498	430	362	294	226	158	88	10								2633
	10	584	521	458	395	332	269	207	144	79	10							2999
	11	605	545	486	428	369	310	251	193	134	73	10						3404
	12	628	572	516	460	404	349	293	238	182	126	69	10					3847
124	13	653	599	546	493	440	386	333	280	227	174	121	66	10				4328
	14	681	628	577	525	474	423	372	321	270	219	168	116	64	10			4848
	15	709	658	608	559	509	460	410	361	311	262	212	163	113	62	10		5407
	16	739	689	641	592	544	496	448	400	351	303	255	207	159	110	60	10	6004
	8	566	486	409	332	255	179	99	10									2336
	9	577	505	436	368	299	231	161	89	10								2676
	10	594	527	464	401	338	276	213	149	83	10							3055
126	11	615	553	493	434	376	317	259	200	140	78	10						3475
	12	639	580	523	468	412	357	302	246	190	134	74	10					3935
	13	666	609	554	501	448	395	342	290	237	183	129	71	10				4435
	14	695	639	586	535	484	433	382	331	280	229	177	124	69	10			4974
	15	725	671	619	569	519	470	421	371	322	273	223	173	121	67	10		5554
	16	756	703	653	604	555	507	459	411	363	315	266	218	169	119	66	10	6174
	8	583	501	421	342	263	184	102	10									2406
128	9	594	520	448	378	308	237	166	92	10								2753
	10	610	542	477	412	348	283	219	154	85	10							3140
	11	632	567	506	446	386	326	266	206	144	80	10						3569
	12	656	595	537	479	423	366	310	253	196	137	76	10					4038
	13	683	624	568	514	459	405	351	297	243	188	132	74	10				4548
	14	712	655	601	548	496	444	391	339	287	235	182	128	71	10			5099
	15	742	687	634	583	532	482	431	381	330	279	229	177	124	69	10		5640
130	16	774	720	668	618	568	519	470	421	372	322	273	224	173	122	68	10	6322
	8	600	515	434	353	271	190	105	10									2478
	9	610	534	461	389	317	244	171	95	10								2831
	10	627	557	490	424	357	291	225	158	88	10							3227
	11	648	582	519	458	396	335	273	211	149	82	10						3663
	12	673	610	550	492	434	376	318	259	201	141	78	10					4142
	13	700	640	582	526	471	415	360	305	249	193	136	75	10				4662
132	14	729	671	615	561	508	454	401	348	294	241	187	131	73	10			5223
	15	760	703	649	597	545	493	441	390	338	286	234	182	128	71	10		5827
	16	792	737	684	632	582	531	481	431	380	330	280	229	178	125	69	10	6471
	8	618	530	446	363	280	196	108	10									2551
	9	628	549	474	400	325	251	176	98	10								2911
	10	644	571	503	435	367	299	232	163	90	10							3314
	11	665	597	533	469	406	344	280	217	153	85	10						3759
134	12	690	625	564	504	445	385	326	266	206	145	81	10					4247
	13	717	655	596	539	482	426	369	312	256	198	139	78	10				4777
	14	746	686	630	574	520	465	411	356	302	247	192	135	75	10			5349
	15	778	720	664	610	557	504	452	399	346	293	240	187	131	73	10		5964
	16	810	753	699	647	595	543	492	441	390	338	287	235	182	128	71	10	6621

Table 1—Gross volume table for old-growth redwood (*Sequoia sempervirens*).
Volumes, by logs and totaled for the tree, are based on the Spaulding log rule. All
entries above the solid line have been extrapolated beyond actual field data,
continued.

