CMAI FOR PONDEROSA PINE

100 YR. TABLE
(PIPO)
600-MEYER

SITE INDEX	CU.FT./ AC./YR.	CU.M./ HA./YR.	TOTAL AGE	SCRIBNER BD.FT./ AC./YR.	SCRIBNER TOTAL AGE	INTER.1/8" BD.FT./ AC./YR.	INTER.1/8" TOTAL AGE
70	55	3.8	50	172	160	232	130
71	56	3.9	50	177	160	240	130
72	58	4.1	50	182	160	247	130
73	59	4.1	50	188	160	255	130
74	60	4.2	50	193	160	263	130
75	62	4.3	50	198	160	270	130
76	63	4.4	50	203	160	278	130
77	64	4.5	50	209	160	285	130
78	65	4.5	50	214	160	293	130
79	67	4.7	50	219	160	300	130
80	69	4.8	40	225	150	313	110
81	70	4.9	40	232	150	321	110
82	72	5.0	40	238	150	330	110
83	74	5.2	40	245	150	339	110
84	75	5.2	40	252	150	347	110
85	77	5.4	40	258	150	356	110
86	78	5.5	40	265	150	365	110
87	80	5.6	40	271	150	373	110
88	82	5.7	40	278	150	382	110
89	83	5.8	40	284	150	391	110
90	85	5.9	40	292	130	403	100
91	87	6.1	40	300	130	413	100
92	88	6.2	40	308	130	423	100
93	90	6.3	40	316	130	433	100
94	92	6.4	40	324	130	443	100
95	94	6.6	40	332	130	453	100
96	96	6.7	40	340	130	463	100
97	97	6.8	40	348	130	473	100
98	99	6.9	40	356	130	483	100
99	101	7.1	40	364	130	493	100
100	102	7.1	40	372	120	507	90
101	104	7.3	40	381	120	519	90
102	106	7.4	40	390	120	530	90
103	108	7.6	40	399	120	542	90
104	110	7.7	40	408	120	554	90
105	112	7.8	40	417	120	566	90
106	114	8.0	40	426	120	578	90
107	116	8.1	40	435	120	590	90
108	118	8.3	40	444	120	602	90
109	120	8.4	40	453	120	614	90

CMAI FOR LODGEPOLE PINE

100 YR. TABLE
(PICO)
520-ALEXANDER

CU.FT./ AC./YR.	CU.M./ HA./YR.	TOTAL ABE
59	4.1	90
60	4.2	90
61	4.3	90
62	4.3	90
63	4.4	90
64	4.5	90
65	4.5	90
66	4.6	90
67	4.7	90
68	4.8	90
69	4.8	90
70	4.9	90
71	5.0	90
72	5.0	90
73	5.1	90
74	5.2	90
75	5.2	90
76	5.3	90
77	5.4	90
78	5.5	90
79	5.5	90
80	5.6	90
81	5.7	90
82	5.7	90
83	5.8	90
84	5.9	90
85	5.9	90
86	6.0	90
87	6.1	90
88	6.2	90
89	6.2	90
90	6.3	90
91	6.4	90
92	6.4	90
93	6.5	90
94	6.6	90
95	6.6	90
96	6.7	90
97	6.8	90
98	6.9	90

CMAI FOR WESTERN LARCH

50 YR. TABLE
(LAOC)
265-SCHMIDT

CU.FT./ AC./YR.	CU.M./ HA./YR.	TOTAL ABE
101	7.1	70
103	7.2	70
105	7.3	70
107	7.5	70
109	7.6	70
111	7.8	70
113	7.9	70
116	8.1	70
118	8.3	70
120	8.4	70
122	8.5	70

WITZEL

5-4

CMAI FOR PONDEROSA PINE

100 YR. TABLE
(PIPO)
600-MEYER

SITE INDEX	CU.FT./ AC./YR.	CU.M./ HA./YR.	TOTAL AGE	SCRIBNER BD.FT./ AC./YR.	SCRIBNER TOTAL AGE	INTER.1/8" BD.FT./ AC./YR.	INTER.1/8" TOTAL AGE
110	122	8.5	40	462	110	626	80
111	124	8.7	40	473	110	641	80
112	126	8.8	40	484	110	657	80
113	128	9.0	40	495	110	672	80
114	130	9.1	40	506	110	687	80
115	132	9.2	40	517	110	702	80
116	134	9.4	40	528	110	717	80
117	136	9.5	40	539	110	732	80
118	137	9.6	40	550	110	747	80
119	139	9.7	40	561	110	762	80
120	141	9.9	40	572	110	776	70
121	144	10.1	40	584	110	793	70
122	146	10.2	40	597	110	810	70
123	149	10.4	40	610	110	827	70
124	151	10.7	40	622	110	844	70
125	154	10.8	40	635	110	861	70
126	156	10.9	40	647	110	879	70
127	159	11.1	40	660	110	896	70
128	161	11.3	40	672	110	913	70
129	164	11.5	40	685	110	930	70
130	166	11.6	40	700	100	947	70
131	168	11.7	40	714	100	964	70
132	170	11.9	40	729	100	981	70
133	173	12.1	40	743	100	998	70
134	175	12.2	40	758	100	1015	70
135	177	12.4	40	772	100	1031	70
136	179	12.5	40	786	100	1048	70
137	181	12.7	40	801	100	1065	70
138	183	12.8	40	815	100	1082	70
139	185	12.9	40	830	100	1099	70
140	188	13.1	40	844	100	1116	70
141	190	13.3	40	859	100	1133	70
142	192	13.4	40	873	100	1150	70
143	194	13.6	40	888	100	1168	70
144	197	13.8	40	903	100	1185	70
145	199	13.9	40	918	100	1202	70
146	201	14.1	40	932	100	1219	70
147	203	14.2	40	947	100	1237	70
148	205	14.3	40	962	100	1254	70
149	208	14.5	40	976	100	1271	70

HAZELAIR

PHILOMATH

CMAI FOR LODGEPOLE PINE

100 YR. TABLE
(PICO)
520-ALEXANDER

CU.FT./ AC./YR.	CU.M./ HA./YR.	TOTAL AGE
99	6.9	90
100	7.0	90
101	7.1	90
102	7.1	90
103	7.2	90
104	7.3	90
105	7.3	90
106	7.4	90
107	7.5	90
108	7.6	90
109	7.6	90

