

APPENDIX 3: STOCKING LEVEL TABLES (PONDEROSA PINE SERIES)

This appendix provides suggested stocking levels in a series of tables grouped by plant association and forest series. Each of the 44 upland-forest associations has one to seven tables, depending on the number of tree species associated with it (table 2). The order of these tables follows the order used in table 2, both for the plant associations (the rows in table 2) and for the tree species (the columns of table 2). Note that the tables differ from the stocking-level figures in appendix 2 because they do not include any information about the full-stocking level; only the upper and lower limits of the management zone are described in this appendix.

Each table consists of 17 columns arranged in three sections. Two of the sections are also divided into subsections, as illustrated in the example below. Each section or subsection will be described individually.

Table 1: Stocking levels for subalpine fir in the ABLA2/TRCA3 plant association (full stocking = 382).

QMD	UPPER MANAGEMENT ZONE (SDI = 287)								LOWER MANAGEMENT ZONE (SDI = 191)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
1.0	15323	14426	13340	1.8	84	79	73	72	10215	9618	8893	2.2	56	52	49	65
1.2	11178	10524	9731	2.1	88	83	76	73	7452	7016	6488	2.6	59	55	51	66
1.4	8561	8060	7453	2.4	92	86	80	73	5707	5374	4969	3.0	61	57	53	66
1.6	6795	6398	5916	2.7	95	89	83	74	4530	4265	3944	3.3	63	60	55	67
1.8	5543	5218	4825	3.0	98	92	85	75	3695	3479	3217	3.7	65	61	57	68
2.0	4619	4349	4021	3.3	101	95	88	75	3079	2899	2681	4.0	67	63	58	68
Section 1	Subsection One				Subsection Two				Subsection One				Subsection Two			
	Section Two								Section Three							

Section One: QMD. The first section is a single column providing quadratic mean diameters (QMDs) ranging from 1.0 to 10.0 inches in 0.2-inch increments, and from 10.5 to 30.0 inches in 0.5-inch increments (excluding 29.5 inches). Smaller increments were used for QMDs below 10 inches because the additional detail is useful when preparing silvicultural prescriptions for treatments such as precommercial thinning. If more detail is needed than is shown in the tables, intermediate values could be interpolated.

Section Two: ULMZ. The second section of each table, which consists of eight columns divided into two subsections, provides information about the upper limit of the management zone (ULMZ). The ULMZ can be thought of as a constant level of stand density index (SDI); the actual SDI level selected as an ULMZ is shown in the section heading, e.g., “Upper Management Zone (SDI = 287).” Refer to the “Derivation of the Stocking Level Information” section, page 15 (Upper Limit of the Management Zone), for information about how the SDI level was calculated for the ULMZ.

The first subsection of section two provides trees per acre calculations based on the SDI level established for the ULMZ, and the QMD given in column 1. The first column in this subsection provides the trees per acre associated with an even-aged stand structure, the next column provides it for an irregular structure, and the third column shows it for an uneven-aged stand. Note that the lodgepole pine tables do not include a trees per acre value for an uneven-aged stand because that structure is rare in primary lodgepole forest, and because establishment of an uneven-aged structure has not been a management objective for stands where lodgepole is the dominant or featured species.

The fourth column in subsection one shows the equilateral spacing associated with the trees per acre value for an even-aged stand structure. Spacing calculations were always based on even-aged stands because that structure presumably has the most consistent inter-tree distances; the equilateral spacing values shown in this column would not apply to trees left in clumps or in other irregular arrangements. Note that the lodgepole pine tables provide two measures of inter-tree distance – an equilateral spacing as described above, and a square spacing value that might be helpful when preparing silvicultural prescriptions for treatments in young lodgepole stands at very small QMDs. The square spacing calculation was also based on an even-aged stand structure.

Subsection two of section two provides basal area per acre calculations based on the SDI level established for the ULMZ, and the QMD given in column 1. As described above for subsection one (trees per acre), this subsection provides basal areas per acre for an even-aged, irregular, and uneven-aged structure (once again, an uneven-aged value was not calculated for lodgepole pine).

The fourth column in subsection two shows the forest (tree) canopy cover percentage associated with the basal area per acre for an even-aged or irregular stand structure. For Douglas-fir, ponderosa pine, Engelmann spruce, grand fir, and subalpine fir, canopy cover values pertain to an irregular structure because it best reflects the unmanaged stands that were sampled to derive the mathematical formulas used for the calculations. For lodgepole pine and western larch, canopy cover values pertain to even-aged stands because unmanaged stands tend to be even-aged for those species. Lodgepole pine has two canopy cover values – one pertaining to unmanaged stands, and another for managed stands (defined as those thinned early in life, before they attained a mean stand height of nine feet).

Section Three: LLMZ. The third section of each table, which consists of eight columns divided into two subsections, provides information about the lower limit of the management zone (LLMZ). The LLMZ can be thought of as a constant level of stand density index (SDI); the actual SDI level selected as a LLMZ is shown in the section heading, e.g., “Lower Management Zone (SDI = 191).” Refer to the “Derivation of the Stocking Level Information” section, page 16 (Lower Limit of the Management Zone), for information about how the SDI level was calculated for the LLMZ.

Subsection one of section three provides trees per acre calculations based on the SDI level established for the LLMZ, and the QMD given in column 1. As was described above for section two (ULMZ), this subsection provides trees per acre for an even-aged, irregular, and uneven-aged structure (once again, an uneven-aged value was not included in the lodgepole pine tables). The fourth column in this subsection shows the equilateral spacing associated with the trees per acre value for an even-aged stand structure.

Subsection two of section three provides basal area per acre calculations based on the SDI level established for the LLMZ, and the QMD given in column 1. As described above for subsection one (trees per acre), this subsection provides basal areas per acre for an even-aged, irregular, and uneven-aged structure (once again, an uneven-aged value was not calculated for lodgepole pine). The fourth column in this subsection shows the forest (tree) canopy cover associated with the basal area per acre for an even-aged or irregular stand structure, and was calculated as described above for section two.

Footnotes at the end of each table describe the column heading codes, and summarize how the calculations were made for each item. All of the calculations resulting in the figures in appendix 2, and the tables in appendix 3, were made in a computerized spreadsheet program. Calculation methodology followed the instructions from Cochran and others (1994) – see their appendix 2 (page 19) for more information. Further information about how the calculations were made for this publication can be obtained from the author. The information in this appendix could also be derived using a computer program called SDI. Refer to the “Customizing the Stocking-Level Information” section, page 30, for more information about the SDI program and how to obtain it.

Table 110: Stocking levels for ponderosa pine in the PIPO/SYAL plant association
(full stocking = 318).

QMD	UPPER MANAGEMENT ZONE (SDI = 218)								LOWER MANAGEMENT ZONE (SDI = 146)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
1.0	12766	11872	11114	2.0	70	65	61	50	8553	7954	7446	2.4	47	43	41	43
1.2	9245	8598	8048	2.3	73	68	63	51	6194	5760	5392	2.8	49	45	42	43
1.4	7037	6545	6127	2.7	75	70	65	51	4715	4385	4105	3.3	50	47	44	44
1.6	5556	5167	4837	3.0	78	72	68	52	3722	3462	3241	3.7	52	48	45	45
1.8	4510	4195	3927	3.3	80	74	69	53	3022	2810	2631	4.1	53	50	46	45
2.0	3743	3481	3259	3.7	82	76	71	53	2508	2332	2183	4.5	55	51	48	46
2.2	3162	2941	2753	4.0	83	78	73	53	2118	1970	1844	4.9	56	52	49	46
2.4	2711	2521	2360	4.3	85	79	74	54	1816	1689	1581	5.3	57	53	50	46
2.6	2353	2188	2048	4.6	87	81	76	54	1576	1466	1372	5.6	58	54	51	47
2.8	2063	1919	1796	4.9	88	82	77	54	1382	1286	1204	6.0	59	55	51	47
3.0	1826	1698	1590	5.2	90	83	78	55	1224	1138	1065	6.4	60	56	52	47
3.2	1629	1515	1418	5.6	91	85	79	55	1091	1015	950	6.8	61	57	53	48
3.4	1463	1361	1274	5.9	92	86	80	55	980	912	854	7.2	62	57	54	48
3.6	1322	1230	1151	6.2	93	87	81	55	886	824	771	7.5	63	58	55	48
3.8	1202	1118	1046	6.5	95	88	82	56	805	749	701	7.9	63	59	55	48
4.0	1097	1021	955	6.8	96	89	83	56	735	684	640	8.3	64	60	56	49
4.2	1007	936	876	7.1	97	90	84	56	674	627	587	8.6	65	60	56	49
4.4	927	862	807	7.4	98	91	85	56	621	578	541	9.0	66	61	57	49
4.6	857	797	746	7.7	99	92	86	57	574	534	500	9.4	66	62	58	49
4.8	795	739	692	8.0	100	93	87	57	532	495	464	9.7	67	62	58	49
5.0	739	688	644	8.2	101	94	88	57	495	461	431	10.1	68	63	59	49
5.2	690	642	601	8.5	102	95	89	57	462	430	402	10.4	68	63	59	50
5.4	645	600	562	8.8	103	95	89	57	432	402	376	10.8	69	64	60	50
5.6	605	563	527	9.1	103	96	90	57	405	377	353	11.1	69	64	60	50
5.8	569	529	495	9.4	104	97	91	58	381	354	332	11.5	70	65	61	50
6.0	535	498	466	9.7	105	98	92	58	359	334	312	11.8	70	66	61	50
6.2	505	470	440	10.0	106	99	92	58	339	315	295	12.2	71	66	62	50
6.4	478	444	416	10.3	107	99	93	58	320	298	279	12.5	71	66	62	51
6.6	452	421	394	10.5	107	100	94	58	303	282	264	12.9	72	67	63	51
6.8	429	399	374	10.8	108	101	94	58	287	267	250	13.2	72	67	63	51
7.0	408	379	355	11.1	109	101	95	58	273	254	238	13.6	73	68	64	51
7.2	388	361	338	11.4	110	102	95	58	260	242	226	13.9	73	68	64	51
7.4	369	344	322	11.7	110	103	96	59	248	230	215	14.3	74	69	64	51
7.6	352	328	307	11.9	111	103	97	59	236	220	206	14.6	74	69	65	51
7.8	337	313	293	12.2	112	104	97	59	225	210	196	14.9	75	70	65	51
8.0	322	299	280	12.5	112	104	98	59	216	201	188	15.3	75	70	66	51
8.2	308	286	268	12.8	113	105	98	59	206	192	180	15.6	76	70	66	52
8.4	295	275	257	13.1	114	106	99	59	198	184	172	15.9	76	71	66	52
8.6	283	263	246	13.3	114	106	99	59	190	176	165	16.3	77	71	67	52
8.8	272	253	237	13.6	115	107	100	59	182	169	159	16.6	77	72	67	52
9.0	261	243	227	13.9	115	107	100	59	175	163	152	17.0	77	72	67	52
9.2	251	234	219	14.1	116	108	101	59	168	157	147	17.3	78	72	68	52
9.4	242	225	211	14.4	117	108	101	60	162	151	141	17.6	78	73	68	52
9.6	233	217	203	14.7	117	109	102	60	156	145	136	17.9	78	73	68	52
9.8	225	209	196	15.0	118	109	102	60	151	140	131	18.3	79	73	69	52
10.0	217	202	189	15.2	118	110	103	60	145	135	126	18.6	79	74	69	52
10.5	199	185	173	15.9	120	111	104	60	133	124	116	19.4	80	75	70	53

Table 110: Stocking levels for ponderosa pine in the PIPO/SYAL plant association
(full stocking = 318).

QMD	UPPER MANAGEMENT ZONE (SDI = 218)								LOWER MANAGEMENT ZONE (SDI = 146)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
11.0	183	170	159	16.6	121	112	105	60	123	114	107	20.2	81	75	70	53
11.5	169	157	147	17.2	122	114	106	60	113	105	99	21.1	82	76	71	53
12.0	157	146	137	17.9	123	115	107	61	105	98	92	21.9	83	77	72	53
12.5	146	136	127	18.6	124	116	108	61	98	91	85	22.7	83	78	73	53
13.0	136	127	119	19.2	126	117	109	61	91	85	79	23.5	84	78	73	54
13.5	127	119	111	19.9	127	118	110	61	85	79	74	24.3	85	79	74	54
14.0	120	111	104	20.5	128	119	111	61	80	74	70	25.1	86	80	75	54
14.5	112	104	98	21.2	129	120	112	61	75	70	66	25.9	86	80	75	54
15.0	106	98	92	21.8	130	121	113	62	71	66	62	26.6	87	81	76	54
15.5	100	93	87	22.4	131	122	114	62	67	62	58	27.4	88	81	76	54
16.0	94	88	82	23.1	132	123	115	62	63	59	55	28.2	88	82	77	54
16.5	89	83	78	23.7	133	123	116	62	60	56	52	29.0	89	83	77	55
17.0	85	79	74	24.4	134	124	116	62	57	53	49	29.8	90	83	78	55
17.5	81	75	70	25.0	134	125	117	62	54	50	47	30.5	90	84	78	55
18.0	77	71	67	25.6	135	126	118	62	51	48	45	31.3	91	84	79	55
18.5	73	68	64	26.3	136	127	119	62	49	45	43	32.1	91	85	79	55
19.0	70	65	61	26.9	137	127	119	63	47	43	41	32.8	92	85	80	55
19.5	66	62	58	27.5	138	128	120	63	45	41	39	33.6	92	86	80	55
20.0	64	59	55	28.1	139	129	121	63	43	40	37	34.4	93	86	81	55
20.5	61	57	53	28.8	139	130	121	63	41	38	35	35.1	93	87	81	55
21.0	58	54	51	29.4	140	130	122	63	39	36	34	35.9	94	87	82	56
21.5	56	52	49	30.0	141	131	123	63	37	35	33	36.6	94	88	82	56
22.0	54	50	47	30.6	142	132	123	63	36	33	31	37.4	95	88	83	56
22.5	52	48	45	31.2	142	133	124	63	35	32	30	38.1	95	89	83	56
23.0	50	46	43	31.8	143	133	125	63	33	31	29	38.9	96	89	84	56
23.5	48	44	42	32.4	144	134	125	64	32	30	28	39.6	96	90	84	56
24.0	46	43	40	33.1	145	134	126	64	31	29	27	40.4	97	90	84	56
24.5	44	41	39	33.7	145	135	127	64	30	28	26	41.1	97	91	85	56
25.0	43	40	37	34.3	146	136	127	64	29	27	25	41.9	98	91	85	56
25.5	41	38	36	34.9	147	136	128	64	28	26	24	42.6	98	91	86	56
26.0	40	37	35	35.5	147	137	128	64	27	25	23	43.3	99	92	86	56
26.5	39	36	34	36.1	148	138	129	64	26	24	23	44.1	99	92	86	57
27.0	37	35	33	36.7	149	138	129	64	25	23	22	44.8	100	93	87	57
27.5	36	34	31	37.3	149	139	130	64	24	23	21	45.6	100	93	87	57
28.0	35	33	31	37.9	150	139	130	64	23	22	20	46.3	100	93	87	57
28.5	34	32	30	38.5	150	140	131	64	23	21	20	47.0	101	94	88	57
29.0	33	31	29	39.1	151	140	132	64	22	21	19	47.7	101	94	88	57
30.0	31	29	27	40.3	152	142	133	65	21	19	18	49.2	102	95	89	57

Column headings are:

- QMD Quadratic mean diameter (the diameter of the tree of average basal area).
- EA Even aged, showing the trees/acre, or basal area/acre, associated with an even-aged stand structure.
- IS Irregular structure; even-aged SDIs were reduced by 7% for an irregular stand structure (see figure 8).
- UA Uneven aged; even-aged SDIs were reduced by 13% for an uneven-aged stand structure (from Long 1995).
- ES Equilateral spacing, in feet, that the trees per acre associated with an even-aged stand structure (EA columns) would have when spaced equilaterally apart; also referred to as triangular spacing.
- CC Canopy cover; based on the “CP” equation from Dealy (1985) and the basal area per acre for an irregular structure (IS columns).