D.b.h.	Height in logs	Log position																Total volume
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
130		Tens of board feet																
	8	635	545	459	374	288	202	112	10									2625
	9	645	564	487	411	335	258	181	101	10								2992
	10	661	587	516	446	377	308	238	167	93	10							3403
	11	682	612	546	481	417	353	288	223	157	87	10						3856
	12	707	640	578	516	455	395	334	273	212	149	83	10					4352
	13	734	670	610	552	494	436	378	320	262	203	143	80	10				4892
	14	764	702	644	588	532	476	420	365	309	253	197	138	77	10			5475
132	15	795	736	679	624	570	516	462	408	354	301	246	191	134	75	10		6101
	16	828	770	715	661	608	555	503	451	398	346	293	241	187	131	73	10	6770
	8	654	561	473	384	296	208	115	10									2701
	9	663	579	500	422	344	266	187	104	10								3075
	10	678	601	529	458	387	316	245	172	96	10							3492
	11	699	627	560	493	427	362	296	229	161	90	10						3954
	12	724	656	591	529	467	404	342	280	218	153	85	10					4459
	13	751	686	624	564	505	446	387	328	269	209	147	82	10				5008
134	14	781	718	659	601	544	487	430	373	316	259	202	142	79	10			5601
	15	813	752	694	638	582	527	472	417	363	308	252	196	138	77	10		6239
	16	847	787	730	675	621	567	514	461	407	354	300	246	191	135	75	10	6920
	8	672	577	486	395	305	214	119	10									2778
	9	680	595	513	433	354	274	192	107	10								3158
	10	695	617	543	470	397	324	251	177	99	10							3583
	11	716	643	573	505	438	371	303	235	166	92	10						4052
	12	741	671	605	541	478	414	351	287	223	157	88	10					4566
136	13	768	702	639	577	517	456	396	336	275	214	151	84	10				5125
	14	799	734	673	614	556	498	440	382	324	266	206	146	81	10			5729
	15	831	768	708	651	595	539	483	427	371	315	258	201	141	79	10		6377
	16	864	803	745	689	634	580	525	471	416	362	307	252	196	138	77	10	7069
	8	690	593	499	407	314	221	123	10									2857
	9	698	610	527	445	364	281	198	110	10								3243
	10	713	632	556	482	407	333	258	182	102	10							3675
	11	733	658	587	517	449	380	311	242	170	95	10						4152
138	12	758	687	619	554	489	424	359	294	229	162	90	10					4675
	13	786	717	653	590	529	467	405	344	282	219	155	86	10				5243
	14	816	750	687	627	568	509	450	391	332	272	212	149	83	10			5856
	15	849	784	724	665	607	550	493	436	379	322	264	206	145	81	10		6515
	16	883	820	760	703	647	591	536	481	425	370	314	258	201	141	79	10	7219
	8	710	609	513	418	323	227	127	10									2937
	9	716	626	541	457	373	289	204	113	10								3329
	10	731	648	570	493	418	342	265	187	104	10							3768
140	11	751	673	601	530	459	389	319	248	175	98	10						4253
	12	775	702	633	566	500	434	368	302	235	166	93	10					4784
	13	803	733	667	603	540	477	414	352	289	225	159	89	10				5361
	14	834	766	702	640	580	520	460	399	339	279	217	153	85	10			5984
	15	866	800	738	679	620	562	504	445	387	329	271	211	149	83	10		6654
	16	901	836	776	717	660	603	547	491	434	378	321	264	206	145	81	10	7370
	8	729	625	527	430	332	234	131	10									3018
	9	734	642	555	469	383	297	210	117	10								3417
142	10	748	663	584	506	428	350	272	193	108	10							3862
	11	769	689	615	542	470	399	327	254	180	100	10						4355
	12	793	718	647	579	511	444	377	309	241	170	95	10					4894
	13	821	749	681	616	552	488	424	360	295	230	163	91	10				5480
	14	851	782	717	654	592	531	469	408	347	285	222	157	88	10			6113
	15	884	816	753	692	633	573	514	455	396	336	277	216	153	85	10		6793
	16	919	853	791	731	673	615	558	501	443	386	328	270	210	149	83	10	7520
	8	748	642	541	442	342	241	135	10									3101
144	9	753	658	568	481	393	305	216	121	10								3505
	10	767	679	598	518	439	359	279	198	111	10							3958
	11	786	704	629	555	481	408	335	261	185	103	10						4457
	12	810	733	661	592	523	454	385	317	247	175	98	10					5005
	13	839	764	696	629	564	499	433	368	302	236	167	93	10				5600
	14	869	798	731	667	604	542	479	417	354	292	228	161	90	10			6242
	15	902	833	768	706	645	585	525	464	404	344	283	221	156	87	10		6933
	16	937	869	806	745	686	628	569	511	452	394	335	276	215	152	85	10	7670
146	8	767	659	556	454	351	248	139	10									3184
	9	772	674	583	493	403	314	222	124	10								3595
	10	785	695	612	531	449	368	287	203	114	10							4054
	11	804	720	643	567	492	418	343	268	190	106	10						4561
	12	828	749	676	605	534	464	394	324	253	180	100	10					5117
	13	856	780	710	642	575	509	443	376	309	242	172	96	10				5720
	14	887	813	746	681	617	553	489	426	362	298	233	165	92	10			6372
	15	920	849	783	720	658	596	535	474	413	351	289	226	160	89	10		7073
148	16	955	886	821	759	699	640	580	521	461	402	342	282	220	156	87	10	7821
	8	786	676	570	466	361	256	143	10									3268
	9	791	691	597	505	414	322	228	128	10								3686
	10	803	712	626	543	460	378	294	209	117	10							4152
	11	822	736	657	580	504	428	351	274	195	109	10						4666
	12	846	765	690	617	546	474	403	332	259	184	103	10					5229
	13	873	796	724	655	587	520	452	385	317	248	176	98	10				5841
	14	905	830	760	694	629	564	499	435	370	305	239	169	94	10			6503
150	15	938	865	798	733	670	608	546	483	421	359	296	231	164	91	10		7213
	16	973	902	836	773	712	651	591	531	470	410	350	288	226	160	89	10	7972