S.5

Board feet/ac/yr & CF/AC/YR AT VARIOUS ROTATIONS

SITE INDEX 125

Ponderosa Pine

Site Index 125

Base 100

Site Index 125

Total Age	BH Age	Norm.	Site Height feet	Ave. DBH inches	Per Acre Data: Basal Area sq ft	Trees /Acre	Gross Cu.Ft.	Net 4" Cu.Ft.	Scrib 6" Bd Ft	cf/ac/yr
20	10	1.00	37	5.7	131	733	2370	1234		
25	15	1.00	47	6.9	165	636	3422	2267	1,602	
30	20	1.00	55	7.8	191	573	4396	3254	6,006	
35	25	1.00	62	8.6	212	521	5291	4179	10,538	151.2
40	30	1.00	69	9.4	228	474	6116	5041	15,085	152.9
45	35	1.00	75	10.1	241	431	6876	5841	19,589	
50	40	1.00	81	10.8	251	392	7580	6585	24,018	151.6
55	45	1.00	86	11.5	258	356	8232	7277	28,353	
60	50	1.00	91	12.2	264	323	8839	7921	32,586	147.3
65	55	1.00	96	12.9	268	294	9404	8521	36,711	bf/ac/yr
70	60	1.00	101	13.6	271	268	9932	9081	40,724	582
75	65	1.00	105	14.3	273	244	10426	9604	44,626	595
80	70	1.00	109	15.0	274	224	10889	10092	48,416	605
85	75	1.00	114	15.7	274	205	11322	10549	52,097	613
90	80	1.00	117	16.3	274	188	11730	10976	55,670	619
95	85	1.00	121	17.0	274	174	12113	11376	59,137	624
100	90	1.00	125	17.7	274	160	12474	11750	62,501	625
105	95	1.00	129	18.3	273	149	12813	12100	65,764	626
110	100	1.00	132	19.0	272	138	13134	12428	68,930	627
115	105	1.00	135	19.6	271	129	13436	12735	72,001	626
120	110	1.00	139	20.3	270	120	13721	13023	74,981	625
125	115	1.00	142	20.9	269	113	13991	13292	77,871	
130	120	1.00	145	21.5	268	106	14246	13545	80,677	
135	125	1.00	148	22.2	267	100	14487	13782	83,400	
140	130	1.00	151	22.8	266	94	14715	14004	86,044	
145	135	1.00	154	23.4	265	89	14932	14212	88,612	
150	140	1.00	156	24.0	264	84	15138	14408	91,107	
155	145	1.00	159	24.5	264	80	15333	14591	93,532	
160	150	1.00	161	25.1	263	76	15519	14764	95,891	

EXHIBIT # 6

BOARD FEET/ACRE/YEAR AT VARIOUS ROTATIONS
DOUGLAS FIR, SITE INDEX 150

Douglas Fir — Base 50

Site Index 150 — Reflects DNR Ownership — Site Index 150

Total Age	BH Age	PNB	Site Height feet	Ave. DBH inches	Per Acre Data: Basal Area sq ft	Trees /Acre 7"+	Gross Cu. Ft. 7"+	Net 4" Cu. Ft. 7"+	Scrib 6" Board Feet 16' log	Scrib 6" Board Feet 32' log	bf/ac/yr
30	24	1.00	86	12.2	160.3	199	4950	4351	18,003	13,509	450
32	26	1.00	92	12.6	170.8	198	5544	4950	21,334	16,318	510
34	28	1.00	98	13.0	180.5	195	6135	5544	24,783	19,267	567
36	30	1.00	104	13.4	189.5	192	6721	6135	28,330	22,335	620
38	32	1.00	109	13.9	198.0	189	7302	6721	31,957	25,503	671
40	34	1.00	114	14.3	205.9	185	7880	7302	35,650	28,755	719
42	36	1.00	119	14.7	213.4	181	8454	7880	39,394	32,076	764
44	38	1.00	124	15.1	220.5	177	9023	8454	43,178	35,454	806
46	40	1.00	129	15.5	227.2	172	9589	9023	46,991	38,876	845
48	42	1.00	133	16.0	233.6	168	10150	9589	50,823	42,333	882
50	44	1.00	138	16.4	239.7	164	10707	10150	54,667	45,814	916
52	46	1.00	142	16.8	245.5	160	11260	10707	58,514	49,312	948
54	48	1.00	146	17.2	251.0	156	11808	11260	62,358	52,819	978
56	50	1.00	150	17.6	256.4	152	12353	11808	66,193	56,329	1006
58	52	1.00	154	18.0	261.5	148	12893	12353	70,013	59,834	1032
60	54	1.00	157	18.4	266.5	144	13430	12893	73,813	63,331	1056
62	56	1.00	161	18.8	271.2	141	13962	13430	77,589	66,813	1078
64	58	1.00	165	19.2	275.8	137	14490	13962	81,338	70,276	1098
66	60	1.00	168	19.6	280.3	134	15013	14490	85,055	73,718	1117
68	62	1.00	171	20.0	284.5	131	15533	15013	88,739	77,134	1134
70	64	1.00	174	20.4	288.7	128	16049	15533	92,386	80,520	1150
72	66	1.00	177	20.7	292.7	125	16560	16049	95,995	83,876	1165
74	68	1.00	180	21.1	296.6	122	17067	16560	99,563	87,198	1178
76	70	1.00	183	21.5	300.4	119	17570	17067	103,090	90,484	1191
78	72	1.00	186	21.9	304.1	117	18069	17570	106,573	93,733	1202
80	74	1.00	189	22.2	307.7	114	18564	18069	110,013	96,943	1212
82	76	1.00	191	22.6	311.2	112	19054	18564	113,408	100,114	1220
84	78	1.00	194	23.0	314.6	109	19541	19054	116,758	103,244	1229
86	80	1.00	197	23.3	317.9	107	20023	19541	120,063	106,332	1236
88	82	1.00	199	23.7	321.1	105	20501	20023	123,323	109,379	1243
90	84	1.00	201	24.0	324.3	103	20975	20501	126,537	112,385	1249
92	86	1.00	204	24.4	327.4	101	21445	20975	129,708	115,348	1254
94	88	1.00	206	24.7	330.4	99	21911	21445	132,834	118,269	1258
96	90	1.00	208	25.0	333.3	98	22373	21911	135,917	121,148	1262
98	92	1.00	210	25.3	336.2	96	22830	22373	138,958	123,987	1265
100	94	1.00	212	25.7	339.0	94	23283	22830	141,957	126,784	1268