Table 111: Stocking levels for ponderosa pine in the PIPO/SYOR plant association
(full stocking = 260).

QMD	UPPER MANAGEMENT ZONE (SDI = 135)								LOWER MANAGEMENT ZONE (SDI = 91)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
1.0	7905	7352	6882	2.5	43	40	38	41	5296	4926	4611	3.1	29	27	25	34
1.2	5725	5324	4984	3.0	45	42	39	42	3836	3567	3339	3.6	30	28	26	35
1.4	4358	4053	3794	3.4	47	43	41	43	2920	2715	2542	4.2	31	29	27	35
1.6	3440	3200	2995	3.8	48	45	42	43	2305	2144	2007	4.7	32	30	28	36
1.8	2793	2598	2432	4.2	49	46	43	44	1871	1740	1629	5.2	33	31	29	36
2.0	2318	2156	2018	4.7	51	47	44	44	1553	1444	1352	5.7	34	32	29	37
2.2	1958	1821	1705	5.1	52	48	45	45	1312	1220	1142	6.2	35	32	30	37
2.4	1679	1561	1461	5.5	53	49	46	45	1125	1046	979	6.7	35	33	31	38
2.6	1457	1355	1268	5.9	54	50	47	45	976	908	850	7.2	36	33	31	38
2.8	1278	1188	1112	6.3	55	51	48	46	856	796	745	7.7	37	34	32	38
3.0	1131	1052	985	6.7	56	52	48	46	758	705	660	8.1	37	35	32	39
3.2	1009	938	878	7.1	56	52	49	46	676	629	588	8.6	38	35	33	39
3.4	906	843	789	7.5	57	53	50	46	607	565	529	9.1	38	36	33	39
3.6	819	762	713	7.8	58	54	50	47	549	510	478	9.6	39	36	34	39
3.8	744	692	648	8.2	59	55	51	47	499	464	434	10.0	39	37	34	40
4.0	680	632	592	8.6	59	55	52	47	455	423	396	10.5	40	37	35	40
4.2	623	580	543	9.0	60	56	52	47	418	388	364	11.0	40	37	35	40
4.4	574	534	500	9.4	61	56	53	47	385	358	335	11.4	41	38	35	40
4.6	531	494	462	9.7	61	57	53	48	356	331	310	11.9	41	38	36	40
4.8	492	458	428	10.1	62	58	54	48	330	307	287	12.4	41	39	36	40
5.0	458	426	399	10.5	62	58	54	48	307	285	267	12.8	42	39	36	41
5.2	427	397	372	10.9	63	59	55	48	286	266	249	13.3	42	39	37	41
5.4	400	372	348	11.2	64	59	55	48	268	249	233	13.7	43	40	37	41
5.6	375	348	326	11.6	64	60	56	49	251	233	219	14.2	43	40	37	41
5.8	352	327	307	12.0	65	60	56	49	236	219	205	14.6	43	40	38	41
6.0	332	308	289	12.3	65	61	57	49	222	207	193	15.0	44	41	38	41
6.2	313	291	272	12.7	66	61	57	49	210	195	183	15.5	44	41	38	42
6.4	296	275	258	13.0	66	61	58	49	198	184	173	15.9	44	41	39	42
6.6	280	260	244	13.4	67	62	58	49	188	175	163	16.4	45	41	39	42
6.8	266	247	231	13.8	67	62	58	49	178	166	155	16.8	45	42	39	42
7.0	252	235	220	14.1	67	63	59	49	169	157	147	17.2	45	42	39	42
7.2	240	223	209	14.5	68	63	59	50	161	150	140	17.7	45	42	40	42
7.4	229	213	199	14.8	68	64	59	50	153	143	133	18.1	46	43	40	42
7.6	218	203	190	15.2	69	64	60	50	146	136	127	18.5	46	43	40	42
7.8	208	194	181	15.5	69	64	60	50	140	130	122	19.0	46	43	40	43
8.0	199	185	173	15.9	70	65	61	50	134	124	116	19.4	47	43	41	43
8.2	191	177	166	16.2	70	65	61	50	128	119	111	19.8	47	44	41	43
8.4	183	170	159	16.6	70	65	61	50	122	114	107	20.3	47	44	41	43
8.6	175	163	153	16.9	71	66	62	50	117	109	102	20.7	47	44	41	43
8.8	168	157	147	17.3	71	66	62	50	113	105	98	21.1	48	44	41	43
9.0	162	150	141	17.6	71	66	62	51	108	101	94	21.5	48	45	42	43
9.2	156	145	135	18.0	72	67	63	51	104	97	91	22.0	48	45	42	43
9.4	150	139	130	18.3	72	67	63	51	100	93	87	22.4	48	45	42	43
9.6	144	134	126	18.7	73	67	63	51	97	90	84	22.8	49	45	42	43
9.8	139	129	121	19.0	73	68	63	51	93	87	81	23.2	49	45	43	43
10.0	134	125	117	19.4	73	68	64	51	90	84	78	23.6	49	46	43	44
10.5	123	115	107	20.2	74	69	64	51	83	77	72	24.7	50	46	43	44

Table 111: Stocking levels for ponderosa pine in the PIPO/SYOR plant association
(full stocking = 260).

QMD	UPPER MANAGEMENT ZONE (SDI = 135)								LOWER MANAGEMENT ZONE (SDI = 91)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
11.0	113	105	99	21.1	75	70	65	51	76	71	66	25.7	50	47	44	44
11.5	105	97	91	21.9	76	70	66	52	70	65	61	26.8	51	47	44	44
12.0	97	90	85	22.7	76	71	66	52	65	61	57	27.8	51	48	45	44
12.5	90	84	79	23.6	77	72	67	52	61	56	53	28.8	52	48	45	45
13.0	84	78	73	24.4	78	72	68	52	57	53	49	29.8	52	48	45	45
13.5	79	73	69	25.2	78	73	68	52	53	49	46	30.8	53	49	46	45
14.0	74	69	64	26.1	79	74	69	52	50	46	43	31.9	53	49	46	45
14.5	70	65	61	26.9	80	74	69	53	47	43	41	32.9	53	50	47	45
15.0	65	61	57	27.7	80	75	70	53	44	41	38	33.9	54	50	47	45
15.5	62	57	54	28.5	81	75	71	53	41	39	36	34.9	54	50	47	45
16.0	58	54	51	29.3	82	76	71	53	39	36	34	35.8	55	51	48	46
16.5	55	51	48	30.2	82	76	72	53	37	34	32	36.8	55	51	48	46
17.0	52	49	46	31.0	83	77	72	53	35	33	31	37.8	55	52	48	46
17.5	50	46	43	31.8	83	77	73	53	33	31	29	38.8	56	52	49	46
18.0	47	44	41	32.6	84	78	73	53	32	30	28	39.8	56	52	49	46
18.5	45	42	39	33.4	84	78	73	54	30	28	26	40.8	57	53	49	46
19.0	43	40	38	34.2	85	79	74	54	29	27	25	41.7	57	53	50	46
19.5	41	38	36	35.0	85	79	74	54	28	26	24	42.7	57	53	50	46
20.0	39	37	34	35.7	86	80	75	54	26	25	23	43.7	58	54	50	47
20.5	38	35	33	36.5	86	80	75	54	25	23	22	44.6	58	54	50	47
21.0	36	34	31	37.3	87	81	76	54	24	22	21	45.6	58	54	51	47
21.5	35	32	30	38.1	87	81	76	54	23	22	20	46.6	59	54	51	47
22.0	33	31	29	38.9	88	82	76	54	22	21	19	47.5	59	55	51	47
22.5	32	30	28	39.7	88	82	77	54	21	20	19	48.5	59	55	51	47
23.0	31	29	27	40.5	89	82	77	55	21	19	18	49.4	59	55	52	47
23.5	30	28	26	41.2	89	83	78	55	20	18	17	50.4	60	56	52	47
24.0	29	27	25	42.0	90	83	78	55	19	18	17	51.3	60	56	52	47
24.5	27	26	24	42.8	90	84	78	55	18	17	16	52.3	60	56	52	47
25.0	27	25	23	43.6	90	84	79	55	18	17	15	53.2	61	56	53	47
25.5	26	24	22	44.3	91	84	79	55	17	16	15	54.1	61	57	53	48
26.0	25	23	22	45.1	91	85	79	55	17	15	14	55.1	61	57	53	48
26.5	24	22	21	45.9	92	85	80	55	16	15	14	56.0	61	57	53	48
27.0	23	22	20	46.6	92	86	80	55	16	14	13	57.0	62	57	54	48
27.5	22	21	20	47.4	92	86	80	55	15	14	13	57.9	62	58	54	48
28.0	22	20	19	48.1	93	86	81	55	15	14	13	58.8	62	58	54	48
28.5	21	20	18	48.9	93	87	81	55	14	13	12	59.7	62	58	54	48
29.0	20	19	18	49.7	94	87	81	55	14	13	12	60.7	63	58	55	48
30.0	19	18	17	51.2	94	88	82	56	13	12	11	62.5	63	59	55	48

Column headings are:

- QMD Quadratic mean diameter (the diameter of the tree of average basal area).
- EA Even aged, showing the trees/acre, or basal area/acre, associated with an even-aged stand structure.
- IS Irregular structure; even-aged SDIs were reduced by 7% for an irregular stand structure (see figure 8).
- UA Uneven aged; even-aged SDIs were reduced by 13% for an uneven-aged stand structure (from Long 1995).
- ES Equilateral spacing, in feet, that the trees per acre associated with an even-aged stand structure (EA columns) would have when spaced equilaterally apart; also referred to as triangular spacing.
- CC Canopy cover; based on the “CP” equation from Dealy (1985) and the basal area per acre for an irregular structure (IS columns).

Table 112: Stocking levels for ponderosa pine in the PIPO/CARU plant association
(full stocking = 365).