Table 1—Gross volume table for old-growth redwood (*Sequoia sempervirens*).
 Volumes, by logs and totaled for the tree, are based on the Spaulding log rule. All
 entries above the solid line have been extrapolated beyond actual field data,
 continued.

D.b.h.	Height in logs	Log position																Total volume
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Tens of board feet																		
148	8	805	693	585	478	371	263	148	10									3353
	9	810	708	612	518	424	330	235	132	10								3779
	10	822	727	640	556	471	387	302	215	120	10							4250
	11	840	753	672	593	515	437	359	281	200	112	10						4772
	12	864	781	704	630	557	485	412	339	266	189	106						5343
	13	891	812	739	668	599	530	462	393	324	254	180	101	10				5963
	14	922	846	775	707	641	575	509	444	378	312	244	174	97	10			6634
150	15	955	881	812	747	683	619	556	493	430	366	302	237	168	94	10		7353
	16	991	918	851	787	725	663	602	541	480	418	357	294	231	164	91	10	8123
	8	825	711	600	491	381	271	152	10									3441
	9	830	724	626	531	435	339	241	136	10								3872
152	10	841	744	655	568	482	396	309	221	124	10							4350
	11	858	768	686	606	527	447	368	288	205	115	10						4878
	12	882	797	718	643	569	495	421	347	272	194	109	10					5457
	13	909	828	753	682	611	541	471	401	331	260	185	104	10				6086
	14	940	861	789	721	653	586	520	453	386	319	250	178	99	10			6765
	15	973	897	827	761	696	631	567	502	438	374	309	242	172	96	10		7495
	16	1009	934	866	801	738	675	613	551	489	427	364	301	236	167	93	10	8274
154	9	830	725	626	528	431	333	234	129	10								3846
	10	846	750	659	570	482	394	305	215	119	10							4350
	11	868	779	695	612	530	449	367	285	201	111	10						4907
	12	896	812	732	654	577	501	424	347	270	190	105	10					5518
	13	928	847	771	697	623	551	478	405	332	258	181	100	10				6181
	14	963	885	811	740	669	600	530	460	390	320	249	175	96	10			6898
	15	1000	924	853	784	716	648	581	513	446	378	310	241	170	93	10		7667
156	16	1040	965	896	828	762	696	631	565	500	434	369	303	235	165	91	10	8490
	9	849	742	640	541	441	342	241	133	10								3939
	10	865	766	674	584	493	403	313	220	122	10							4450
	11	887	795	709	625	542	459	375	292	206	114	10						5014
	12	915	828	746	667	589	511	433	355	276	195	108	10					5633
	13	946	863	785	710	636	562	487	414	339	264	186	103	10				6305
	14	981	901	826	753	682	611	540	469	398	327	254	179	99	10			7030
158	15	1018	941	868	797	728	660	591	523	454	386	317	247	174	96	10		7810
	16	1058	982	911	842	775	708	642	576	509	443	376	309	240	169	93	10	8643
	9	869	759	656	554	452	350	247	137	10								4034
	10	883	783	688	596	505	413	321	226	126	10							4551
	11	905	811	724	638	554	469	384	299	211	117	10						5122
	12	933	844	761	680	601	522	442	363	282	199	111	10					5748
	13	964	879	800	723	648	573	497	422	346	270	191	106	10				6429
160	14	999	917	841	767	695	623	550	478	406	334	260	183	101	10			7164