Douglas fir — Site Index 150 — Douglas fir
DNR #41 Base 50 — Base 50

6.2

EXHIBIT 7: YIELD TABLES

Douglas Fir — Base 50

Site Index 60 — Reflects DNR Ownership — Site Index 60

Total Age	BH Age	PNB	Site Height feet	Ave. DBH inches	Per Acre Data: Basal Area sq ft	Trees /Acre 7"+	Gross Cu. Ft. 7"+	Net 4" Cu. Ft. 7"+	Scrib 6" Board Feet 16' log	Scrib 6" Board Feet 32' log
30	20	1.00	30	8.2	18.3	50				
32	22	1.00	33	8.4	30.8	81				
34	24	1.00	35	8.5	42.2	108	588	353	1,092	739
36	26	1.00	38	8.6	52.7	130	819	588	1,583	1,076
38	28	1.00	40	8.7	62.4	150	1046	819	2,102	1,438
40	30	1.00	42	8.8	71.4	167	1268	1046	2,649	1,824
42	32	1.00	45	9.0	79.8	182	1487	1268	3,221	2,233
44	34	1.00	47	9.1	87.8	195	1701	1487	3,817	2,665
46	36	1.00	49	9.2	95.3	206	1911	1701	4,434	3,116
48	38	1.00	50	9.3	102.3	216	2117	1911	5,069	3,586
50	40	1.00	52	9.4	109.0	225	2319	2117	5,719	4,073
52	42	1.00	54	9.5	115.4	233	2517	2319	6,382	4,573
54	44	1.00	55	9.6	121.5	240	2710	2517	7,055	5,086
56	46	1.00	57	9.7	127.3	246	2900	2710	7,735	5,607
58	48	1.00	59	9.9	132.9	251	3085	2900	8,421	6,137
60	50	1.00	60	10.0	138.2	256	3266	3085	9,109	6,671
62	52	1.00	61	10.0	143.4	260	3443	3266	9,797	7,208
64	54	1.00	63	10.1	148.3	264	3616	3443	10,484	7,747
66	56	1.00	64	10.2	153.1	268	3784	3616	11,167	8,285
68	58	1.00	65	10.3	157.7	271	3949	3784	11,844	8,819
70	60	1.00	66	10.4	162.1	274	4109	3949	12,514	9,350
72	62	1.00	68	10.5	166.4	277	4265	4109	13,174	9,874
74	64	1.00	69	10.6	170.6	280	4417	4265	13,824	10,390
76	66	1.00	70	10.6	174.6	282	4565	4417	14,460	10,896
78	68	1.00	71	10.7	178.5	285	4709	4565	15,083	11,391
80	70	1.00	72	10.8	182.3	287	4848	4709	15,690	11,874
82	72	1.00	73	10.9	186.0	290	4984	4848	16,280	12,342
84	74	1.00	74	10.9	189.6	292	5115	4984	16,852	12,796
86	76	1.00	74	11.0	193.1	294	5242	5115	17,404	13,232
88	78	1.00	75	11.0	196.5	296	5365	5242	17,935	13,651
90	80	1.00	76	11.1	199.8	299	5484	5365	18,445	14,051
92	82	1.00	77	11.1	203.0	301	5599	5484	18,930	14,430
94	84	1.00	78	11.2	206.2	304	5709	5599	19,392	14,788
96	86	1.00	79	11.2	209.2	306	5816	5709	19,828	15,123
98	88	1.00	79	11.2	212.2	309	5918	5816	20,238	15,435
100	90	1.00	80	11.2	215.2	312	6016	5918	20,620	15,722

Douglas fir — Site Index 60 — Douglas fir

DNR #41 Base 50 — Base 50

7-1

EXHIBIT 7: BOARD FOOT YIELD TABLES

102 Panther
106A Peregrine
Base 50

Douglas Fir

Site Index 65 — Reflects DNR Ownership — Site Index 65

Total Age	BH Age	PNB	Site Height feet	Ave. DBH inches	Per Acre Data: Basal Area sq ft	Trees /Acre 7"+	Gross Cu. Ft. 7"+	Net 4" Cu. Ft. 7"+	Scrib 6" Board Feet 16' log	Scrib 6" Board Feet 32' log
30	20	1.00	33	8.4	28.6	74	316	52	559	373
32	22	1.00	36	8.5	41.1	103	575	316	1,066	715
34	24	1.00	38	8.7	52.5	128	831	575	1,614	1,089
36	26	1.00	41	8.8	63.0	148	1082	831	2,201	1,497
38	28	1.00	43	9.0	72.7	166	1329	1082	2,826	1,938
40	30	1.00	46	9.1	81.7	181	1571	1329	3,486	2,412
42	32	1.00	48	9.2	90.2	194	1810	1571	4,180	2,917
44	34	1.00	50	9.4	98.1	205	2044	1810	4,903	3,450
46	36	1.00	52	9.5	105.6	214	2275	2044	5,652	4,010
48	38	1.00	55	9.6	112.6	222	2501	2275	6,424	4,593
50	40	1.00	56	9.8	119.4	229	2723	2501	7,215	5,197
52	42	1.00	58	9.9	125.7	236	2941	2723	8,022	5,819
54	44	1.00	60	10.0	131.8	241	3154	2941	8,842	6,456
56	46	1.00	62	10.1	137.7	245	3364	3154	9,671	7,105
58	48	1.00	63	10.3	143.2	249	3569	3364	10,508	7,764
60	50	1.00	65	10.4	148.6	253	3771	3569	11,350	8,431
62	52	1.00	67	10.5	153.7	256	3968	3771	12,193	9,103
64	54	1.00	68	10.6	158.6	259	4161	3968	13,035	9,777
66	56	1.00	69	10.7	163.4	261	4350	4161	13,875	10,452
68	58	1.00	71	10.8	168.0	263	4534	4350	14,710	11,125
70	60	1.00	72	10.9	172.4	265	4715	4534	15,538	11,794
72	62	1.00	73	11.0	176.7	267	4891	4715	16,357	12,458
74	64	1.00	74	11.1	180.9	268	5063	4891	17,166	13,114
76	66	1.00	76	11.2	184.9	270	5232	5063	17,962	13,761
78	68	1.00	77	11.3	188.8	271	5395	5232	18,745	14,397
80	70	1.00	78	11.4	192.6	273	5555	5395	19,512	15,020
82	72	1.00	79	11.5	196.3	274	5711	5555	20,261	15,629
84	74	1.00	80	11.5	199.9	275	5862	5711	20,993	16,222
86	76	1.00	81	11.6	203.4	276	6010	5862	21,704	16,798
88	78	1.00	82	11.7	206.8	278	6153	6010	22,395	17,356
90	80	1.00	83	11.8	210.1	279	6292	6153	23,063	17,895
92	82	1.00	84	11.8	213.3	280	6427	6292	23,708	18,412
94	84	1.00	84	11.9	216.5	282	6557	6427	24,327	18,907
96	86	1.00	85	11.9	219.6	283	6684	6557	24,921	19,378
98	88	1.00	86	12.0	222.6	285	6806	6684	25,488	19,825
100	90	1.00	87	12.0	225.5	286	6925	6806	26,026	20,246