QMD	UPPER MANAGEMENT ZONE (SDI = 154)								LOWER MANAGEMENT ZONE (SDI = 103)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
1.0	9013	8382	7847	2.4	49	46	43	44	6039	5616	5257	2.9	33	31	29	36
1.2	6527	6070	5682	2.8	51	48	45	44	4373	4067	3807	3.4	34	32	30	37
1.4	4968	4621	4325	3.2	53	49	46	45	3329	3096	2898	3.9	36	33	31	38
1.6	3923	3648	3415	3.6	55	51	48	46	2628	2444	2288	4.4	37	34	32	38
1.8	3184	2962	2772	4.0	56	52	49	46	2134	1984	1857	4.9	38	35	33	39
2.0	2643	2458	2301	4.4	58	54	50	47	1771	1647	1541	5.3	39	36	34	39
2.2	2232	2076	1944	4.7	59	55	51	47	1496	1391	1302	5.8	39	37	34	40
2.4	1914	1780	1666	5.1	60	56	52	47	1282	1192	1116	6.3	40	37	35	40
2.6	1661	1545	1446	5.5	61	57	53	48	1113	1035	969	6.7	41	38	36	40
2.8	1457	1355	1268	5.9	62	58	54	48	976	908	850	7.2	42	39	36	41
3.0	1289	1199	1122	6.2	63	59	55	48	864	803	752	7.6	42	39	37	41
3.2	1150	1070	1001	6.6	64	60	56	49	771	717	671	8.1	43	40	37	41
3.4	1033	961	899	7.0	65	61	57	49	692	644	603	8.5	44	41	38	41
3.6	934	868	813	7.3	66	61	57	49	626	582	545	9.0	44	41	38	42
3.8	848	789	739	7.7	67	62	58	49	568	529	495	9.4	45	42	39	42
4.0	775	721	675	8.1	68	63	59	49	519	483	452	9.8	45	42	39	42
4.2	711	661	619	8.4	68	64	60	50	476	443	415	10.3	46	43	40	42
4.4	655	609	570	8.8	69	64	60	50	439	408	382	10.7	46	43	40	43
4.6	605	563	527	9.1	70	65	61	50	405	377	353	11.1	47	44	41	43
4.8	561	522	489	9.5	71	66	61	50	376	350	327	11.6	47	44	41	43
5.0	522	485	454	9.8	71	66	62	50	350	325	304	12.0	48	44	42	43
5.2	487	453	424	10.2	72	67	63	51	326	303	284	12.4	48	45	42	43
5.4	456	424	397	10.5	72	67	63	51	305	284	266	12.8	49	45	42	43
5.6	427	397	372	10.9	73	68	64	51	286	266	249	13.3	49	46	43	44
5.8	401	373	349	11.2	74	68	64	51	269	250	234	13.7	49	46	43	44
6.0	378	352	329	11.5	74	69	65	51	253	236	221	14.1	50	46	43	44
6.2	357	332	311	11.9	75	70	65	51	239	222	208	14.5	50	47	44	44
6.4	337	314	294	12.2	75	70	66	51	226	210	197	14.9	50	47	44	44
6.6	319	297	278	12.6	76	71	66	52	214	199	186	15.3	51	47	44	44
6.8	303	282	264	12.9	76	71	67	52	203	189	177	15.7	51	48	45	44
7.0	288	268	251	13.2	77	72	67	52	193	179	168	16.2	52	48	45	44
7.2	274	255	238	13.6	77	72	67	52	183	171	160	16.6	52	48	45	45
7.4	261	243	227	13.9	78	72	68	52	175	163	152	17.0	52	49	45	45
7.6	249	231	217	14.2	78	73	68	52	167	155	145	17.4	53	49	46	45
7.8	238	221	207	14.5	79	73	69	52	159	148	139	17.8	53	49	46	45
8.0	227	211	198	14.9	79	74	69	52	152	142	133	18.2	53	49	46	45
8.2	217	202	189	15.2	80	74	69	53	146	136	127	18.6	53	50	47	45
8.4	208	194	181	15.5	80	75	70	53	140	130	122	19.0	54	50	47	45
8.6	200	186	174	15.9	81	75	70	53	134	125	117	19.4	54	50	47	45
8.8	192	178	167	16.2	81	75	71	53	129	120	112	19.8	54	51	47	45
9.0	184	172	161	16.5	81	76	71	53	124	115	108	20.2	55	51	48	46
9.2	177	165	154	16.8	82	76	71	53	119	111	103	20.6	55	51	48	46
9.4	171	159	149	17.2	82	77	72	53	114	106	100	21.0	55	51	48	46
9.6	165	153	143	17.5	83	77	72	53	110	103	96	21.4	55	52	48	46
9.8	159	148	138	17.8	83	77	72	53	106	99	93	21.8	56	52	48	46
10.0	153	142	133	18.1	83	78	73	53	103	95	89	22.1	56	52	49	46

10.5 | 140 | 131 | 122 | 18.9 | 84 | 79 | 73 | 54 | 94 | 87 | 82 | 23.1 | 57 | 53 | 49 | 46

Table 112: Stocking levels for ponderosa pine in the PIPO/CARU plant association
(full stocking = 365).

QMD	UPPER MANAGEMENT ZONE (SDI = 154)								LOWER MANAGEMENT ZONE (SDI = 103)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
11.0	129	120	113	19.7	85	79	74	54	87	81	75	24.1	57	53	50	46
11.5	120	111	104	20.5	86	80	75	54	80	74	70	25.1	58	54	50	47
12.0	111	103	97	21.3	87	81	76	54	74	69	65	26.0	58	54	51	47
12.5	103	96	90	22.1	88	82	77	54	69	64	60	27.0	59	55	51	47
13.0	96	89	84	22.9	89	82	77	55	64	60	56	27.9	59	55	52	47
13.5	90	84	78	23.6	89	83	78	55	60	56	52	28.9	60	56	52	47
14.0	84	78	73	24.4	90	84	79	55	57	53	49	29.8	60	56	53	47
14.5	79	74	69	25.2	91	85	79	55	53	49	46	30.8	61	57	53	48
15.0	75	69	65	26.0	92	85	80	55	50	47	44	31.7	61	57	53	48
15.5	70	66	61	26.7	92	86	80	55	47	44	41	32.6	62	58	54	48
16.0	67	62	58	27.5	93	87	81	55	45	42	39	33.6	62	58	54	48
16.5	63	59	55	28.2	94	87	82	56	42	39	37	34.5	63	58	55	48
17.0	60	56	52	29.0	94	88	82	56	40	37	35	35.4	63	59	55	48
17.5	57	53	49	29.7	95	88	83	56	38	35	33	36.3	64	59	55	48
18.0	54	50	47	30.5	96	89	83	56	36	34	32	37.3	64	60	56	48
18.5	52	48	45	31.2	96	89	84	56	35	32	30	38.2	64	60	56	49
19.0	49	46	43	32.0	97	90	84	56	33	31	29	39.1	65	60	56	49
19.5	47	44	41	32.7	97	91	85	56	31	29	27	40.0	65	61	57	49
20.0	45	42	39	33.5	98	91	85	56	30	28	26	40.9	66	61	57	49
20.5	43	40	37	34.2	98	92	86	56	29	27	25	41.8	66	61	57	49
21.0	41	38	36	35.0	99	92	86	57	28	26	24	42.7	66	62	58	49
21.5	39	37	34	35.7	100	93	87	57	26	25	23	43.6	67	62	58	49
22.0	38	35	33	36.4	100	93	87	57	25	24	22	44.5	67	62	58	49
22.5	36	34	32	37.2	101	94	88	57	24	23	21	45.4	67	63	59	49
23.0	35	33	31	37.9	101	94	88	57	23	22	20	46.3	68	63	59	50
23.5	34	31	29	38.6	102	94	88	57	23	21	20	47.2	68	63	59	50
24.0	33	30	28	39.3	102	95	89	57	22	20	19	48.1	68	64	60	50
24.5	31	29	27	40.1	103	95	89	57	21	20	18	48.9	69	64	60	50
25.0	30	28	26	40.8	103	96	90	57	20	19	18	49.8	69	64	60	50
25.5	29	27	25	41.5	104	96	90	57	20	18	17	50.7	69	65	60	50
26.0	28	26	25	42.2	104	97	91	57	19	18	16	51.6	70	65	61	50
26.5	27	25	24	42.9	104	97	91	58	18	17	16	52.5	70	65	61	50
27.0	26	25	23	43.7	105	98	91	58	18	16	15	53.3	70	65	61	50
27.5	26	24	22	44.4	105	98	92	58	17	16	15	54.2	71	66	61	50
28.0	25	23	22	45.1	106	98	92	58	17	15	14	55.1	71	66	62	50
28.5	24	22	21	45.8	106	99	92	58	16	15	14	56.0	71	66	62	50
29.0	23	22	20	46.5	107	99	93	58	16	14	14	56.8	71	66	62	51
30.0	22	20	19	47.9	107	100	94	58	15	14	13	58.6	72	67	63	51

Column headings are:

- QMD Quadratic mean diameter (the diameter of the tree of average basal area).
- EA Even aged, showing the trees/acre, or basal area/acre, associated with an even-aged stand structure.
- IS Irregular structure; even-aged SDIs were reduced by 7% for an irregular stand structure (see figure 8).
- UA Uneven aged; even-aged SDIs were reduced by 13% for an uneven-aged stand structure (from Long 1995).
- ES Equilateral spacing, in feet, that the trees per acre associated with an even-aged stand structure (EA columns) would have when spaced equilaterally apart; also referred to as triangular spacing.
- CC Canopy cover; based on the “CP” equation from Dealy (1985) and the basal area per acre for an irregular structure (IS columns).

Table 113: Stocking levels for ponderosa pine in the PIPO/CAGE plant association
(full stocking = 201).

QMD	UPPER MANAGEMENT ZONE (SDI = 82)								LOWER MANAGEMENT ZONE (SDI = 55)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
1.0	4803	4467	4181	3.2	26	24	23	32	3218	2993	2801	4.0	18	16	15	25
1.2	3478	3235	3028	3.8	27	25	24	33	2330	2167	2029	4.6	18	17	16	26
1.4	2648	2462	2305	4.4	28	26	25	34	1774	1650	1544	5.3	19	18	17	26
1.6	2090	1944	1820	4.9	29	27	25	34	1400	1302	1219	6.0	20	18	17	27
1.8	1697	1578	1477	5.4	30	28	26	35	1137	1057	990	6.7	20	19	17	27
2.0	1408	1310	1226	6.0	31	29	27	35	944	877	821	7.3	21	19	18	28
2.2	1190	1106	1036	6.5	31	29	27	35	797	741	694	7.9	21	20	18	28
2.4	1020	948	888	7.0	32	30	28	36	683	635	595	8.6	21	20	19	29
2.6	885	823	771	7.5	33	30	28	36	593	552	516	9.2	22	20	19	29
2.8	776	722	676	8.0	33	31	29	36	520	484	453	9.8	22	21	19	29
3.0	687	639	598	8.6	34	31	29	37	460	428	401	10.5	23	21	20	30
3.2	613	570	534	9.1	34	32	30	37	411	382	357	11.1	23	21	20	30
3.4	551	512	479	9.6	35	32	30	37	369	343	321	11.7	23	22	20	30
3.6	498	463	433	10.1	35	33	31	37	333	310	290	12.3	24	22	21	30
3.8	452	420	394	10.5	36	33	31	38	303	282	264	12.9	24	22	21	30
4.0	413	384	359	11.0	36	34	31	38	277	257	241	13.5	24	22	21	31
4.2	379	352	330	11.5	36	34	32	38	254	236	221	14.1	24	23	21	31
4.4	349	324	304	12.0	37	34	32	38	234	217	203	14.7	25	23	21	31
4.6	322	300	281	12.5	37	35	32	39	216	201	188	15.3	25	23	22	31
4.8	299	278	260	13.0	38	35	33	39	200	186	174	15.8	25	23	22	31
5.0	278	259	242	13.4	38	35	33	39	186	173	162	16.4	25	24	22	32
5.2	260	241	226	13.9	38	36	33	39	174	162	151	17.0	26	24	22	32
5.4	243	226	211	14.4	39	36	34	39	163	151	142	17.6	26	24	23	32
5.6	228	212	198	14.9	39	36	34	39	153	142	133	18.2	26	24	23	32
5.8	214	199	186	15.3	39	36	34	39	143	133	125	18.7	26	24	23	32
6.0	201	187	175	15.8	40	37	34	40	135	126	118	19.3	27	25	23	32
6.2	190	177	165	16.3	40	37	35	40	127	118	111	19.9	27	25	23	33
6.4	180	167	156	16.7	40	37	35	40	120	112	105	20.4	27	25	23	33
6.6	170	158	148	17.2	40	38	35	40	114	106	99	21.0	27	25	24	33
6.8	161	150	141	17.7	41	38	35	40	108	101	94	21.6	27	25	24	33
7.0	153	143	134	18.1	41	38	36	40	103	96	89	22.1	27	26	24	33
7.2	146	136	127	18.6	41	38	36	40	98	91	85	22.7	28	26	24	33
7.4	139	129	121	19.0	42	39	36	41	93	87	81	23.2	28	26	24	33
7.6	133	123	115	19.5	42	39	36	41	89	83	77	23.8	28	26	24	33
7.8	127	118	110	19.9	42	39	37	41	85	79	74	24.4	28	26	25	33
8.0	121	113	105	20.4	42	39	37	41	81	75	71	24.9	28	26	25	34
8.2	116	108	101	20.8	43	40	37	41	78	72	68	25.5	28	26	25	34
8.4	111	103	97	21.3	43	40	37	41	74	69	65	26.0	29	27	25	34
8.6	107	99	93	21.7	43	40	37	41	71	66	62	26.5	29	27	25	34
8.8	102	95	89	22.2	43	40	38	41	69	64	60	27.1	29	27	25	34
9.0	98	91	86	22.6	43	40	38	41	66	61	57	27.6	29	27	25	34
9.2	95	88	82	23.1	44	41	38	41	63	59	55	28.2	29	27	25	34
9.4	91	85	79	23.5	44	41	38	42	61	57	53	28.7	29	27	26	34
9.6	88	82	76	24.0	44	41	38	42	59	55	51	29.3	30	27	26	34
9.8	85	79	74	24.4	44	41	39	42	57	53	49	29.8	30	28	26	34
10.0	82	76	71	24.8	44	41	39	42	55	51	48	30.3	30	28	26	34

10.5 | 75 | 70 | 65 | 25.9 | 45 | 42 | 39 | 42 | 50 | 47 | 44 | 31.7 | 30 | 28 | 26 | 35

Table 113: Stocking levels for ponderosa pine in the PIPO/CAGE plant association
(full stocking = 201).