	15	1037	957	883	811	741	671	602	533	463	394	323	252	178	98	10		7953
	16	1076	999	926	856	788	721	653	586	519	451	383	315	246	173	95	10	8797
	9	888	776	671	567	463	360	254	141	10								4130
	10	903	800	703	610	516	422	328	232	129	10							4653
	11	924	828	738	652	565	479	393	306	216	120	10						5231
	12	951	860	776	694	613	532	452	371	289	204	113	10					5865
162	13	982	895	815	737	660	583	507	431	354	276	195	108	10				6553
	14	1017	933	855	780	707	634	561	487	414	341	266	188	104	10			7297
	15	1055	973	898	825	754	683	613	542	472	401	330	257	182	101	10		8096
	16	1094	1015	941	870	801	733	664	596	528	459	391	322	251	177	98	10	8950
	9	909	793	686	580	474	368	261	146	10								4227
	10	922	816	718	623	527	432	337	238	133	10							4756
	11	943	844	753	665	577	489	401	313	222	124	10						5341
164	12	970	876	790	707	625	543	461	379	296	209	116	10					5982
	13	1001	912	829	750	672	595	517	439	361	282	200	111	10				6679
	14	1035	950	870	794	719	645	571	497	422	348	272	192	106	10			7431
	15	1073	990	912	839	767	695	623	552	481	409	337	263	186	103	10		8240
	16	1113	1032	956	884	814	745	676	606	537	468	398	328	256	181	100	10	9104
	9	929	811	701	593	485	378	268	150	10								4325
	10	941	833	733	636	539	442	345	245	137	10							4861
166	11	962	861	768	678	589	500	410	320	228	127	10						5453
	12	988	893	805	721	637	554	470	387	302	215	119	10					6101
	13	1019	928	844	763	684	606	527	448	369	288	205	114	10				6805
	14	1053	966	885	808	732	656	581	506	431	355	277	197	109	10			7566
	15	1091	1006	928	853	779	707	634	562	489	417	344	269	190	105	10		8384
	16	1131	1048	971	898	827	757	687	616	546	476	406	335	262	185	102	10	9257
	9	949	829	717	607	497	387	275	154	10								4425
168	10	961	850	749	649	551	452	353	251	140	10							4966
	11	981	878	783	692	601	510	419	328	233	130	10						5565
	12	1006	909	820	734	649	565	480	395	309	220	123	10					6220
	13	1037	944	859	777	697	617	537	457	376	295	209	117	10				6932
	14	1071	982	900	821	745	668	592	515	439	362	284	201	112	10			7702
	15	1109	1022	942	866	792	719	645	572	498	425	351	274	195	108	10		8528
	16	1149	1064	986	912	840	769	698	627	556	485	413	341	267	189	105	10	9411
170	9	970	847	732	620	509	397	282	159	10								4526
	10	981	868	764	663	563	462	361	257	144	10							5073
	11	1000	894	798	705	613	521	428	336	239	134	10						5678
	12	1025	926	835	748	661	575	490	403	316	225	126	10					6340
	13	1055	961	874	791	709	628	547	466	384	301	214	120	10				7060
	14	1090	998	915	835	757	679	602	525	447	369	290	206	115	10			7838
	15	1127	1039	957	880	805	730	656	582	507	433	357	280	199	111	10		8673
172	16	1167	1081	1001	926	853	781											

Table 1—Gross volume table for old-growth redwood (*Sequoia sempervirens*).
Volumes, by logs and totaled for the tree, are based on the Spaulding log rule. All
entries above the solid line have been extrapolated beyond actual field data,
continued.