Douglas fir
DNR #41 Base 50

Site Index 65

Douglas fir
Base 50

Douglas Fir — Base 50

Site Index 80 — Reflects DNR Ownership — Site Index 80

Total Age	BH Age	PNB	Site Height feet	Ave. DBH inches	Per Acre Data: Basal Area sq ft	Trees /Acre 7"+	Gross Cu. Ft. 7"+	Net 4" Cu. Ft. 7"+	Scrib 6" Board Feet 16' log	Scrib 6" Board Feet 32' log
30	21	1.00	41	9.0	61.8	140	1082	760	2,195	1,458
32	23	1.00	45	9.2	73.7	160	1400	1082	3,030	2,044
34	25	1.00	48	9.4	84.6	176	1714	1400	3,940	2,696
36	27	1.00	52	9.6	94.7	189	2023	1714	4,917	3,412
38	29	1.00	55	9.8	104.0	200	2329	2023	5,956	4,188
40	31	1.00	58	10.0	112.8	208	2630	2329	7,049	5,018
42	33	1.00	60	10.1	121.0	215	2927	2630	8,190	5,898
44	35	1.00	63	10.3	128.7	221	3220	2927	9,373	6,823
46	37	1.00	66	10.5	135.9	225	3509	3220	10,592	7,787
48	39	1.00	68	10.7	142.8	229	3794	3509	11,842	8,787
50	41	1.00	70	10.9	149.4	232	4074	3794	13,119	9,816
52	43	1.00	73	11.1	155.6	234	4351	4074	14,418	10,872
54	45	1.00	75	11.2	161.5	235	4623	4351	15,734	11,950
56	47	1.00	77	11.4	167.2	236	4891	4623	17,063	13,046
58	49	1.00	79	11.6	172.7	237	5155	4891	18,403	14,156
60	51	1.00	81	11.7	177.9	237	5415	5155	19,749	15,278
62	53	1.00	83	11.9	183.0	237	5670	5415	21,100	16,407
64	55	1.00	85	12.1	187.8	237	5922	5670	22,451	17,542
66	57	1.00	86	12.2	192.5	236	6169	5922	23,800	18,678
68	59	1.00	88	12.4	197.0	236	6412	6169	25,145	19,815
70	61	1.00	90	12.5	201.4	235	6651	6412	26,484	20,948
72	63	1.00	91	12.7	205.6	235	6886	6651	27,814	22,076
74	65	1.00	93	12.8	209.7	234	7117	6886	29,133	23,197
76	67	1.00	94	13.0	213.6	233	7343	7117	30,440	24,308
78	69	1.00	96	13.1	217.5	232	7566	7343	31,732	25,407
80	71	1.00	97	13.2	221.2	232	7784	7566	33,008	26,494
82	73	1.00	98	13.4	224.9	231	7998	7784	34,267	27,565
84	75	1.00	99	13.5	228.4	230	8208	7998	35,506	28,619
86	77	1.00	101	13.6	231.9	229	8414	8208	36,725	29,655
88	79	1.00	102	13.7	235.2	229	8616	8414	37,922	30,671
90	81	1.00	103	13.8	238.5	228	8813	8616	39,095	31,666
92	83	1.00	104	14.0	241.7	227	9007	8813	40,244	32,638
94	85	1.00	105	14.1	244.8	227	9196	9007	41,368	33,586
96	87	1.00	106	14.2	247.8	226	9381	9196	42,464	34,508
98	89	1.00	107	14.3	250.8	226	9562	9381	43,532	35,404
100	91	1.00	108	14.4	253.7	226	9739	9562	44,571	36,271