QMD	UPPER MANAGEMENT ZONE (SDI = 82)								LOWER MANAGEMENT ZONE (SDI = 55)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
11.0	69	64	60	27.0	45	42	40	42	46	43	40	33.0	30	28	27	35
11.5	64	59	55	28.1	46	43	40	42	43	40	37	34.3	31	29	27	35
12.0	59	55	51	29.2	46	43	40	43	40	37	34	35.7	31	29	27	35
12.5	55	51	48	30.3	47	44	41	43	37	34	32	37.0	31	29	27	35
13.0	51	48	45	31.3	47	44	41	43	34	32	30	38.3	32	29	28	36
13.5	48	45	42	32.4	48	44	41	43	32	30	28	39.6	32	30	28	36
14.0	45	42	39	33.4	48	45	42	43	30	28	26	40.9	32	30	28	36
14.5	42	39	37	34.5	48	45	42	43	28	26	25	42.2	32	30	28	36
15.0	40	37	35	35.6	49	45	43	43	27	25	23	43.4	33	30	28	36
15.5	38	35	33	36.6	49	46	43	44	25	23	22	44.7	33	31	29	36
16.0	35	33	31	37.6	50	46	43	44	24	22	21	46.0	33	31	29	36
16.5	34	31	29	38.7	50	46	43	44	23	21	20	47.3	33	31	29	37
17.0	32	30	28	39.7	50	47	44	44	21	20	19	48.5	34	31	29	37
17.5	30	28	26	40.8	51	47	44	44	20	19	18	49.8	34	32	30	37
18.0	29	27	25	41.8	51	47	44	44	19	18	17	51.0	34	32	30	37
18.5	27	26	24	42.8	51	48	45	44	18	17	16	52.3	34	32	30	37
19.0	26	24	23	43.8	52	48	45	44	18	16	15	53.5	35	32	30	37
19.5	25	23	22	44.8	52	48	45	45	17	16	15	54.8	35	32	30	37
20.0	24	22	21	45.9	52	49	45	45	16	15	14	56.0	35	33	30	37
20.5	23	21	20	46.9	52	49	46	45	15	14	13	57.3	35	33	31	37
21.0	22	20	19	47.9	53	49	46	45	15	14	13	58.5	35	33	31	38
21.5	21	20	18	48.9	53	49	46	45	14	13	12	59.7	36	33	31	38
22.0	20	19	18	49.9	53	50	46	45	14	13	12	61.0	36	33	31	38
22.5	19	18	17	50.9	54	50	47	45	13	12	11	62.2	36	33	31	38
23.0	19	17	16	51.9	54	50	47	45	13	12	11	63.4	36	34	31	38
23.5	18	17	16	52.9	54	50	47	45	12	11	10	64.6	36	34	32	38
24.0	17	16	15	53.9	54	51	47	45	12	11	10	65.8	36	34	32	38
24.5	17	16	15	54.9	55	51	48	46	11	10	10	67.1	37	34	32	38
25.0	16	15	14	55.9	55	51	48	46	11	10	9	68.3	37	34	32	38
25.5	16	14	14	56.9	55	51	48	46	10	10	9	69.5	37	34	32	38
26.0	15	14	13	57.8	55	52	48	46	10	9	9	70.7	37	35	32	38
26.5	15	14	13	58.8	56	52	48	46	10	9	8	71.9	37	35	32	39
27.0	14	13	12	59.8	56	52	49	46	9	9	8	73.1	37	35	33	39
27.5	14	13	12	60.8	56	52	49	46	9	8	8	74.3	38	35	33	39
28.0	13	12	11	61.8	56	52	49	46	9	8	8	75.5	38	35	33	39
28.5	13	12	11	62.7	57	53	49	46	9	8	7	76.7	38	35	33	39
29.0	12	12	11	63.7	57	53	49	46	8	8	7	77.8	38	35	33	39
30.0	12	11	10	65.7	57	53	50	46	8	7	7	80.2	38	36	33	39

Column headings are:

- QMD Quadratic mean diameter (the diameter of the tree of average basal area).
- EA Even aged, showing the trees/acre, or basal area/acre, associated with an even-aged stand structure.
- IS Irregular structure; even-aged SDIs were reduced by 7% for an irregular stand structure (see figure 8).
- UA Uneven aged; even-aged SDIs were reduced by 13% for an uneven-aged stand structure (from Long 1995).
- ES Equilateral spacing, in feet, that the trees per acre associated with an even-aged stand structure (EA columns) would have when spaced equilaterally apart; also referred to as triangular spacing.
- CC Canopy cover; based on the “CP” equation from Dealy (1985) and the basal area per acre for an irregular structure (IS columns).

Table 114: Stocking levels for ponderosa pine in the PIPO/CELE/CAGE plant association
(full stocking = 232).

QMD	UPPER MANAGEMENT ZONE (SDI = 82)								LOWER MANAGEMENT ZONE (SDI = 55)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
1.0	4803	4467	4181	3.2	26	24	23	32	3218	2993	2801	4.0	18	16	15	25
1.2	3478	3235	3028	3.8	27	25	24	33	2330	2167	2029	4.6	18	17	16	26
1.4	2648	2462	2305	4.4	28	26	25	34	1774	1650	1544	5.3	19	18	17	26
1.6	2090	1944	1820	4.9	29	27	25	34	1400	1302	1219	6.0	20	18	17	27
1.8	1697	1578	1477	5.4	30	28	26	35	1137	1057	990	6.7	20	19	17	27
2.0	1408	1310	1226	6.0	31	29	27	35	944	877	821	7.3	21	19	18	28
2.2	1190	1106	1036	6.5	31	29	27	35	797	741	694	7.9	21	20	18	28
2.4	1020	948	888	7.0	32	30	28	36	683	635	595	8.6	21	20	19	29
2.6	885	823	771	7.5	33	30	28	36	593	552	516	9.2	22	20	19	29
2.8	776	722	676	8.0	33	31	29	36	520	484	453	9.8	22	21	19	29
3.0	687	639	598	8.6	34	31	29	37	460	428	401	10.5	23	21	20	30
3.2	613	570	534	9.1	34	32	30	37	411	382	357	11.1	23	21	20	30
3.4	551	512	479	9.6	35	32	30	37	369	343	321	11.7	23	22	20	30
3.6	498	463	433	10.1	35	33	31	37	333	310	290	12.3	24	22	21	30
3.8	452	420	394	10.5	36	33	31	38	303	282	264	12.9	24	22	21	30
4.0	413	384	359	11.0	36	34	31	38	277	257	241	13.5	24	22	21	31
4.2	379	352	330	11.5	36	34	32	38	254	236	221	14.1	24	23	21	31
4.4	349	324	304	12.0	37	34	32	38	234	217	203	14.7	25	23	21	31
4.6	322	300	281	12.5	37	35	32	39	216	201	188	15.3	25	23	22	31
4.8	299	278	260	13.0	38	35	33	39	200	186	174	15.8	25	23	22	31
5.0	278	259	242	13.4	38	35	33	39	186	173	162	16.4	25	24	22	32
5.2	260	241	226	13.9	38	36	33	39	174	162	151	17.0	26	24	22	32
5.4	243	226	211	14.4	39	36	34	39	163	151	142	17.6	26	24	23	32
5.6	228	212	198	14.9	39	36	34	39	153	142	133	18.2	26	24	23	32
5.8	214	199	186	15.3	39	36	34	39	143	133	125	18.7	26	24	23	32
6.0	201	187	175	15.8	40	37	34	40	135	126	118	19.3	27	25	23	32
6.2	190	177	165	16.3	40	37	35	40	127	118	111	19.9	27	25	23	33
6.4	180	167	156	16.7	40	37	35	40	120	112	105	20.4	27	25	23	33
6.6	170	158	148	17.2	40	38	35	40	114	106	99	21.0	27	25	24	33
6.8	161	150	141	17.7	41	38	35	40	108	101	94	21.6	27	25	24	33
7.0	153	143	134	18.1	41	38	36	40	103	96	89	22.1	27	26	24	33
7.2	146	136	127	18.6	41	38	36	40	98	91	85	22.7	28	26	24	33
7.4	139	129	121	19.0	42	39	36	41	93	87	81	23.2	28	26	24	33
7.6	133	123	115	19.5	42	39	36	41	89	83	77	23.8	28	26	24	33
7.8	127	118	110	19.9	42	39	37	41	85	79	74	24.4	28	26	25	33
8.0	121	113	105	20.4	42	39	37	41	81	75	71	24.9	28	26	25	34
8.2	116	108	101	20.8	43	40	37	41	78	72	68	25.5	28	26	25	34
8.4	111	103	97	21.3	43	40	37	41	74	69	65	26.0	29	27	25	34
8.6	107	99	93	21.7	43	40	37	41	71	66	62	26.5	29	27	25	34
8.8	102	95	89	22.2	43	40	38	41	69	64	60	27.1	29	27	25	34
9.0	98	91	86	22.6	43	40	38	41	66	61	57	27.6	29	27	25	34
9.2	95	88	82	23.1	44	41	38	41	63	59	55	28.2	29	27	25	34
9.4	91	85	79	23.5	44	41	38	42	61	57	53	28.7	29	27	26	34
9.6	88	82	76	24.0	44	41	38	42	59	55	51	29.3	30	27	26	34
9.8	85	79	74	24.4	44	41	39	42	57	53	49	29.8	30	28	26	34
10.0	82	76	71	24.8	44	41	39	42	55	51	48	30.3	30	28	26	34

10.5 | 75 | 70 | 65 | 25.9 | 45 | 42 | 39 | 42 | 50 | 47 | 44 | 31.7 | 30 | 28 | 26 | 35

Table 114: Stocking levels for ponderosa pine in the PIPO/CELE/CAGE plant association (full stocking = 232).

QMD	UPPER MANAGEMENT ZONE (SDI = 82)								LOWER MANAGEMENT ZONE (SDI = 55)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
11.0	69	64	60	27.0	45	42	40	42	46	43	40	33.0	30	28	27	35
11.5	64	59	55	28.1	46	43	40	42	43	40	37	34.3	31	29	27	35
12.0	59	55	51	29.2	46	43	40	43	40	37	34	35.7	31	29	27	35
12.5	55	51	48	30.3	47	44	41	43	37	34	32	37.0	31	29	27	35
13.0	51	48	45	31.3	47	44	41	43	34	32	30	38.3	32	29	28	36
13.5	48	45	42	32.4	48	44	41	43	32	30	28	39.6	32	30	28	36
14.0	45	42	39	33.4	48	45	42	43	30	28	26	40.9	32	30	28	36
14.5	42	39	37	34.5	48	45	42	43	28	26	25	42.2	32	30	28	36
15.0	40	37	35	35.6	49	45	43	43	27	25	23	43.4	33	30	28	36
15.5	38	35	33	36.6	49	46	43	44	25	23	22	44.7	33	31	29	36
16.0	35	33	31	37.6	50	46	43	44	24	22	21	46.0	33	31	29	36
16.5	34	31	29	38.7	50	46	43	44	23	21	20	47.3	33	31	29	37
17.0	32	30	28	39.7	50	47	44	44	21	20	19	48.5	34	31	29	37
17.5	30	28	26	40.8	51	47	44	44	20	19	18	49.8	34	32	30	37
18.0	29	27	25	41.8	51	47	44	44	19	18	17	51.0	34	32	30	37
18.5	27	26	24	42.8	51	48	45	44	18	17	16	52.3	34	32	30	37
19.0	26	24	23	43.8	52	48	45	44	18	16	15	53.5	35	32	30	37
19.5	25	23	22	44.8	52	48	45	45	17	16	15	54.8	35	32	30	37
20.0	24	22	21	45.9	52	49	45	45	16	15	14	56.0	35	33	30	37
20.5	23	21	20	46.9	52	49	46	45	15	14	13	57.3	35	33	31	37
21.0	22	20	19	47.9	53	49	46	45	15	14	13	58.5	35	33	31	38
21.5	21	20	18	48.9	53	49	46	45	14	13	12	59.7	36	33	31	38
22.0	20	19	18	49.9	53	50	46	45	14	13	12	61.0	36	33	31	38
22.5	19	18	17	50.9	54	50	47	45	13	12	11	62.2	36	33	31	38
23.0	19	17	16	51.9	54	50	47	45	13	12	11	63.4	36	34	31	38
23.5	18	17	16	52.9	54	50	47	45	12	11	10	64.6	36	34	32	38
24.0	17	16	15	53.9	54	51	47	45	12	11	10	65.8	36	34	32	38
24.5	17	16	15	54.9	55	51	48	46	11	10	10	67.1	37	34	32	38
25.0	16	15	14	55.9	55	51	48	46	11	10	9	68.3	37	34	32	38
25.5	16	14	14	56.9	55	51	48	46	10	10	9	69.5	37	34	32	38
26.0	15	14	13	57.8	55	52	48	46	10	9	9	70.7	37	35	32	38
26.5	15	14	13	58.8	56	52	48	46	10	9	8	71.9	37	35	32	39
27.0	14	13	12	59.8	56	52	49	46	9	9	8	73.1	37	35	33	39
27.5	14	13	12	60.8	56	52	49	46	9	8	8	74.3	38	35	33	39
28.0	13	12	11	61.8	56	52	49	46	9	8	8	75.5	38	35	33	39
28.5	13	12	11	62.7	57	53	49	46	9	8	7	76.7	38	35	33	39
29.0	12	12	11	63.7	57	53	49	46	8	8	7	77.8	38	35	33	39
30.0	12	11	10	65.7	57	53	50	46	8	7	7	80.2	38	36	33	39

Column headings are:

- QMD Quadratic mean diameter (the diameter of the tree of average basal area).
- EA Even aged, showing the trees/acre, or basal area/acre, associated with an even-aged stand structure.
- IS Irregular structure; even-aged SDIs were reduced by 7% for an irregular stand structure (see figure 8).
- UA Uneven aged; even-aged SDIs were reduced by 13% for an uneven-aged stand structure (from Long 1995).
- ES Equilateral spacing, in feet, that the trees per acre associated with an even-aged stand structure (EA columns) would have when spaced equilaterally apart; also referred to as triangular spacing.
- CC Canopy cover; based on the “CP” equation from Dealy (1985) and the basal area per acre for an irregular structure (IS columns).

Table 115: Stocking levels for ponderosa pine in the PIPO/CELE/FEID-AGSP plant association
(full stocking = 157).