D.b.h.	Height in logs	Log position																Total volume
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
Tens of board feet																		
168	9	992	865	748	634	520	406	290	163	10								4628
	10	1001	885	779	677	575	472	370	264	148	10							5181
	11	1019	912	813	719	625	531	438	343	245	137							5792
	12	1044	942	850	761	674	586	499	412	323	231	129	10					6461
	13	1074	977	889	804	722	639	557	475	392	308	219	123	10				7189
	14	1108	1014	929	849	769	691	613	534	456	377	296	211	117	10			7974
	15	1145	1055	972	894	818	742	667	591	516	441	364	286	204	113	10		8818
	16	1185	1097	1016	940	866	793	720	647	574	502	429	354	278	198	110	10	9719
170	9	1013	883	764	648	532	416	298	168	10								4732
	10	1021	903	795	690	587	483	378	271	152	10							5290
	11	1039	928	829	732	637	542	447	351	251	141	10						5907
	12	1063	959	865	775	686	598	509	420	330	236	132	10					6583
	13	1092	993	904	818	734	651	567	484	400	314	225	126	10				7318
	14	1126	1031	944	862	782	703	623	544	464	384	302	216	120	10			8111
	15	1163	1071	987	908	830	754	678	601	525	449	371	292	208	116	10		8963
	16	1203	1113	1031	954	879	805	731	658	584	511	436	361	284	202	112	10	9874
172	9	1034	902	781	662	544	426	305	173	10								4837
	10	1041	921	811	705	599	493	387	277	157	10							5401
	11	1058	946	844	746	650	553	456	359	257	145	10						6024
	12	1082	976	880	788	698	609	519	429	337	242	136	10					6706
	13	1111	1010	918	832	747	662	577	493	408	321	230	129	10				7448
	14	1145	1047	959	876	795	714	634	553	473	392	308	220	123	10			8249
	15	1181	1087	1002	921	843	766	688	611	534	457	379	298	213	119	10		9109
	16	1221	1129	1046	968	892	817	742	668	593	519	444	368	290	206	115	10	10028
174	9	1055	920	797	677	557	436	313	178	10								4943
	10	1062	938	827	719	611	504	396	284	161	10							5512
	11	1078	963	859	760	662	564	466	367	263	149	10						6141
	12	1101	993	895	802	711	620	529	438	345	247	139	10					6830
	13	1130	1026	934	845	759	673	588	502	416	328	235	132	10				7578
	14	1163	1064	974	890	807	726	644	563	481	399	315	225	126	10			8387
	15	1200	1103	1017	935	856	778	699	621	543	465	386	304	217	121	10		9255
	16	1239	1146	1061	981	905	829	753	678	603	528	452	375	295	211	117	10	10183
176	9	1077	939	814	691	569	447	321	183	10								5051
	10	1083	956	843	733	624	515	405	291	165	10							5625
	11	1097	980	875	774	675	575	476	375	270	152	10						6259
	12	1120	1009	910	816	724	631	539	447	352	253	143	10					6954
	13	1148	1043	948	859	772	685	598	512	424	335	241	135	10				7710
	14	1181	1080	989	903	820	737	655	573	490	407	321	230	129	10			8525
	15	1218	1120	1031	949	869	789	710	631	552	473	393	310	222	124	10		9401