Douglas fir — Site Index 80 — Douglas fir

DNR #41 Base 50 — Base 50

7-3

Witzel

Douglas Fir — Base 50

Site Index 90 — Reflects DNR Ownership — Site Index 90

Total Age	BH Age	PNB	Site Height feet	Ave. DBH inches	Per Acre Data: Basal Area sq ft	Trees /Acre 7"+	Gross Cu. Ft. 7"+	Net 4" Cu. Ft. 7"+	Scrib 6" Board Feet 16' log	Scrib 6" Board Feet 32' log
30	21	1.00	46	9.4	77.0	161	1506	1144	3,308	2,210
32	23	1.00	50	9.6	88.9	177	1865	1506	4,400	2,996
34	25	1.00	54	9.8	99.8	190	2219	1865	5,586	3,872
36	27	1.00	58	10.0	109.9	200	2569	2219	6,855	4,831
38	29	1.00	61	10.3	119.2	207	2914	2569	8,199	5,865
40	31	1.00	65	10.5	128.0	213	3256	2914	9,608	6,967
42	33	1.00	68	10.7	136.1	218	3594	3256	11,074	8,130
44	35	1.00	71	10.9	143.8	221	3927	3594	12,588	9,347
46	37	1.00	74	11.1	151.1	223	4256	3927	14,146	10,613
48	39	1.00	76	11.4	158.0	224	4581	4256	15,739	11,920
50	41	1.00	79	11.6	164.6	225	4902	4581	17,362	13,263
52	43	1.00	82	11.8	170.8	225	5219	4902	19,011	14,637
54	45	1.00	84	12.0	176.7	225	5532	5219	20,679	16,037
56	47	1.00	87	12.2	182.4	225	5840	5532	22,364	17,459
58	49	1.00	89	12.4	187.9	224	6144	5840	24,060	18,897
60	51	1.00	91	12.6	193.1	223	6444	6144	25,764	20,349
62	53	1.00	93	12.8	198.2	222	6740	6444	27,473	21,811
64	55	1.00	95	13.0	203.0	220	7032	6740	29,184	23,279
66	57	1.00	97	13.2	207.7	219	7320	7032	30,893	24,751
68	59	1.00	99	13.4	212.2	217	7604	7320	32,598	26,222
70	61	1.00	101	13.6	216.6	216	7883	7604	34,297	27,691
72	63	1.00	103	13.7	220.8	214	8158	7883	35,987	29,155
74	65	1.00	104	13.9	224.9	213	8429	8158	37,666	30,612
76	67	1.00	106	14.1	228.8	211	8696	8429	39,332	32,059
78	69	1.00	108	14.3	232.7	209	8959	8696	40,984	33,495
80	71	1.00	109	14.4	236.4	208	9218	8959	42,619	34,917
82	73	1.00	111	14.6	240.1	206	9472	9218	44,236	36,323
84	75	1.00	112	14.8	243.6	205	9723	9472	45,834	37,712
86	77	1.00	114	14.9	247.0	203	9969	9723	47,411	39,082
88	79	1.00	115	15.1	250.4	202	10211	9969	48,965	40,432
90	81	1.00	116	15.2	253.7	201	10449	10211	50,496	41,760
92	83	1.00	118	15.4	256.9	199	10683	10449	52,002	43,065
94	85	1.00	119	15.5	260.0	198	10912	10683	53,483	44,345
96	87	1.00	120	15.6	263.0	197	11138	10912	54,936	45,599
98	89	1.00	121	15.8	266.0	196	11359	11138	56,361	46,826
100	91	1.00	122	15.9	268.9	195	11576	11359	57,757	48,024

Douglas fir — Site Index 90 — Douglas fir

DNR #41 Base 50 — Base 50

7.4

113 RITNER - 107

Douglas Fir — Base 50

Site Index 105 — Reflects DNR Ownership — Site Index 105

Total Age	BH Age	PNB	Site Height feet	Ave. DBH inches	Per Acre Data: Basal Area sq ft	Trees /Acre 7"+	Gross Cu. Ft. 7"+	Net 4" Cu. Ft. 7"+	Scrib 6" Board Feet 16' log	Scrib 6" Board Feet 32' log
30	22	1.00	56	10.0	102.9	187	2352	1931	6,035	4,148
32	24	1.00	61	10.3	114.3	197	2769	2352	7,631	5,360
34	26	1.00	65	10.6	124.8	204	3182	2769	9,337	6,686
36	28	1.00	69	10.9	134.5	209	3590	3182	11,139	8,113
38	30	1.00	73	11.1	143.5	212	3994	3590	13,023	9,631
40	32	1.00	77	11.4	152.0	214	4395	3994	14,979	11,228
42	34	1.00	80	11.7	159.9	215	4791	4395	16,996	12,896
44	36	1.00	84	12.0	167.4	215	5183	4791	19,066	14,624
46	38	1.00	87	12.2	174.5	214	5570	5183	21,180	16,406
48	40	1.00	91	12.5	181.2	213	5954	5570	23,331	18,233
50	42	1.00	94	12.7	187.6	212	6333	5954	25,513	20,099
52	44	1.00	97	13.0	193.7	210	6708	6333	27,719	21,997
54	46	1.00	100	13.3	199.5	208	7080	6708	29,945	23,922
56	48	1.00	102	13.5	205.1	206	7447	7080	32,185	25,869
58	50	1.00	105	13.8	210.4	203	7809	7447	34,435	27,832
60	52	1.00	108	14.0	215.5	201	8168	7809	36,691	29,808
62	54	1.00	110	14.3	220.5	198	8523	8168	38,949	31,792
64	56	1.00	112	14.5	225.2	196	8873	8523	41,207	33,781
66	58	1.00	115	14.8	229.8	193	9219	8873	43,460	35,771
68	60	1.00	117	15.0	234.3	191	9561	9219	45,706	37,759
70	62	1.00	119	15.2	238.6	188	9899	9561	47,943	39,742
72	64	1.00	121	15.5	242.7	186	10233	9899	50,168	41,717
74	66	1.00	123	15.7	246.7	184	10563	10233	52,379	43,683
76	68	1.00	125	15.9	250.6	181	10888	10563	54,574	45,636
78	70	1.00	127	16.1	254.4	179	11209	10888	56,752	47,574
80	72	1.00	129	16.4	258.1	177	11526	11209	58,910	49,497
82	74	1.00	131	16.6	261.7	175	11840	11526	61,047	51,401
84	76	1.00	132	16.8	265.2	173	12148	11840	63,163	53,286
86	78	1.00	134	17.0	268.6	171	12453	12148	65,255	55,149
88	80	1.00	136	17.2	271.9	169	12754	12453	67,322	56,989
90	82	1.00	137	17.4	275.2	167	13050	12754	69,364	58,805
92	84	1.00	139	17.6	278.3	165	13342	13050	71,379	60,596
94	86	1.00	140	17.8	281.4	163	13631	13342	73,367	62,361
96	88	1.00	142	18.0	284.4	162	13914	13631	75,327	64,097
98	90	1.00	143	18.1	287.3	160	14194	13914	77,257	65,805
100	92	1.00	144	18.3	290.2	159	14470	14194	79,158	67,484