QMD	UPPER MANAGEMENT ZONE (SDI = 32)								LOWER MANAGEMENT ZONE (SDI = 21)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
1.0	1874	1742	1631	5.2	10	10	9	16	1255	1167	1093	6.3	7	6	6	9
1.2	1357	1262	1181	6.1	11	10	9	16	909	845	791	7.4	7	7	6	10
1.4	1033	961	899	7.0	11	10	10	17	692	644	602	8.5	7	7	6	10
1.6	815	758	710	7.9	11	11	10	17	546	508	476	9.6	8	7	7	11
1.8	662	616	576	8.7	12	11	10	18	444	412	386	10.6	8	7	7	11
2.0	549	511	478	9.6	12	11	10	18	368	342	320	11.7	8	7	7	12
2.2	464	432	404	10.4	12	11	11	19	311	289	271	12.7	8	8	7	12
2.4	398	370	346	11.2	12	12	11	19	267	248	232	13.7	8	8	7	12
2.6	345	321	301	12.1	13	12	11	19	231	215	201	14.7	9	8	7	13
2.8	303	282	264	12.9	13	12	11	20	203	189	177	15.7	9	8	8	13
3.0	268	249	233	13.7	13	12	11	20	180	167	156	16.7	9	8	8	13
3.2	239	222	208	14.5	13	12	12	20	160	149	139	17.7	9	8	8	13
3.4	215	200	187	15.3	14	13	12	20	144	134	125	18.7	9	8	8	14
3.6	194	181	169	16.1	14	13	12	21	130	121	113	19.7	9	9	8	14
3.8	176	164	154	16.9	14	13	12	21	118	110	103	20.6	9	9	8	14
4.0	161	150	140	17.7	14	13	12	21	108	100	94	21.6	9	9	8	14
4.2	148	137	129	18.5	14	13	12	21	99	92	86	22.5	10	9	8	14
4.4	136	127	118	19.2	14	13	13	21	91	85	79	23.5	10	9	8	15
4.6	126	117	110	20.0	15	14	13	22	84	78	73	24.4	10	9	8	15
4.8	117	108	102	20.8	15	14	13	22	78	73	68	25.4	10	9	9	15
5.0	109	101	94	21.5	15	14	13	22	73	68	63	26.3	10	9	9	15
5.2	101	94	88	22.3	15	14	13	22	68	63	59	27.2	10	9	9	15
5.4	95	88	82	23.0	15	14	13	22	63	59	55	28.2	10	9	9	15
5.6	89	83	77	23.8	15	14	13	22	59	55	52	29.1	10	9	9	16
5.8	83	78	73	24.6	15	14	13	23	56	52	49	30.0	10	10	9	16
6.0	79	73	68	25.3	15	14	13	23	53	49	46	30.9	10	10	9	16
6.2	74	69	65	26.0	16	14	14	23	50	46	43	31.8	10	10	9	16
6.4	70	65	61	26.8	16	15	14	23	47	44	41	32.7	10	10	9	16
6.6	66	62	58	27.5	16	15	14	23	44	41	39	33.6	11	10	9	16
6.8	63	59	55	28.3	16	15	14	23	42	39	37	34.5	11	10	9	16
7.0	60	56	52	29.0	16	15	14	23	40	37	35	35.4	11	10	9	16
7.2	57	53	50	29.7	16	15	14	23	38	35	33	36.3	11	10	9	17
7.4	54	50	47	30.5	16	15	14	24	36	34	32	37.2	11	10	9	17
7.6	52	48	45	31.2	16	15	14	24	35	32	30	38.1	11	10	10	17
7.8	49	46	43	31.9	16	15	14	24	33	31	29	39.0	11	10	10	17
8.0	47	44	41	32.6	16	15	14	24	32	29	28	39.9	11	10	10	17
8.2	45	42	39	33.4	17	15	14	24	30	28	26	40.8	11	10	10	17
8.4	43	40	38	34.1	17	16	15	24	29	27	25	41.6	11	10	10	17
8.6	42	39	36	34.8	17	16	15	24	28	26	24	42.5	11	10	10	17
8.8	40	37	35	35.5	17	16	15	24	27	25	23	43.4	11	11	10	17
9.0	38	36	33	36.2	17	16	15	24	26	24	22	44.2	11	11	10	17
9.2	37	34	32	36.9	17	16	15	24	25	23	22	45.1	11	11	10	17
9.4	36	33	31	37.6	17	16	15	25	24	22	21	46.0	11	11	10	18
9.6	34	32	30	38.3	17	16	15	25	23	21	20	46.9	12	11	10	18
9.8	33	31	29	39.1	17	16	15	25	22	21	19	47.7	12	11	10	18
10.0	32	30	28	39.8	17	16	15	25	21	20	19	48.6	12	11	10	18
10.5	29	27	25	41.5	18	16	15	25	20	18	17	50.7	12	11	10	18

Table 115: Stocking levels for ponderosa pine in the PIPO/CELE/FEID-AGSP plant association (full stocking = 157).

QMD	UPPER MANAGEMENT ZONE (SDI = 32)								LOWER MANAGEMENT ZONE (SDI = 21)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
11.0	27	25	23	43.3	18	16	15	25	18	17	16	52.8	12	11	10	18
11.5	25	23	22	45.0	18	17	16	25	17	15	14	55.0	12	11	10	18
12.0	23	21	20	46.7	18	17	16	26	15	14	13	57.1	12	11	11	19
12.5	21	20	19	48.4	18	17	16	26	14	13	13	59.2	12	11	11	19
13.0	20	19	17	50.2	18	17	16	26	13	12	12	61.3	12	11	11	19
13.5	19	17	16	51.9	19	17	16	26	13	12	11	63.4	12	12	11	19
14.0	18	16	15	53.6	19	17	16	26	12	11	10	65.4	13	12	11	19
14.5	16	15	14	55.2	19	18	16	26	11	10	10	67.5	13	12	11	19
15.0	16	14	14	56.9	19	18	17	26	10	10	9	69.5	13	12	11	19
15.5	15	14	13	58.6	19	18	17	27	10	9	9	71.6	13	12	11	20
16.0	14	13	12	60.3	19	18	17	27	9	9	8	73.6	13	12	11	20
16.5	13	12	11	61.9	19	18	17	27	9	8	8	75.7	13	12	11	20
17.0	12	12	11	63.6	20	18	17	27	8	8	7	77.7	13	12	11	20
17.5	12	11	10	65.2	20	18	17	27	8	7	7	79.7	13	12	12	20
18.0	11	10	10	66.9	20	18	17	27	8	7	7	81.7	13	12	12	20
18.5	11	10	9	68.5	20	19	17	27	7	7	6	83.7	13	12	12	20
19.0	10	10	9	70.2	20	19	18	27	7	6	6	85.7	13	13	12	20
19.5	10	9	8	71.8	20	19	18	28	7	6	6	87.7	14	13	12	20
20.0	9	9	8	73.4	20	19	18	28	6	6	5	89.7	14	13	12	21
20.5	9	8	8	75.0	20	19	18	28	6	6	5	91.7	14	13	12	21
21.0	9	8	7	76.7	21	19	18	28	6	5	5	93.7	14	13	12	21
21.5	8	8	7	78.3	21	19	18	28	5	5	5	95.6	14	13	12	21
22.0	8	7	7	79.9	21	19	18	28	5	5	5	97.6	14	13	12	21
22.5	8	7	7	81.5	21	19	18	28	5	5	4	99.6	14	13	12	21
23.0	7	7	6	83.1	21	20	18	28	5	5	4	101.5	14	13	12	21
23.5	7	7	6	84.7	21	20	18	28	5	4	4	103.5	14	13	12	21
24.0	7	6	6	86.3	21	20	18	28	5	4	4	105.4	14	13	12	21
24.5	7	6	6	87.9	21	20	19	28	4	4	4	107.4	14	13	12	21
25.0	6	6	5	89.5	21	20	19	29	4	4	4	109.3	14	13	12	21
25.5	6	6	5	91.0	22	20	19	29	4	4	4	111.2	14	13	13	22
26.0	6	5	5	92.6	22	20	19	29	4	4	3	113.1	14	13	13	22
26.5	6	5	5	94.2	22	20	19	29	4	4	3	115.1	15	14	13	22
27.0	5	5	5	95.8	22	20	19	29	4	3	3	117.0	15	14	13	22
27.5	5	5	5	97.3	22	20	19	29	4	3	3	118.9	15	14	13	22
28.0	5	5	4	98.9	22	20	19	29	3	3	3	120.8	15	14	13	22
28.5	5	5	4	100.5	22	21	19	29	3	3	3	122.7	15	14	13	22
29.0	5	4	4	102.0	22	21	19	29	3	3	3	124.6	15	14	13	22
30.0	5	4	4	105.1	22	21	19	29	3	3	3	128.4	15	14	13	22

Column headings are:

- QMD Quadratic mean diameter (the diameter of the tree of average basal area).
- EA Even aged, showing the trees/acre, or basal area/acre, associated with an even-aged stand structure.
- IS Irregular structure; even-aged SDIs were reduced by 7% for an irregular stand structure (see figure 8).
- UA Uneven aged; even-aged SDIs were reduced by 13% for an uneven-aged stand structure (from Long 1995).
- ES Equilateral spacing, in feet, that the trees per acre associated with an even-aged stand structure (EA columns) would have when spaced equilaterally apart; also referred to as triangular spacing.
- CC Canopy cover; based on the “CP” equation from Dealy (1985) and the basal area per acre for an irregular structure (IS columns).

Table 116: Stocking levels for ponderosa pine in the PIPO/PUTR/CAGE plant association
(full stocking = 204).

QMD	UPPER MANAGEMENT ZONE (SDI = 70)								LOWER MANAGEMENT ZONE (SDI = 47)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
1.0	4099	3812	3569	3.5	22	21	19	29	2746	2554	2391	4.3	15	14	13	22
1.2	2968	2761	2584	4.1	23	22	20	30	1989	1850	1731	5.0	16	15	14	23
1.4	2260	2101	1967	4.7	24	22	21	31	1514	1408	1318	5.8	16	15	14	24
1.6	1784	1659	1553	5.3	25	23	22	31	1195	1112	1041	6.5	17	16	15	24
1.8	1448	1347	1261	5.9	26	24	22	32	970	902	845	7.2	17	16	15	25
2.0	1202	1118	1046	6.5	26	24	23	32	805	749	701	7.9	18	16	15	25
2.2	1015	944	884	7.0	27	25	23	33	680	633	592	8.6	18	17	16	25
2.4	870	809	758	7.6	27	25	24	33	583	542	508	9.3	18	17	16	26
2.6	755	703	658	8.2	28	26	24	33	506	471	441	10.0	19	17	16	26
2.8	663	616	577	8.7	28	26	25	34	444	413	386	10.6	19	18	17	26
3.0	586	545	510	9.3	29	27	25	34	393	365	342	11.3	19	18	17	27
3.2	523	486	455	9.8	29	27	25	34	350	326	305	12.0	20	18	17	27
3.4	470	437	409	10.3	30	28	26	34	315	293	274	12.6	20	18	17	27
3.6	425	395	370	10.9	30	28	26	35	285	265	248	13.3	20	19	18	27
3.8	386	359	336	11.4	30	28	26	35	259	240	225	13.9	20	19	18	28
4.0	352	328	307	11.9	31	29	27	35	236	220	206	14.6	21	19	18	28
4.2	323	301	281	12.5	31	29	27	35	217	201	189	15.2	21	19	18	28
4.4	298	277	259	13.0	31	29	27	35	199	185	174	15.9	21	20	18	28
4.6	275	256	240	13.5	32	30	28	36	184	171	161	16.5	21	20	19	28
4.8	255	237	222	14.0	32	30	28	36	171	159	149	17.2	21	20	19	29
5.0	237	221	207	14.6	32	30	28	36	159	148	138	17.8	22	20	19	29
5.2	221	206	193	15.1	33	30	28	36	148	138	129	18.4	22	20	19	29
5.4	207	193	180	15.6	33	31	29	36	139	129	121	19.0	22	21	19	29
5.6	194	181	169	16.1	33	31	29	36	130	121	113	19.7	22	21	19	29
5.8	183	170	159	16.6	33	31	29	37	122	114	106	20.3	22	21	20	29
6.0	172	160	150	17.1	34	31	29	37	115	107	100	20.9	23	21	20	30
6.2	162	151	141	17.6	34	32	30	37	109	101	95	21.5	23	21	20	30
6.4	153	143	134	18.1	34	32	30	37	103	96	89	22.1	23	21	20	30
6.6	145	135	126	18.6	35	32	30	37	97	90	85	22.7	23	22	20	30
6.8	138	128	120	19.1	35	32	30	37	92	86	80	23.3	23	22	20	30
7.0	131	122	114	19.6	35	33	30	37	88	82	76	24.0	23	22	20	30
7.2	125	116	108	20.1	35	33	31	38	83	78	73	24.6	24	22	21	30
7.4	119	110	103	20.6	35	33	31	38	79	74	69	25.2	24	22	21	30
7.6	113	105	99	21.1	36	33	31	38	76	70	66	25.8	24	22	21	30
7.8	108	100	94	21.6	36	33	31	38	72	67	63	26.4	24	22	21	31
8.0	103	96	90	22.1	36	34	31	38	69	64	60	27.0	24	22	21	31
8.2	99	92	86	22.6	36	34	32	38	66	62	58	27.6	24	23	21	31
8.4	95	88	83	23.0	36	34	32	38	63	59	55	28.1	24	23	21	31
8.6	91	85	79	23.5	37	34	32	38	61	57	53	28.7	25	23	21	31
8.8	87	81	76	24.0	37	34	32	38	58	54	51	29.3	25	23	22	31
9.0	84	78	73	24.5	37	34	32	38	56	52	49	29.9	25	23	22	31
9.2	81	75	70	25.0	37	35	32	39	54	50	47	30.5	25	23	22	31
9.4	78	72	68	25.4	37	35	33	39	52	48	45	31.1	25	23	22	31
9.6	75	70	65	25.9	38	35	33	39	50	47	44	31.7	25	23	22	31
9.8	72	67	63	26.4	38	35	33	39	48	45	42	32.3	25	24	22	32
10.0	70	65	61	26.9	38	35	33	39	47	43	41	32.8	25	24	22	32
10.5	64	59	56	28.1	38	36	33	39	43	40	37	34.3	26	24	22	32

Table 116: Stocking levels for ponderosa pine in the PIPO/PUTR/CAGE plant association
(full stocking = 204).