	16	1257	1162	1076	995	917	841	765	689	612	536	460	382	301	215	120	10	10338
178	9	1098	958	830	706	582	457	329	188	10								5158
	10	1103	974	859	747	637	526	414	299	170	10							5739
	11	1117	998	891	788	687	587	485	383	276	157	10						6379
	12	1139	1026	926	830	736	643	549	456	360	259	146	10					7080
	13	1167	1059	963	873	785	697	609	521	432	342	246	138	10				7842
	14	1199	1096	1004	917	833	749	666	582	499	414	328	235	132	10			8664
	15	1236	1136	1046	962	881	801	721	642	562	481	400	316	227	127	10		9548
	16	1275	1178	1090	1009	930	853	776	699	622	545	467	389	307	220	123	10	10493
180	9	1119	977	847	721	594	468	338	193	10								5267
	10	1124	993	875	762	649	537	424	306	174	10							5854
	11	1137	1015	906	803	700	598	495	392	283	160	10						6499
	12	1159	1043	941	844	749	654	559	464	368	265	150	10					7206
	13	1186	1076	978	887	797	708	619	530	441	349	251	142	10				7974
	14	1218	1112	1019	931	845	761	676	592	508	422	334	241	135	10			8804
	15	1253	1152	1061	976	894	813	732	651	571	490	408	323	232	130	10		9696
	16	1293	1194	1105	1022	943	865	787	709	631	554	476	396	313	225	125	10	10648
182	9	1141	997	864	736	607	478	346	198	10								5377
	10	1146	1011	891	776	662	548	433	314	179	10							5970
	11	1157	1033	922	817	713	609	505	400	289	165	10						6620
	12	1178	1060	956	858	762	666	570	473	375	271	154	10					7333
	13	1203	1093	994	901	810	720	630	540	449	356	257	145	10				8108
	14	1236	1129	1034	944	858	773	687	602	517	430	341	246	138	10			8945
	15	1272	1168	1076	989	906	825	743	662	580	498	415	329	237	133	10		9843
	16	1311	1210	1120	1036	956	877	798	719	641	563	484	403	319	229	128	10	10804
184	9	1162	1016	882	751	620	489	355	204	10								5489
	10	1167	1029	908	791	675	559	443	321	184	10							6087
	11	1178	1050	938	831	726	621	515	409	296	169	10						6743
	12	1197	1078	972	872	775	677	580	483	383	277	157	10					7461
	13	1223	1109	1009	914	823	732	640	549	458	363	263	149	10				8242
	14	1255	1145	1048	958	871	784	698	612	525	438	348	251	142	10			9085
	15	1290	1184	1090	1003	919	836	754	672	589	507	423	336	242	136	10		9991
	16	1329	1226	1134	1050	968	889	809	730	651	571	492	410	325	234	131	10	10959
186	9	1185	1036	899	766	634	501	363	209	10								5603
	10	1188	1048	925	806	688	571	452	329	189	10							6206
	11	1198	1068	954	846	739	632	526	417	303	173	10						6866
	12	1217	1095	987	886	787	689	591	492	391	284	161	10					7590
	13	1243	1126	1024	928	836	743	651	559	466	371	268	152	10				8377
	14	1273	1161	1063	972	884	796	709	622	534	446	355	257	145	10			9227
	15	1308	1200	1105	1017	932	848	765	682	599	515	430	342	247	139	10		10139
	16	1347	1242	1149	1063	981	901	820	740	660	580	500	417	332	239	134	10	11115