Douglas fir — Site Index 105 — Douglas fir
DNR #41 Base 50 — Base 50

EXHIBIT 7

41 Dixonville - 109

Douglas Fir — Base 50

Site Index 110 — Reflects DNR Ownership — Site Index 110

Total Age	BH Age	PNB	Site Height feet	Ave. DBH inches	Per Acre Data: Basal Area sq ft	Trees /Acre 7"+	Gross Cu. Ft. 7"+	Net 4" Cu. Ft. 7"+	Scrib 6" Board Feet 16' log	Scrib 6" Board Feet 32' log
30	22	1.00	59	10.2	108.9	191	2574	2133	6,854	4,745
32	24	1.00	63	10.5	120.3	199	3011	2574	8,613	6,097
34	26	1.00	68	10.8	130.8	205	3444	3011	10,488	7,572
36	28	1.00	72	11.1	140.5	209	3873	3444	12,463	9,154
38	30	1.00	76	11.4	149.5	211	4297	3873	14,525	10,832
40	32	1.00	80	11.7	158.0	212	4718	4297	16,660	12,593
42	34	1.00	84	12.0	165.9	212	5134	4718	18,859	14,428
44	36	1.00	88	12.3	173.4	211	5546	5134	21,112	16,326
46	38	1.00	91	12.5	180.5	210	5954	5546	23,410	18,280
48	40	1.00	95	12.8	187.2	209	6358	5954	25,746	20,280
50	42	1.00	98	13.1	193.6	207	6757	6358	28,113	22,321
52	44	1.00	101	13.4	199.7	204	7153	6757	30,504	24,394
54	46	1.00	104	13.7	205.5	202	7544	7153	32,914	26,495
56	48	1.00	107	13.9	211.1	199	7931	7544	35,339	28,617
58	50	1.00	110	14.2	216.4	197	8314	7931	37,772	30,756
60	52	1.00	113	14.5	221.5	194	8693	8314	40,211	32,907
62	54	1.00	115	14.7	226.5	191	9068	8693	42,652	35,066
64	56	1.00	118	15.0	231.2	189	9438	9068	45,090	37,228
66	58	1.00	120	15.3	235.8	186	9805	9438	47,523	39,392
68	60	1.00	123	15.5	240.3	183	10167	9805	49,948	41,552
70	62	1.00	125	15.8	244.6	180	10525	10167	52,363	43,706
72	64	1.00	127	16.0	248.7	178	10879	10525	54,764	45,852
74	66	1.00	129	16.3	252.7	175	11229	10879	57,150	47,987
76	68	1.00	131	16.5	256.6	173	11575	11229	59,519	50,109
78	70	1.00	133	16.7	260.4	170	11916	11575	61,869	52,215
80	72	1.00	135	17.0	264.1	168	12253	11916	64,199	54,304
82	74	1.00	137	17.2	267.7	166	12587	12253	66,507	56,373
84	76	1.00	139	17.4	271.2	164	12916	12587	68,791	58,422
86	78	1.00	141	17.7	274.6	162	13241	12916	71,051	60,448
88	80	1.00	142	17.9	277.9	160	13561	13241	73,286	62,451
90	82	1.00	144	18.1	281.1	158	13878	13561	75,494	64,429
92	84	1.00	146	18.3	284.3	156	14190	13878	77,674	66,381
94	86	1.00	147	18.5	287.4	154	14499	14190	79,827	68,305
96	88	1.00	149	18.7	290.4	152	14803	14499	81,950	70,202
98	90	1.00	150	18.9	293.3	151	15103	14803	84,045	72,069
100	92	1.00	152	19.1	296.2	149	15399	15103	86,109	73,906

Douglas fir — Site Index 110 — Douglas fir

DNR #41 Base 50 — Base 50

109

BF 32'

21,787

32,287

72,622

7-6

Site Index 115 — Douglas Fir — Reflects DNR Ownership — Base 50 — Site Index 115

Total Age	BH Age	PNB	Site Height feet	Ave. DBH inches	Per Acre Data: Basal Area sq ft	Trees /Acre 7"+	Gross Cu. Ft. 7"+	Net 4" Cu. Ft. 7"+	Scrib 6" Board Feet 16' log	Scrib 6" Board Feet 32' log
30	23	1.00	64	10.6	120.5	198	3026	2566	8,662	6,113
32	25	1.00	69	10.9	131.4	203	3481	3026	10,652	7,678
34	27	1.00	73	11.2	141.5	207	3932	3481	12,755	9,365
36	29	1.00	78	11.5	150.8	209	4378	3932	14,953	11,159
38	31	1.00	82	11.8	159.6	210	4821	4378	17,234	13,046
40	33	1.00	86	12.1	167.7	210	5260	4821	19,585	15,014
42	35	1.00	90	12.4	175.4	209	5694	5260	21,997	17,054
44	37	1.00	94	12.7	182.7	207	6124	5694	24,458	19,155
46	39	1.00	97	13.0	189.6	205	6550	6124	26,961	21,308
48	41	1.00	101	13.3	196.2	203	6972	6550	29,499	23,505
50	43	1.00	104	13.6	202.4	200	7390	6972	32,064	25,739
52	45	1.00	107	13.9	208.3	198	7803	7390	34,651	28,003
54	47	1.00	111	14.2	214.0	195	8213	7803	37,253	30,292
56	49	1.00	114	14.5	219.5	192	8618	8213	39,866	32,599
58	51	1.00	116	14.8	224.7	189	9019	8618	42,485	34,920
60	53	1.00	119	15.1	229.8	186	9416	9019	45,107	37,250
62	55	1.00	122	15.3	234.6	183	9809	9416	47,727	39,585
64	57	1.00	125	15.6	239.3	180	10198	9809	50,341	41,921
66	59	1.00	127	15.9	243.8	177	10582	10198	52,948	44,255
68	61	1.00	129	16.2	248.2	174	10962	10582	55,543	46,583
70	63	1.00	132	16.4	252.4	172	11339	10962	58,126	48,903
72	65	1.00	134	16.7	256.5	169	11711	11339	60,692	51,212
74	67	1.00	136	16.9	260.4	166	12079	11711	63,241	53,507
76	69	1.00	138	17.2	264.3	164	12443	12079	65,770	55,786
78	71	1.00	141	17.5	268.0	161	12802	12443	68,278	58,048
80	73	1.00	143	17.7	271.7	159	13158	12802	70,763	60,290
82	75	1.00	144	18.0	275.2	157	13509	13158	73,224	62,511
84	77	1.00	146	18.2	278.6	154	13856	13509	75,660	64,709
86	79	1.00	148	18.4	282.0	152	14199	13856	78,069	66,882
88	81	1.00	150	18.7	285.3	150	14538	14199	80,451	69,031
90	83	1.00	152	18.9	288.5	148	14873	14538	82,806	71,153
92	85	1.00	153	19.1	291.6	146	15203	14873	85,131	73,247
94	87	1.00	155	19.3	294.6	144	15530	15203	87,427	75,312
96	89	1.00	157	19.6	297.6	143	15852	15530	89,693	77,348
98	91	1.00	158	19.8	300.5	141	16170	15852	91,929	79,354
100	93	1.00	160	20.0	303.4	139	16484	16170	94,133	81,329