QMD	UPPER MANAGEMENT ZONE (SDI = 70)								LOWER MANAGEMENT ZONE (SDI = 47)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
11.0	59	55	51	29.2	39	36	34	39	39	37	34	35.7	26	24	23	32
11.5	54	51	47	30.4	39	36	34	39	36	34	32	37.2	26	24	23	32
12.0	50	47	44	31.6	40	37	34	40	34	31	29	38.6	27	25	23	32
12.5	47	44	41	32.8	40	37	35	40	31	29	27	40.0	27	25	23	33
13.0	44	41	38	33.9	40	38	35	40	29	27	26	41.4	27	25	24	33
13.5	41	38	36	35.1	41	38	35	40	27	25	24	42.8	27	25	24	33
14.0	38	36	33	36.2	41	38	36	40	26	24	22	44.2	27	26	24	33
14.5	36	34	31	37.3	41	38	36	40	24	22	21	45.6	28	26	24	33
15.0	34	32	30	38.5	42	39	36	41	23	21	20	47.0	28	26	24	33
15.5	32	30	28	39.6	42	39	37	41	21	20	19	48.4	28	26	24	33
16.0	30	28	26	40.7	42	39	37	41	20	19	18	49.8	28	26	25	34
16.5	29	27	25	41.9	43	40	37	41	19	18	17	51.2	29	27	25	34
17.0	27	25	24	43.0	43	40	37	41	18	17	16	52.5	29	27	25	34
17.5	26	24	23	44.1	43	40	38	41	17	16	15	53.9	29	27	25	34
18.0	25	23	21	45.2	43	40	38	41	16	15	14	55.2	29	27	25	34
18.5	23	22	20	46.3	44	41	38	41	16	15	14	56.6	29	27	26	34
19.0	22	21	19	47.4	44	41	38	42	15	14	13	58.0	29	27	26	34
19.5	21	20	19	48.5	44	41	39	42	14	13	12	59.3	30	28	26	34
20.0	20	19	18	49.6	45	41	39	42	14	13	12	60.6	30	28	26	35
20.5	20	18	17	50.7	45	42	39	42	13	12	11	62.0	30	28	26	35
21.0	19	17	16	51.8	45	42	39	42	13	12	11	63.3	30	28	26	35
21.5	18	17	16	52.9	45	42	39	42	12	11	10	64.7	30	28	26	35
22.0	17	16	15	54.0	46	42	40	42	12	11	10	66.0	30	28	27	35
22.5	17	15	14	55.1	46	43	40	42	11	10	10	67.3	31	29	27	35
23.0	16	15	14	56.2	46	43	40	42	11	10	9	68.6	31	29	27	35
23.5	15	14	13	57.3	46	43	40	42	10	10	9	70.0	31	29	27	35
24.0	15	14	13	58.3	46	43	40	43	10	9	9	71.3	31	29	27	35
24.5	14	13	12	59.4	47	43	41	43	10	9	8	72.6	31	29	27	35
25.0	14	13	12	60.5	47	44	41	43	9	9	8	73.9	31	29	27	35
25.5	13	12	12	61.6	47	44	41	43	9	8	8	75.2	32	29	27	36
26.0	13	12	11	62.6	47	44	41	43	9	8	7	76.5	32	29	28	36
26.5	12	12	11	63.7	48	44	41	43	8	8	7	77.8	32	30	28	36
27.0	12	11	10	64.7	48	44	42	43	8	7	7	79.1	32	30	28	36
27.5	12	11	10	65.8	48	45	42	43	8	7	7	80.4	32	30	28	36
28.0	11	10	10	66.9	48	45	42	43	8	7	7	81.7	32	30	28	36
28.5	11	10	9	67.9	48	45	42	43	7	7	6	83.0	32	30	28	36
29.0	11	10	9	69.0	49	45	42	43	7	7	6	84.3	32	30	28	36
30.0	10	9	9	71.1	49	45	43	44	7	6	6	86.8	33	30	29	36

Column headings are:

- QMD Quadratic mean diameter (the diameter of the tree of average basal area).
- EA Even aged, showing the trees/acre, or basal area/acre, associated with an even-aged stand structure.
- IS Irregular structure; even-aged SDIs were reduced by 7% for an irregular stand structure (see figure 8).
- UA Uneven aged; even-aged SDIs were reduced by 13% for an uneven-aged stand structure (from Long 1995).
- ES Equilateral spacing, in feet, that the trees per acre associated with an even-aged stand structure (EA columns) would have when spaced equilaterally apart; also referred to as triangular spacing.
- CC Canopy cover; based on the “CP” equation from Dealy (1985) and the basal area per acre for an irregular structure (IS columns).

Table 117: Stocking levels for ponderosa pine in the PIPO/PUTR/CARO plant association
(full stocking = 243).

QMD	UPPER MANAGEMENT ZONE (SDI = 92)								LOWER MANAGEMENT ZONE (SDI = 61)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
1.0	5388	5011	4691	3.1	29	27	26	34	3610	3357	3143	3.7	20	18	17	27
1.2	3902	3629	3397	3.6	31	29	27	35	2614	2431	2276	4.4	21	19	18	28
1.4	2970	2762	2586	4.1	32	30	28	36	1990	1851	1733	5.0	21	20	19	28
1.6	2345	2181	2042	4.6	33	30	29	36	1571	1461	1368	5.7	22	20	19	29
1.8	1904	1770	1657	5.1	34	31	29	37	1276	1186	1110	6.3	23	21	20	29
2.0	1580	1469	1375	5.6	34	32	30	37	1059	984	922	6.9	23	21	20	30
2.2	1335	1241	1162	6.1	35	33	31	38	894	832	778	7.5	24	22	21	30
2.4	1144	1064	996	6.6	36	33	31	38	767	713	667	8.1	24	22	21	31
2.6	993	923	864	7.1	37	34	32	38	665	619	579	8.7	25	23	21	31
2.8	871	810	758	7.6	37	35	32	39	584	543	508	9.3	25	23	22	31
3.0	771	717	671	8.1	38	35	33	39	516	480	450	9.9	25	24	22	32
3.2	688	639	599	8.6	38	36	33	39	461	428	401	10.4	26	24	22	32
3.4	618	574	538	9.0	39	36	34	39	414	385	360	11.0	26	24	23	32
3.6	558	519	486	9.5	39	37	34	40	374	348	326	11.6	26	25	23	32
3.8	507	472	442	10.0	40	37	35	40	340	316	296	12.2	27	25	23	33
4.0	463	431	403	10.4	40	38	35	40	310	289	270	12.7	27	25	24	33
4.2	425	395	370	10.9	41	38	36	40	285	265	248	13.3	27	25	24	33
4.4	391	364	341	11.3	41	38	36	40	262	244	228	13.9	28	26	24	33
4.6	362	336	315	11.8	42	39	36	41	242	225	211	14.4	28	26	24	33
4.8	335	312	292	12.2	42	39	37	41	225	209	196	15.0	28	26	25	34
5.0	312	290	272	12.7	43	40	37	41	209	194	182	15.5	29	27	25	34
5.2	291	271	253	13.1	43	40	37	41	195	181	170	16.1	29	27	25	34
5.4	272	253	237	13.6	43	40	38	41	182	170	159	16.6	29	27	25	34
5.6	255	237	222	14.0	44	41	38	41	171	159	149	17.1	29	27	25	34
5.8	240	223	209	14.5	44	41	38	42	161	150	140	17.7	30	27	26	34
6.0	226	210	197	14.9	44	41	39	42	151	141	132	18.2	30	28	26	34
6.2	213	198	186	15.4	45	42	39	42	143	133	124	18.8	30	28	26	35
6.4	202	187	176	15.8	45	42	39	42	135	126	118	19.3	30	28	26	35
6.6	191	178	166	16.2	45	42	39	42	128	119	111	19.8	30	28	26	35
6.8	181	168	158	16.7	46	42	40	42	121	113	106	20.4	31	28	27	35
7.0	172	160	150	17.1	46	43	40	42	115	107	100	20.9	31	29	27	35
7.2	164	152	142	17.5	46	43	40	43	110	102	95	21.4	31	29	27	35
7.4	156	145	136	18.0	47	43	41	43	104	97	91	21.9	31	29	27	35
7.6	149	138	129	18.4	47	44	41	43	100	93	87	22.5	31	29	27	35
7.8	142	132	124	18.8	47	44	41	43	95	89	83	23.0	32	29	27	36
8.0	136	126	118	19.2	47	44	41	43	91	85	79	23.5	32	30	28	36
8.2	130	121	113	19.7	48	44	42	43	87	81	76	24.0	32	30	28	36
8.4	125	116	108	20.1	48	45	42	43	83	78	73	24.5	32	30	28	36
8.6	120	111	104	20.5	48	45	42	43	80	74	70	25.1	32	30	28	36
8.8	115	107	100	20.9	48	45	42	43	77	71	67	25.6	32	30	28	36
9.0	110	103	96	21.4	49	45	42	43	74	69	64	26.1	33	30	28	36
9.2	106	99	92	21.8	49	46	43	44	71	66	62	26.6	33	31	29	36
9.4	102	95	89	22.2	49	46	43	44	68	64	60	27.1	33	31	29	36
9.6	98	91	86	22.6	49	46	43	44	66	61	57	27.6	33	31	29	36
9.8	95	88	83	23.0	50	46	43	44	64	59	55	28.1	33	31	29	36
10.0	92	85	80	23.4	50	46	43	44	61	57	53	28.6	33	31	29	37
10.5	84	78	73	24.5	50	47	44	44	56	52	49	29.9	34	31	29	37

Table 117: Stocking levels for ponderosa pine in the PIPO/PUTR/CARO plant association (full stocking = 243).

QMD	UPPER MANAGEMENT ZONE (SDI = 92)								LOWER MANAGEMENT ZONE (SDI = 61)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
11.0	77	72	67	25.5	51	47	44	44	52	48	45	31.2	34	32	30	37
11.5	71	66	62	26.5	52	48	45	44	48	45	42	32.4	35	32	30	37
12.0	66	62	58	27.6	52	48	45	45	44	41	39	33.7	35	32	30	37
12.5	62	57	54	28.6	53	49	46	45	41	38	36	34.9	35	33	31	38
13.0	58	53	50	29.6	53	49	46	45	39	36	34	36.1	36	33	31	38
13.5	54	50	47	30.6	53	50	47	45	36	34	31	37.4	36	33	31	38
14.0	50	47	44	31.6	54	50	47	45	34	31	29	38.6	36	34	31	38
14.5	47	44	41	32.6	54	51	47	45	32	30	28	39.8	36	34	32	38
15.0	45	42	39	33.6	55	51	48	46	30	28	26	41.0	37	34	32	38
15.5	42	39	37	34.6	55	51	48	46	28	26	25	42.2	37	34	32	38
16.0	40	37	35	35.5	56	52	48	46	27	25	23	43.4	37	35	32	39
16.5	38	35	33	36.5	56	52	49	46	25	23	22	44.6	38	35	33	39
17.0	36	33	31	37.5	56	52	49	46	24	22	21	45.8	38	35	33	39
17.5	34	32	30	38.5	57	53	49	46	23	21	20	47.0	38	35	33	39
18.0	32	30	28	39.4	57	53	50	46	22	20	19	48.2	38	36	33	39
18.5	31	29	27	40.4	57	53	50	47	21	19	18	49.4	39	36	34	39
19.0	29	27	26	41.4	58	54	50	47	20	18	17	50.6	39	36	34	39
19.5	28	26	24	42.3	58	54	51	47	19	17	16	51.7	39	36	34	39
20.0	27	25	23	43.3	59	54	51	47	18	17	16	52.9	39	36	34	39
20.5	26	24	22	44.3	59	55	51	47	17	16	15	54.1	39	37	34	40
21.0	25	23	21	45.2	59	55	52	47	16	15	14	55.2	40	37	35	40
21.5	24	22	21	46.2	60	55	52	47	16	15	14	56.4	40	37	35	40
22.0	23	21	20	47.1	60	56	52	47	15	14	13	57.6	40	37	35	40
22.5	22	20	19	48.1	60	56	52	47	15	14	13	58.7	40	37	35	40
23.0	21	19	18	49.0	60	56	53	47	14	13	12	59.9	40	38	35	40
23.5	20	19	18	49.9	61	56	53	48	14	13	12	61.0	41	38	35	40
24.0	19	18	17	50.9	61	57	53	48	13	12	11	62.2	41	38	36	40
24.5	19	17	16	51.8	61	57	53	48	13	12	11	63.3	41	38	36	40
25.0	18	17	16	52.8	62	57	54	48	12	11	11	64.4	41	38	36	40
25.5	17	16	15	53.7	62	58	54	48	12	11	10	65.6	41	39	36	41
26.0	17	16	15	54.6	62	58	54	48	11	11	10	66.7	42	39	36	41
26.5	16	15	14	55.5	62	58	54	48	11	10	10	67.9	42	39	36	41
27.0	16	15	14	56.5	63	58	55	48	11	10	9	69.0	42	39	37	41
27.5	15	14	13	57.4	63	59	55	48	10	10	9	70.1	42	39	37	41
28.0	15	14	13	58.3	63	59	55	48	10	9	9	71.2	42	39	37	41
28.5	14	13	12	59.2	64	59	55	48	10	9	8	72.4	43	40	37	41
29.0	14	13	12	60.2	64	59	56	48	9	9	8	73.5	43	40	37	41
30.0	13	12	11	62.0	64	60	56	49	9	8	8	75.7	43	40	37	41

Column headings are:

- QMD Quadratic mean diameter (the diameter of the tree of average basal area).
- EA Even aged, showing the trees/acre, or basal area/acre, associated with an even-aged stand structure.
- IS Irregular structure; even-aged SDIs were reduced by 7% for an irregular stand structure (see figure 8).
- UA Uneven aged; even-aged SDIs were reduced by 13% for an uneven-aged stand structure (from Long 1995).
- ES Equilateral spacing, in feet, that the trees per acre associated with an even-aged stand structure (EA columns) would have when spaced equilaterally apart; also referred to as triangular spacing.
- CC Canopy cover; based on the “CP” equation from Dealy (1985) and the basal area per acre for an irregular structure (IS columns).

Table 118: Stocking levels for ponderosa pine in the PIPO/PUTR/FEID-AGSP plant association (full stocking = 185).