Table 1—Gross volume table for old-growth redwood (*Sequoia sempervirens*).
 Volumes, by logs and totaled for the tree, are based on the Spaulding log rule. All
 entries above the solid line have been extrapolated beyond actual field data,
 continued.

D.b.h.	Height in logs	Log position																Total volume
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	
188		Tens of board feet																
	9	1205	1056	917	781	647	512	372	215	10								5716
	10	1210	1067	941	821	702	582	462	337	193	10							6325
	11	1219	1086	970	861	752	644	536	426	310	177	10						6991
	12	1236	1112	1003	901	801	701	601	501	399	290	165	10					7720
	13	1262	1143	1039	942	848	755	662	569	475	378	274	156	10				8513
	14	1292	1178	1078	986	896	808	720	632	543	454	362	262	148	10			9369
	15	1326	1216	1120	1030	945	860	776	692	608	524	438	349	252	142	10		10288
16	1364	1258	1163	1077	994	912	831	751	670	589	508	425	338	244	137	10	11271	
190	10	1204	1064	937	814	691	568	444	317	177	10							6226
	11	1223	1093	976	862	749	637	524	411	293	164	10						6942
	12	1250	1128	1017	910	806	701	597	492	386	275	153	10					7725
	13	1283	1167	1061	960	862	763	665	566	467	367	261	145	10				8577
	14	1321	1210	1108	1012	917	823	730	636	542	448	352	250	138	10			9497
	15	1363	1255	1157	1064	973	883	793	703	614	524	433	339	241	133	10		10485
	16	1409	1304	1208	1117	1029	942	855	769	682	596	509	420	329	234	129	10	11542
	192	10	1226	1083	954	828	704	579	454	324	182	10						
11		1243	1111	992	876	762	649	535	419	300	168	10						7065
12		1270	1145	1033	925	819	713	607	501	394	281	157	10					7855
13		1302	1184	1076	975	875	775	675	576	476	374	267	148	10				8713
14		1340	1227	1123	1025	930	836	741	646	552	456	358	255	141	10			9640
15		1382	1272	1172	1078	986	895	804	714	623	532	440	346	246	136	10		10636
16		1427	1321	1223	1131	1042	954	867	779	692	604	517	427	336	238	132	10	11700
194		10	1247	1102	971	843	717	591	463	332	187	10						
	11	1264	1129	1008	891	775	660	545	428	307	172	10						7189
	12	1289	1163	1048	939	832	725	618	511	402	287	161	10					7985
	13	1321	1201	1092	989	888	787	686	586	484	381	272	152	10				8849
	14	1359	1243	1138	1040	943	847	752	656	561	464	365	260	145	10			9783
	15	1400	1289	1187	1092	999	907	815	724	632	541	448	352	251	139	10		10786
	16	1446	1337	1238	1145	1055	966	878	790	702	613	525	435	342	243	134	10	11859
	196	10	1269	1121	987	859	730	602	473	340	192	10						
11		1285	1148	1024	906	789	672	555	437	313	176	10						7315
12		1309	1180	1064	954	845	737	629	520	410	294	164	10					8116
13		1341	1218	1108	1003	901	799	697	595	493	389	278	155	10				8987
14		1378	1260	1154	1053	956	859	763	666	570	472	372	266	148	10			9927
15		1419	1305	1202	1106	1012	919	827	734	642	549	455	359	256	142	10		10937
16		1464	1353	1253	1159	1068	979	890	800	711	622	533	442	348	248	137	10	12017



The Forest Service of the U.S. Department of Agriculture

- . . . Conducts forest and range research at more than 75 locations from Puerto Rico to Alaska and Hawaii.
- . . . Participates with all State forestry agencies in cooperative programs to protect and improve the Nation's 395 million acres of State, local, and private forest lands.
- . . . Manages and protects the 187-million-acre National Forest System for sustained yield of its many products and services.

The Pacific Southwest Forest and Range Experiment Station

represents the research branch of the Forest Service in California and Hawaii.

ERRATA

In table 1, on page 6, the data on log position for two d.b.h. classes--104 and 106--were inadvertently transposed in printing. Please replace page 6 with the attached Corrected Copy of the table.

Table 1—Gross volume table for old-growth redwood (*Sequoia sempervirens*).
 Volumes, by logs and totaled for the tree, are based on the Spaulding log rule. All
 entries above the solid line have been extrapolated beyond actual field data,
 continued.