Douglas fir DNR #41 Base 50 — Site Index 115 — Douglas fir Base 50

7-7

Site Index 120 — Douglas Fir — Reflects DNR Ownership — Base 50 — Site Index 120

Total Age	BH Age	PNB	Site Height feet	Ave. DBH inches	Per Acre Data: Basal Area sq ft	Trees /Acre 7"+	Gross Cu. Ft. 7"+	Net 4" Cu. Ft. 7"+	Scrib 6" Board Feet 16' log	Scrib 6" Board Feet 32' log
30	23	1.00	67	10.8	126.0	199	3258	2778	9,650	6,862
32	25	1.00	72	11.1	136.9	204	3733	3258	11,814	8,582
34	27	1.00	76	11.4	147.0	207	4204	3733	14,095	10,430
36	29	1.00	81	11.7	156.3	208	4671	4204	16,474	12,390
38	31	1.00	85	12.1	165.0	208	5134	4671	18,939	14,447
40	33	1.00	90	12.4	173.2	207	5593	5134	21,475	16,588
42	35	1.00	94	12.7	180.9	205	6047	5593	24,072	18,802
44	37	1.00	98	13.0	188.2	203	6498	6047	26,719	21,078
46	39	1.00	101	13.3	195.1	201	6944	6498	29,409	23,408
48	41	1.00	105	13.7	201.6	198	7386	6944	32,133	25,782
50	43	1.00	109	14.0	207.9	195	7824	7386	34,883	28,194
52	45	1.00	112	14.3	213.8	192	8258	7824	37,654	30,635
54	47	1.00	115	14.6	219.5	189	8687	8258	40,440	33,100
56	49	1.00	118	14.9	225.0	186	9113	8687	43,236	35,583
58	51	1.00	121	15.2	230.2	183	9534	9113	46,036	38,079
60	53	1.00	124	15.5	235.2	179	9951	9534	48,837	40,583
62	55	1.00	127	15.8	240.1	176	10364	9951	51,634	43,091
64	57	1.00	130	16.1	244.8	173	10773	10364	54,425	45,599
66	59	1.00	133	16.4	249.3	170	11178	10773	57,206	48,102
68	61	1.00	135	16.7	253.6	167	11578	11178	59,974	50,599
70	63	1.00	138	17.0	257.9	164	11975	11578	62,726	53,086
72	65	1.00	140	17.2	262.0	162	12367	11975	65,461	55,559
74	67	1.00	142	17.5	265.9	159	12755	12367	68,176	58,018
76	69	1.00	145	17.8	269.8	156	13139	12755	70,870	60,459
78	71	1.00	147	18.1	273.5	154	13519	13139	73,541	62,881
80	73	1.00	149	18.3	277.2	151	13895	13519	76,187	65,282
82	75	1.00	151	18.6	280.7	149	14266	13895	78,807	67,660
84	77	1.00	153	18.9	284.1	147	14634	14266	81,400	70,013
86	79	1.00	155	19.1	287.5	144	14997	14634	83,965	72,341
88	81	1.00	157	19.4	290.8	142	15356	14997	86,502	74,642
90	83	1.00	159	19.6	294.0	140	15711	15356	89,009	76,916
92	85	1.00	160	19.8	297.1	138	16062	15711	91,486	79,160
94	87	1.00	162	20.1	300.1	136	16408	16062	93,933	81,375
96	89	1.00	164	20.3	303.1	135	16751	16408	96,348	83,560
98	91	1.00	165	20.5	306.0	133	17089	16751	98,732	85,713
100	93	1.00	167	20.8	308.8	131	17423	17089	101,085	87,835

Douglas fir *DNR #41 Base 50* Site Index 120 Douglas fir *Base 50*

7.8

Douglas Fir — Base 50

Site Index 130 — Reflects DNR Ownership — Site Index 130

Total Age	BH Age	PNB	Site Height feet	Ave. DBH inches	Per Acre Data: Basal Area sq ft	Trees /Acre 7"+	Gross Cu. Ft. 7"+	Net 4" Cu. Ft. 7"+	Scrib 6" Board Feet 16' log	Scrib 6" Board Feet 32' log
30	23	1.00	72	11.2	136.3	201	3722	3203	11,748	8,479
32	25	1.00	77	11.5	147.2	203	4238	3722	14,270	10,524
34	27	1.00	83	11.9	157.3	204	4750	4238	16,915	12,705
36	29	1.00	88	12.2	166.6	204	5257	4750	19,663	15,006
38	31	1.00	92	12.6	175.4	203	5760	5257	22,499	17,410
40	33	1.00	97	13.0	183.5	201	6259	5760	25,408	19,903
42	35	1.00	101	13.3	191.3	198	6754	6259	28,379	22,471
44	37	1.00	106	13.7	198.5	195	7245	6754	31,401	25,104
46	39	1.00	110	14.0	205.4	192	7731	7245	34,463	27,790
48	41	1.00	114	14.4	212.0	188	8214	7731	37,558	30,521
50	43	1.00	118	14.7	218.2	185	8692	8214	40,678	33,288
52	45	1.00	121	15.1	224.1	181	9166	8692	43,815	36,084
54	47	1.00	125	15.4	229.8	178	9636	9166	46,964	38,901
56	49	1.00	128	15.7	235.3	174	10102	9636	50,119	41,734
58	51	1.00	132	16.1	240.5	171	10564	10102	53,275	44,576
60	53	1.00	135	16.4	245.6	167	11021	10564	56,427	47,423
62	55	1.00	138	16.7	250.4	164	11475	11021	59,571	50,271
64	57	1.00	141	17.1	255.1	161	11924	11475	62,703	53,114
66	59	1.00	144	17.4	259.6	157	12369	11924	65,821	55,950
68	61	1.00	147	17.7	264.0	154	12810	12369	68,921	58,774
70	63	1.00	149	18.0	268.2	151	13247	12810	72,001	61,584
72	65	1.00	152	18.3	272.3	148	13680	13247	75,059	64,378
74	67	1.00	154	18.7	276.2	146	14108	13680	78,091	67,151
76	69	1.00	157	19.0	280.1	143	14533	14108	81,098	69,903
78	71	1.00	159	19.3	283.8	140	14953	14533	84,076	72,632
80	73	1.00	162	19.6	287.5	138	15369	14953	87,025	75,335
82	75	1.00	164	19.9	291.0	135	15781	15369	89,943	78,011
84	77	1.00	166	20.2	294.5	133	16188	15781	92,830	80,659
86	79	1.00	168	20.4	297.8	131	16592	16188	95,685	83,278
88	81	1.00	170	20.7	301.1	128	16992	16592	98,508	85,866
90	83	1.00	172	21.0	304.3	126	17387	16992	101,297	88,423
92	85	1.00	174	21.3	307.4	124	17778	17387	104,052	90,948
94	87	1.00	176	21.6	310.4	122	18165	17778	106,774	93,441
96	89	1.00	178	21.8	313.4	121	18548	18165	109,462	95,900
98	91	1.00	180	22.1	316.3	119	18927	18548	112,116	98,326
100	93	1.00	182	22.3	319.2	117	19301	18927	114,736	100,719