QMD	UPPER MANAGEMENT ZONE (SDI = 66)								LOWER MANAGEMENT ZONE (SDI = 44)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
1.0	3865	3595	3365	3.6	21	20	18	28	2590	2408	2255	4.4	14	13	12	21
1.2	2799	2603	2437	4.2	22	20	19	29	1875	1744	1633	5.2	15	14	13	22
1.4	2131	1982	1855	4.9	23	21	20	30	1428	1328	1243	5.9	15	14	13	23
1.6	1682	1564	1465	5.5	23	22	20	30	1127	1048	981	6.7	16	15	14	23
1.8	1366	1270	1189	6.1	24	22	21	31	915	851	797	7.4	16	15	14	24
2.0	1133	1054	987	6.7	25	23	22	31	759	706	661	8.1	17	15	14	24
2.2	957	890	834	7.2	25	24	22	32	641	597	558	8.9	17	16	15	24
2.4	821	763	715	7.8	26	24	22	32	550	511	479	9.6	17	16	15	25
2.6	712	662	620	8.4	26	24	23	32	477	444	415	10.3	18	16	15	25
2.8	625	581	544	9.0	27	25	23	33	419	389	364	11.0	18	17	16	25
3.0	553	514	481	9.5	27	25	24	33	370	345	323	11.7	18	17	16	26
3.2	493	459	429	10.1	28	26	24	33	330	307	288	12.3	18	17	16	26
3.4	443	412	386	10.7	28	26	24	33	297	276	258	13.0	19	17	16	26
3.6	400	372	349	11.2	28	26	25	34	268	250	234	13.7	19	18	17	26
3.8	364	338	317	11.8	29	27	25	34	244	227	212	14.4	19	18	17	27
4.0	332	309	289	12.3	29	27	25	34	223	207	194	15.0	19	18	17	27
4.2	305	283	265	12.8	29	27	26	34	204	190	178	15.7	20	18	17	27
4.4	281	261	244	13.4	30	28	26	34	188	175	164	16.4	20	18	17	27
4.6	259	241	226	13.9	30	28	26	35	174	162	151	17.0	20	19	17	27
4.8	241	224	210	14.5	30	28	26	35	161	150	140	17.7	20	19	18	28
5.0	224	208	195	15.0	31	28	27	35	150	139	131	18.3	20	19	18	28
5.2	209	194	182	15.5	31	29	27	35	140	130	122	19.0	21	19	18	28
5.4	195	182	170	16.0	31	29	27	35	131	122	114	19.6	21	19	18	28
5.6	183	170	159	16.6	31	29	27	35	123	114	107	20.2	21	20	18	28
5.8	172	160	150	17.1	32	29	27	36	115	107	100	20.9	21	20	18	28
6.0	162	151	141	17.6	32	30	28	36	109	101	95	21.5	21	20	19	28
6.2	153	142	133	18.1	32	30	28	36	102	95	89	22.2	21	20	19	29
6.4	145	134	126	18.6	32	30	28	36	97	90	84	22.8	22	20	19	29
6.6	137	127	119	19.2	33	30	28	36	92	85	80	23.4	22	20	19	29
6.8	130	121	113	19.7	33	30	29	36	87	81	76	24.0	22	20	19	29
7.0	123	115	107	20.2	33	31	29	36	83	77	72	24.7	22	21	19	29
7.2	117	109	102	20.7	33	31	29	36	79	73	68	25.3	22	21	19	29
7.4	112	104	97	21.2	33	31	29	37	75	70	65	25.9	22	21	19	29
7.6	107	99	93	21.7	34	31	29	37	71	66	62	26.5	23	21	20	29
7.8	102	95	89	22.2	34	31	29	37	68	63	59	27.1	23	21	20	30
8.0	97	91	85	22.7	34	32	30	37	65	61	57	27.8	23	21	20	30
8.2	93	87	81	23.2	34	32	30	37	62	58	54	28.4	23	21	20	30
8.4	89	83	78	23.7	34	32	30	37	60	56	52	29.0	23	21	20	30
8.6	86	80	75	24.2	35	32	30	37	57	53	50	29.6	23	22	20	30
8.8	82	77	72	24.7	35	32	30	37	55	51	48	30.2	23	22	20	30
9.0	79	74	69	25.2	35	32	30	37	53	49	46	30.8	23	22	20	30
9.2	76	71	66	25.7	35	33	31	37	51	47	44	31.4	24	22	20	30
9.4	73	68	64	26.2	35	33	31	38	49	46	43	32.0	24	22	21	30
9.6	71	66	61	26.7	35	33	31	38	47	44	41	32.6	24	22	21	30
9.8	68	63	59	27.2	36	33	31	38	46	42	40	33.2	24	22	21	30
10.0	66	61	57	27.7	36	33	31	38	44	41	38	33.8	24	22	21	31
10.5	60	56	52	28.9	36	34	32	38	40	38	35	35.3	24	23	21	31

Table 118: Stocking levels for ponderosa pine in the PIPO/PUTR/FEID-AGSP plant association (full stocking = 185).

QMD	UPPER MANAGEMENT ZONE (SDI = 66)								LOWER MANAGEMENT ZONE (SDI = 44)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
11.0	55	52	48	30.1	37	34	32	38	37	35	32	36.8	25	23	21	31
11.5	51	48	45	31.3	37	34	32	38	34	32	30	38.3	25	23	22	31
12.0	48	44	41	32.5	37	35	33	39	32	30	28	39.7	25	23	22	31
12.5	44	41	39	33.7	38	35	33	39	30	28	26	41.2	25	23	22	31
13.0	41	38	36	34.9	38	35	33	39	28	26	24	42.7	25	24	22	32
13.5	39	36	34	36.1	38	36	33	39	26	24	23	44.1	26	24	22	32
14.0	36	34	32	37.3	39	36	34	39	24	23	21	45.5	26	24	23	32
14.5	34	32	30	38.5	39	36	34	39	23	21	20	47.0	26	24	23	32
15.0	32	30	28	39.6	39	37	34	40	21	20	19	48.4	26	24	23	32
15.5	30	28	26	40.8	40	37	34	40	20	19	18	49.8	27	25	23	32
16.0	29	27	25	42.0	40	37	35	40	19	18	17	51.3	27	25	23	33
16.5	27	25	24	43.1	40	37	35	40	18	17	16	52.7	27	25	23	33
17.0	26	24	22	44.3	40	38	35	40	17	16	15	54.1	27	25	24	33
17.5	24	23	21	45.4	41	38	35	40	16	15	14	55.5	27	25	24	33
18.0	23	22	20	46.6	41	38	36	40	16	14	14	56.9	27	26	24	33
18.5	22	21	19	47.7	41	38	36	40	15	14	13	58.3	28	26	24	33
19.0	21	20	18	48.9	41	39	36	41	14	13	12	59.7	28	26	24	33
19.5	20	19	18	50.0	42	39	36	41	13	13	12	61.1	28	26	24	33
20.0	19	18	17	51.1	42	39	37	41	13	12	11	62.5	28	26	24	33
20.5	18	17	16	52.3	42	39	37	41	12	11	11	63.8	28	26	25	34
21.0	18	16	15	53.4	42	39	37	41	12	11	10	65.2	28	26	25	34
21.5	17	16	15	54.5	43	40	37	41	11	11	10	66.6	29	27	25	34
22.0	16	15	14	55.6	43	40	37	41	11	10	9	68.0	29	27	25	34
22.5	16	15	14	56.7	43	40	38	41	10	10	9	69.3	29	27	25	34
23.0	15	14	13	57.9	43	40	38	41	10	9	9	70.7	29	27	25	34
23.5	14	13	13	59.0	44	41	38	41	10	9	8	72.0	29	27	25	34
24.0	14	13	12	60.1	44	41	38	42	9	9	8	73.4	29	27	26	34
24.5	13	12	12	61.2	44	41	38	42	9	8	8	74.7	29	27	26	34
25.0	13	12	11	62.3	44	41	38	42	9	8	8	76.1	30	28	26	34
25.5	13	12	11	63.4	44	41	39	42	8	8	7	77.4	30	28	26	34
26.0	12	11	11	64.5	45	41	39	42	8	8	7	78.8	30	28	26	35
26.5	12	11	10	65.6	45	42	39	42	8	7	7	80.1	30	28	26	35
27.0	11	11	10	66.7	45	42	39	42	8	7	7	81.5	30	28	26	35
27.5	11	10	10	67.8	45	42	39	42	7	7	6	82.8	30	28	26	35
28.0	11	10	9	68.9	45	42	39	42	7	7	6	84.1	30	28	26	35
28.5	10	10	9	69.9	46	42	40	42	7	6	6	85.4	31	28	27	35
29.0	10	9	9	71.0	46	43	40	42	7	6	6	86.8	31	28	27	35
30.0	9	9	8	73.2	46	43	40	42	6	6	5	89.4	31	29	27	35

Column headings are:

- QMD Quadratic mean diameter (the diameter of the tree of average basal area).
- EA Even aged, showing the trees/acre, or basal area/acre, associated with an even-aged stand structure.
- IS Irregular structure; even-aged SDIs were reduced by 7% for an irregular stand structure (see figure 8).
- UA Uneven aged; even-aged SDIs were reduced by 13% for an uneven-aged stand structure (from Long 1995).
- ES Equilateral spacing, in feet, that the trees per acre associated with an even-aged stand structure (EA columns) would have when spaced equilaterally apart; also referred to as triangular spacing.
- CC Canopy cover; based on the “CP” equation from Dealy (1985) and the basal area per acre for an irregular structure (IS columns).

Table 119: Stocking levels for ponderosa pine in the PIPO/FEID plant association (full stocking = 194).

QMD	UPPER MANAGEMENT ZONE (SDI = 62)								LOWER MANAGEMENT ZONE (SDI = 42)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
1.0	3689	3431	3212	3.7	20	19	18	27	2472	2299	2152	4.5	13	13	12	20
1.2	2671	2484	2326	4.3	21	20	18	28	1790	1665	1558	5.3	14	13	12	21
1.4	2034	1891	1770	5.0	22	20	19	29	1362	1267	1186	6.1	15	14	13	22
1.6	1605	1493	1398	5.6	22	21	20	29	1076	1000	936	6.8	15	14	13	22
1.8	1303	1212	1135	6.2	23	21	20	30	873	812	760	7.6	15	14	13	23
2.0	1082	1006	942	6.8	24	22	21	30	725	674	631	8.3	16	15	14	23
2.2	914	850	795	7.4	24	22	21	31	612	569	533	9.1	16	15	14	24
2.4	783	728	682	8.0	25	23	21	31	525	488	457	9.8	16	15	14	24
2.6	680	632	592	8.6	25	23	22	31	455	424	397	10.5	17	16	15	24
2.8	596	555	519	9.2	25	24	22	32	399	372	348	11.2	17	16	15	25
3.0	528	491	459	9.8	26	24	23	32	354	329	308	11.9	17	16	15	25
3.2	471	438	410	10.3	26	24	23	32	315	293	275	12.6	18	16	15	25
3.4	423	393	368	10.9	27	25	23	32	283	263	247	13.3	18	17	16	25
3.6	382	355	333	11.5	27	25	24	33	256	238	223	14.0	18	17	16	26
3.8	347	323	302	12.0	27	25	24	33	233	216	203	14.7	18	17	16	26
4.0	317	295	276	12.6	28	26	24	33	212	198	185	15.4	19	17	16	26
4.2	291	271	253	13.1	28	26	24	33	195	181	170	16.1	19	17	16	26
4.4	268	249	233	13.7	28	26	25	34	180	167	156	16.7	19	18	17	26
4.6	248	230	216	14.3	29	27	25	34	166	154	144	17.4	19	18	17	27
4.8	230	214	200	14.8	29	27	25	34	154	143	134	18.1	19	18	17	27
5.0	214	199	186	15.3	29	27	25	34	143	133	125	18.7	20	18	17	27
5.2	199	185	174	15.9	29	27	26	34	134	124	116	19.4	20	18	17	27
5.4	186	173	162	16.4	30	28	26	34	125	116	109	20.1	20	18	17	27
5.6	175	163	152	17.0	30	28	26	35	117	109	102	20.7	20	19	17	27
5.8	164	153	143	17.5	30	28	26	35	110	102	96	21.4	20	19	18	28
6.0	155	144	135	18.0	30	28	26	35	104	96	90	22.0	20	19	18	28
6.2	146	136	127	18.6	31	28	27	35	98	91	85	22.7	21	19	18	28
6.4	138	128	120	19.1	31	29	27	35	92	86	81	23.3	21	19	18	28
6.6	131	122	114	19.6	31	29	27	35	88	81	76	24.0	21	19	18	28
6.8	124	115	108	20.1	31	29	27	35	83	77	72	24.6	21	19	18	28
7.0	118	110	103	20.7	31	29	27	35	79	73	69	25.2	21	20	18	28
7.2	112	104	98	21.2	32	29	28	36	75	70	65	25.9	21	20	18	28
7.4	107	99	93	21.7	32	30	28	36	72	67	62	26.5	21	20	19	28
7.6	102	95	89	22.2	32	30	28	36	68	63	59	27.2	21	20	19	29
7.8	97	90	85	22.7	32	30	28	36	65	61	57	27.8	22	20	19	29
8.0	93	86	81	23.3	32	30	28	36	62	58	54	28.4	22	20	19	29
8.2	89	83	77	23.8	33	30	28	36	60	55	52	29.0	22	20	19	29
8.4	85	79	74	24.3	33	31	29	36	57	53	50	29.7	22	20	19	29
8.6	82	76	71	24.8	33	31	29	36	55	51	48	30.3	22	21	19	29
8.8	79	73	68	25.3	33	31	29	36	53	49	46	30.9	22	21	19	29
9.0	75	70	66	25.8	33	31	29	37	51	47	44	31.5	22	21	19	29
9.2	73	68	63	26.3	34	31	29	37	49	45	42	32.2	22	21	20	29
9.4	70	65	61	26.8	34	31	29	37	47	44	41	32.8	23	21	20	29
9.6	67	63	59	27.3	34	31	29	37	45	42	39	33.4	23	21	20	30
9.8	65	60	57	27.8	34	32	30	37	44	40	38	34.0	23	21	20	30
10.0	63	58	55	28.3	34	32	30	37	42	39	37	34.6	23	21	20	30
10.5	57	53	50	29.6	35	32	30	37	39	36	34	36.1	23	22	20	30

Table 119: Stocking levels for ponderosa pine in the PIPO/FEID plant association (full stocking = 194).