D.b.h.	Height in logs	Log position																Total volume
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	

92	7	328	279	229	176	124	72	10	Tens of board feet										1217
	8	346	300	252	202	153	104	57	10								1424		
	9	363	321	275	229	183	137	92	49	10							1659		
	10	380	341	299	256	212	169	126	84	45	10						1922		
	11	399	362	322	282	241	200	159	118	78	41	10					2212		
	12	418	384	346	307	264	229	190	151	112	75	40	10				2530		
	13	439	406	370	333	296	258	220	182	145	107	72	38	10			2876		
14	461	429	394	359	322	286	249	213	176	140	104	69	37	10			3249		
94	7	339	289	237	184	131	78	10											1268
	8	360	312	262	210	159	109	59	10								1481		
	9	376	332	286	238	190	143	96	51	10							1722		
	10	394	353	310	265	220	176	131	87	46	10						1992		
	11	412	375	334	292	249	207	165	122	81	43	10					2290		
	12	432	397	358	318	277	237	197	156	116	77	41	10				2616		
	13	454	419	382	344	305	266	227	189	150	111	74	40	10			2971		
14	476	443	407	370	333	295	257	219	182	144	107	72	39	10			3354		
96	7	366	311	255	197	141	83	10											1363
	8	379	328	275	223	170	117	65	10								1567		
	9	391	345	297	248	200	151	102	55	10							1799		
	10	405	362	318	273	224	182	137	93	50	10						2058		
	11	420	380	339	297	255	212	170	124	86	47	10					2344		
	12	437	400	361	321	281	241	200	159	121	82	44	10				2657		
	13	455	420	383	345	307	268	230	191	153	115	78	43	10			2998		
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	8	393	340	286	231	176	122	67	10								1625		
	9	405	358	307	257	207	156	106	57	10							1863		
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	11	435	394	351	307	263	220	176	132	89	48	10					2425		
	12	452	414	373	332	290	249	207	166	125	84	46	10				2748		
	13	471	434	396	357	317	277	238	198	158	119	80	44	10			3099		
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	8	407	353	296	239	183	126	70	10								1684		
	9	420	370	318	266	214	162	110	59	10							1929		
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	11	450	407	363	318	272	227	182	137	92	49	10					2507		
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	13	487	449	409	369	327	287	245	204	163	123	83	45	10			3201		
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	8	421	365	307	248	189	131	73	10								1744		
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	11	465	421	375	328	282	235	188	141	95	51	10					2591		
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	13	503	463	422	380	338	296	253	211	169	127	86	46	10			3304		
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	8	436	377	317	257	196	136	76	10								1805		
	9	449	396	341	285	229	173	118	64	10							2065		
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	11	480	435	387	339	291	242	194	146	98	53	10					2675		
	12	498	456	411	366	320	274	228	183	137	93	50	10				3026		
	13	518	478	435	392	349	305	261	218	174	131	88	48	10			3407		
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106	7	435	370	304	238	172	104	10											1633
	8	451	390	328	266	203	141	79	10								1868		
	9	464	409	352	295	237	179	122	66	10							2134		
	10	478	428	376	322	269	216	163	110	59	10						2431		
	11	495	448	400	350	300	250	200	151	102	54	10					2760		
	12	514	470	424	377	330	283	235	188	142	96	51	10				3120		
	13	534	493	449	404	359	314	269	224	180	135	91	49	10			3511		
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108	7	449	383	315	247	179	108	10											1691
	8	466	403	339	275	211	146	82	10								1932		
	9	479	422	363	304	245	186	127	69	10							2205		
	10	494	442	387	333	278	223	168	114	61	10						2510		
	11	511	462	412	361	309	258	207	155	105	56	10					2846		
	12	530	484	437	388	340	291	243	194	146	99	53	10				3215		
	13	550	507	462	416	370	324	277	231	185	139	94	51	10			3616		
14	573	531	488	444	400	355	311	266	222	177	133	90	49	10			4049		
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	8	481	416	351	284	218	152	85	10								1997		
	9	495	436	375	314	253	192	131	71	10							2277		
	10	509	455	400	343	287	230	174	118	63	10						2589		
	11	526	476	424	372	319	266	213	161	109	58	10					2934		
	12	545	498	450	400	350	300	250	200	151	102	55	10				3311		
	13	566	522	475	428	381	333	286	238	191	143	97	52	10			3722		
14	589	546	502	457	411	365	320	274	228	183	137	93	50	10			4165		
15	613	572	529	485	441	397	353	309	265	220	176	133	90	49	10			4642	