QMD	UPPER MANAGEMENT ZONE (SDI = 62)								LOWER MANAGEMENT ZONE (SDI = 42)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
11.0	53	49	46	30.8	35	32	30	37	35	33	31	37.7	23	22	20	30
11.5	49	45	43	32.1	35	33	31	38	33	30	29	39.2	24	22	21	30
12.0	45	42	39	33.3	36	33	31	38	30	28	26	40.7	24	22	21	30
12.5	42	39	37	34.5	36	33	31	38	28	26	25	42.2	24	22	21	31
13.0	39	37	34	35.7	36	34	32	38	26	25	23	43.7	24	23	21	31
13.5	37	34	32	37.0	37	34	32	38	25	23	21	45.1	25	23	21	31
14.0	35	32	30	38.2	37	34	32	38	23	22	20	46.6	25	23	22	31
14.5	32	30	28	39.4	37	35	32	39	22	20	19	48.1	25	23	22	31
15.0	31	28	27	40.6	38	35	33	39	20	19	18	49.6	25	23	22	31
15.5	29	27	25	41.8	38	35	33	39	19	18	17	51.0	25	24	22	32
16.0	27	25	24	43.0	38	35	33	39	18	17	16	52.5	26	24	22	32
16.5	26	24	22	44.1	38	36	33	39	17	16	15	53.9	26	24	22	32
17.0	24	23	21	45.3	39	36	34	39	16	15	14	55.4	26	24	23	32
17.5	23	22	20	46.5	39	36	34	39	16	14	14	56.8	26	24	23	32
18.0	22	21	19	47.7	39	36	34	39	15	14	13	58.2	26	24	23	32
18.5	21	20	18	48.8	39	37	34	40	14	13	12	59.7	26	25	23	32
19.0	20	19	18	50.0	40	37	34	40	13	13	12	61.1	27	25	23	32
19.5	19	18	17	51.2	40	37	35	40	13	12	11	62.5	27	25	23	33
20.0	18	17	16	52.3	40	37	35	40	12	11	11	63.9	27	25	23	33
20.5	18	16	15	53.5	40	37	35	40	12	11	10	65.3	27	25	24	33
21.0	17	16	15	54.6	41	38	35	40	11	10	10	66.8	27	25	24	33
21.5	16	15	14	55.8	41	38	35	40	11	10	9	68.2	27	25	24	33
22.0	16	14	14	56.9	41	38	36	40	10	10	9	69.6	27	26	24	33
22.5	15	14	13	58.1	41	38	36	40	10	9	9	71.0	28	26	24	33
23.0	14	13	12	59.2	41	38	36	40	10	9	8	72.3	28	26	24	33
23.5	14	13	12	60.4	42	39	36	41	9	9	8	73.7	28	26	24	33
24.0	13	12	12	61.5	42	39	36	41	9	8	8	75.1	28	26	24	33
24.5	13	12	11	62.6	42	39	37	41	9	8	7	76.5	28	26	24	33
25.0	12	12	11	63.8	42	39	37	41	8	8	7	77.9	28	26	25	34
25.5	12	11	10	64.9	42	39	37	41	8	7	7	79.3	28	26	25	34
26.0	12	11	10	66.0	43	40	37	41	8	7	7	80.6	29	27	25	34
26.5	11	10	10	67.1	43	40	37	41	7	7	7	82.0	29	27	25	34
27.0	11	10	9	68.2	43	40	37	41	7	7	6	83.4	29	27	25	34
27.5	10	10	9	69.4	43	40	38	41	7	7	6	84.7	29	27	25	34
28.0	10	9	9	70.5	43	40	38	41	7	6	6	86.1	29	27	25	34
28.5	10	9	9	71.6	43	40	38	41	7	6	6	87.5	29	27	25	34
29.0	10	9	8	72.7	44	41	38	41	6	6	6	88.8	29	27	25	34
30.0	9	8	8	74.9	44	41	38	42	6	6	5	91.5	29	27	26	34

Column headings are:

- QMD Quadratic mean diameter (the diameter of the tree of average basal area).
- EA Even aged, showing the trees/acre, or basal area/acre, associated with an even-aged stand structure.
- IS Irregular structure; even-aged SDIs were reduced by 7% for an irregular stand structure (see figure 8).
- UA Uneven aged; even-aged SDIs were reduced by 13% for an uneven-aged stand structure (from Long 1995).
- ES Equilateral spacing, in feet, that the trees per acre associated with an even-aged stand structure (EA columns) would have when spaced equilaterally apart; also referred to as triangular spacing.
- CC Canopy cover; based on the “CP” equation from Dealy (1985) and the basal area per acre for an irregular structure (IS columns).

Table 120: Stocking levels for ponderosa pine in the PIPO/AGSP plant association
(full stocking = 133).

QMD	UPPER MANAGEMENT ZONE (SDI = 38)								LOWER MANAGEMENT ZONE (SDI = 26)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
1.0	2225	2070	1937	4.8	12	11	11	19	1491	1387	1298	5.8	8	8	7	12
1.2	1612	1499	1403	5.6	13	12	11	19	1080	1004	940	6.8	8	8	7	12
1.4	1227	1141	1068	6.4	13	12	11	20	822	764	716	7.8	9	8	8	13
1.6	969	901	843	7.2	14	13	12	20	649	603	565	8.8	9	8	8	14
1.8	786	731	685	8.0	14	13	12	21	527	490	459	9.8	9	9	8	14
2.0	653	607	568	8.8	14	13	12	21	437	407	381	10.7	10	9	8	14
2.2	551	513	480	9.6	15	14	13	22	369	343	322	11.7	10	9	8	15
2.4	473	439	411	10.3	15	14	13	22	317	294	276	12.6	10	9	9	15
2.6	410	381	357	11.1	15	14	13	22	275	256	239	13.5	10	9	9	15
2.8	360	335	313	11.8	15	14	13	23	241	224	210	14.4	10	10	9	16
3.0	318	296	277	12.6	16	15	14	23	213	198	186	15.4	10	10	9	16
3.2	284	264	247	13.3	16	15	14	23	190	177	166	16.3	11	10	9	16
3.4	255	237	222	14.0	16	15	14	23	171	159	149	17.2	11	10	9	17
3.6	231	214	201	14.8	16	15	14	24	154	144	134	18.0	11	10	10	17
3.8	210	195	182	15.5	16	15	14	24	140	131	122	18.9	11	10	10	17
4.0	191	178	167	16.2	17	16	15	24	128	119	112	19.8	11	10	10	17
4.2	175	163	153	16.9	17	16	15	24	118	109	102	20.7	11	11	10	17
4.4	162	150	141	17.6	17	16	15	25	108	101	94	21.6	11	11	10	18
4.6	149	139	130	18.3	17	16	15	25	100	93	87	22.4	12	11	10	18
4.8	139	129	121	19.1	17	16	15	25	93	86	81	23.3	12	11	10	18
5.0	129	120	112	19.8	18	16	15	25	86	80	75	24.1	12	11	10	18
5.2	120	112	105	20.5	18	16	15	25	81	75	70	25.0	12	11	10	18
5.4	112	105	98	21.1	18	17	16	25	75	70	66	25.8	12	11	10	18
5.6	105	98	92	21.8	18	17	16	25	71	66	62	26.7	12	11	11	18
5.8	99	92	86	22.5	18	17	16	26	66	62	58	27.5	12	11	11	19
6.0	93	87	81	23.2	18	17	16	26	63	58	54	28.4	12	11	11	19
6.2	88	82	77	23.9	18	17	16	26	59	55	51	29.2	12	12	11	19
6.4	83	77	72	24.6	19	17	16	26	56	52	49	30.0	12	12	11	19
6.6	79	73	69	25.3	19	17	16	26	53	49	46	30.9	13	12	11	19
6.8	75	70	65	25.9	19	18	16	26	50	47	44	31.7	13	12	11	19
7.0	71	66	62	26.6	19	18	17	26	48	44	41	32.5	13	12	11	19
7.2	68	63	59	27.3	19	18	17	27	45	42	39	33.3	13	12	11	19
7.4	64	60	56	27.9	19	18	17	27	43	40	38	34.1	13	12	11	20
7.6	61	57	53	28.6	19	18	17	27	41	38	36	35.0	13	12	11	20
7.8	59	55	51	29.3	19	18	17	27	39	37	34	35.8	13	12	11	20
8.0	56	52	49	29.9	20	18	17	27	38	35	33	36.6	13	12	11	20
8.2	54	50	47	30.6	20	18	17	27	36	33	31	37.4	13	12	11	20
8.4	51	48	45	31.3	20	18	17	27	34	32	30	38.2	13	12	12	20
8.6	49	46	43	31.9	20	19	17	27	33	31	29	39.0	13	12	12	20
8.8	47	44	41	32.6	20	19	17	27	32	30	28	39.8	13	12	12	20
9.0	46	42	40	33.2	20	19	18	27	31	28	27	40.6	13	13	12	20
9.2	44	41	38	33.9	20	19	18	28	29	27	26	41.4	14	13	12	20
9.4	42	39	37	34.5	20	19	18	28	28	26	25	42.2	14	13	12	21
9.6	41	38	35	35.2	20	19	18	28	27	25	24	43.0	14	13	12	21
9.8	39	36	34	35.8	21	19	18	28	26	24	23	43.8	14	13	12	21
10.0	38	35	33	36.5	21	19	18	28	25	24	22	44.6	14	13	12	21

10.5 | 35 | 32 | 30 | 38.1 | 21 | 19 | 18 | 28 | 23 | 22 | 20 | 46.5 | 14 | 13 | 12 | 21

Table 120: Stocking levels for ponderosa pine in the PIPO/AGSP plant association
(full stocking = 133).

QMD	UPPER MANAGEMENT ZONE (SDI = 38)								LOWER MANAGEMENT ZONE (SDI = 26)							
	TREES/ACRE				BASAL AREA/ACRE				TREES/ACRE				BASAL AREA/ACRE			
	EA	IS	UA	ES	EA	IS	UA	CC	EA	IS	UA	ES	EA	IS	UA	CC
11.0	32	30	28	39.7	21	20	18	28	21	20	19	48.5	14	13	12	21
11.5	30	27	26	41.3	21	20	19	28	20	18	17	50.4	14	13	12	21
12.0	27	25	24	42.9	21	20	19	29	18	17	16	52.4	14	13	13	22
12.5	25	24	22	44.4	22	20	19	29	17	16	15	54.3	15	14	13	22
13.0	24	22	21	46.0	22	20	19	29	16	15	14	56.2	15	14	13	22
13.5	22	21	19	47.6	22	21	19	29	15	14	13	58.1	15	14	13	22
14.0	21	19	18	49.1	22	21	19	29	14	13	12	60.0	15	14	13	22
14.5	20	18	17	50.7	22	21	20	29	13	12	11	61.9	15	14	13	22
15.0	18	17	16	52.2	23	21	20	30	12	11	11	63.8	15	14	13	22
15.5	17	16	15	53.8	23	21	20	30	12	11	10	65.7	15	14	13	23
16.0	16	15	14	55.3	23	21	20	30	11	10	10	67.6	15	14	13	23
16.5	16	14	14	56.8	23	22	20	30	10	10	9	69.4	15	14	13	23
17.0	15	14	13	58.3	23	22	20	30	10	9	9	71.3	16	15	14	23
17.5	14	13	12	59.9	23	22	20	30	9	9	8	73.1	16	15	14	23
18.0	13	12	12	61.4	24	22	21	30	9	8	8	75.0	16	15	14	23
18.5	13	12	11	62.9	24	22	21	30	9	8	7	76.8	16	15	14	23
19.0	12	11	11	64.4	24	22	21	31	8	8	7	78.7	16	15	14	23
19.5	12	11	10	65.9	24	22	21	31	8	7	7	80.5	16	15	14	23
20.0	11	10	10	67.4	24	22	21	31	7	7	6	82.3	16	15	14	24
20.5	11	10	9	68.9	24	23	21	31	7	7	6	84.1	16	15	14	24
21.0	10	9	9	70.3	24	23	21	31	7	6	6	85.9	16	15	14	24
21.5	10	9	8	71.8	25	23	21	31	7	6	6	87.8	16	15	14	24
22.0	9	9	8	73.3	25	23	22	31	6	6	5	89.6	17	15	14	24
22.5	9	8	8	74.8	25	23	22	31	6	6	5	91.4	17	15	14	24
23.0	9	8	8	76.2	25	23	22	31	6	5	5	93.1	17	16	15	24
23.5	8	8	7	77.7	25	23	22	31	6	5	5	94.9	17	16	15	24
24.0	8	7	7	79.2	25	23	22	31	5	5	5	96.7	17	16	15	24
24.5	8	7	7	80.6	25	24	22	32	5	5	5	98.5	17	16	15	24
25.0	7	7	6	82.1	25	24	22	32	5	5	4	100.3	17	16	15	24
25.5	7	7	6	83.5	26	24	22	32	5	4	4	102.1	17	16	15	25
26.0	7	6	6	85.0	26	24	22	32	5	4	4	103.8	17	16	15	25
26.5	7	6	6	86.4	26	24	22	32	5	4	4	105.6	17	16	15	25
27.0	7	6	6	87.9	26	24	23	32	4	4	4	107.4	17	16	15	25
27.5	6	6	5	89.3	26	24	23	32	4	4	4	109.1	17	16	15	25
28.0	6	6	5	90.7	26	24	23	32	4	4	4	110.9	18	16	15	25
28.5	6	6	5	92.2	26	24	23	32	4	4	3	112.6	18	16	15	25
29.0	6	5	5	93.6	26	24	23	32	4	4	3	114.4	18	16	15	25
30.0	5	5	5	96.5	27	25	23	32	4	3	3	117.8	18	17	15	25

Column headings are:

- QMD Quadratic mean diameter (the diameter of the tree of average basal area).
- EA Even aged, showing the trees/acre, or basal area/acre, associated with an even-aged stand structure.
- IS Irregular structure; even-aged SDIs were reduced by 7% for an irregular stand structure (see figure 8).
- UA Uneven aged; even-aged SDIs were reduced by 13% for an uneven-aged stand structure (from Long 1995).
- ES Equilateral spacing, in feet, that the trees per acre associated with an even-aged stand structure (EA columns) would have when spaced equilaterally apart; also referred to as triangular spacing.
- CC Canopy cover; based on the “CP” equation from Dealy (1985) and the basal area per acre for an irregular structure (IS columns).