Douglas fir — Site Index 130 — Douglas fir
DNR #41 Base 50 — Base 50

7-9

Haveluar -123

Ponderosa Pine

Site Index 120 — Base 100 — Site Index 120

Total Age	BH Age	Norm.	Site Height *feet*	Ave. DBH *inches*	Per Acre Data: Basal Area *sq ft*	Trees /Acre	Gross Cu.Ft.	Net 4" Cu.Ft.	Scrib 6" Bd Ft
20	10	1.00	36	5.3	126	813	2126	1032	
25	15	1.00	45	6.5	160	695	3110	1992	341
30	20	1.00	53	7.4	186	622	4024	2917	4,316
35	25	1.00	59	8.2	206	563	4865	3786	8,456
40	30	1.00	66	8.9	222	510	5640	4597	12,639
45	35	1.00	72	9.6	235	462	6356	5352	16,803
50	40	1.00	77	10.3	244	419	7018	6054	20,912
55	45	1.00	82	11.0	252	379	7632	6707	24,945
60	50	1.00	87	11.7	257	344	8202	7316	28,889
65	55	1.00	92	12.4	261	312	8734	7883	32,737
70	60	1.00	97	13.1	264	284	9230	8412	36,486
75	65	1.00	101	13.7	266	259	9694	8906	40,134
80	70	1.00	105	14.4	267	236	10128	9367	43,680
85	75	1.00	109	15.1	267	216	10535	9798	47,124
90	80	1.00	113	15.7	267	199	10917	10201	50,468
95	85	1.00	116	16.4	267	183	11276	10578	53,714
100	90	1.00	120	17.0	266	169	11614	10931	56,862
105	95	1.00	123	17.6	265	156	11931	11260	59,917
110	100	1.00	127	18.3	264	145	12230	11569	62,880
115	105	1.00	130	18.9	263	135	12512	11858	65,753
120	110	1.00	133	19.5	262	126	12779	12128	68,540
125	115	1.00	136	20.1	261	118	13030	12381	71,243
130	120	1.00	139	20.8	260	111	13267	12617	73,864
135	125	1.00	142	21.4	259	104	13492	12839	76,408
140	130	1.00	145	21.9	258	98	13704	13047	78,877
145	135	1.00	147	22.5	257	93	13905	13241	81,273
150	140	1.00	150	23.1	257	88	14096	13423	83,600
155	145	1.00	153	23.7	256	84	14277	13594	85,860
160	150	1.00	155	24.2	256	80	14449	13755	88,058

123
6" Bd ft
22,774
31,107
57,990

Ponderosa Pine
CZ FMSS 1974

Site Index 120

Ponderosa Pine
Base 100

7.11

108c Philomath · 104

Ponderosa Pine

Site Index 105 — Base 100 — Site Index 105

Total Age	BH Age	Norm.	Site Height *feet*	Ave. DBH *inches*	Per Acre Data: Basal Area *sq ft*	Trees /Acre	Gross Cu.Ft.	Net 4" Cu.Ft.	Scrib 6" Bd Ft	
20	10	1.00	31	4.2	111	1,170	1455	486		
25	15	1.00	39	5.3	144	944	2242	1235		
30	20	1.00	47	6.1	169	820	2983	1976		
35	25	1.00	52	6.9	188	728	3670	2683	2,979	
40	30	1.00	57	7.6	204	651	4304	3349	6,116	
45	35	1.00	63	8.2	215	583	4891	3971	9,301	
50	40	1.00	67	8.9	225	523	5434	4553	12,488	11,992
55	45	1.00	72	9.5	231	469	5938	5095	15,647	
60	50	1.00	76	10.1	236	422	6406	5601	18,760	18,155
65	55	1.00	80	10.8	240	380	6841	6073	21,814	
70	60	1.00	84	11.4	243	344	7246	6513	24,802	24,099
75	65	1.00	88	12.0	244	311	7624	6924	27,718	
80	70	1.00	92	12.6	245	283	7978	7307	30,559	
85	75	1.00	95	13.2	245	258	8308	7665	33,322	
90	80	1.00	98	13.8	245	235	8618	7998	36,008	
95	85	1.00	102	14.4	245	216	8907	8310	38,616	
100	90	1.00	105	15.0	244	199	9179	8601	41,146	40,187
105	95	1.00	108	15.6	243	183	9434	8873	43,600	
110	100	1.00	111	16.2	242	170	9674	9126	45,977	
115	105	1.00	114	16.7	241	157	9899	9362	48,281	
120	110	1.00	116	17.3	240	147	10111	9583	50,513	
125	115	1.00	119	17.9	238	137	10310	9789	52,674	
130	120	1.00	122	18.4	237	128	10498	9980	54,768	
135	125	1.00	124	19.0	236	121	10675	10159	56,795	
140	130	1.00	127	19.5	236	114	10843	10326	58,758	
145	135	1.00	129	20.0	235	107	11000	10482	60,660	
150	140	1.00	131	20.5	234	102	11150	10627	62,503	
155	145	1.00	133	21.0	234	97	11291	10763	64,290	
160	150	1.00	136	21.5	233	92	11426	10890	66,023	

108 Plattsmouth - 131

Ponderosa Pine

Site Index 130 — Base 100 Site Index 130 — 131

Total Age	BH Age	Norm.	Site Height *feet*	Ave. DBH *inches*	Per Acre Data: Basal Area *sq ft*	Trees /Acre	Gross Cu.Ft.	Net 4" Cu.Ft.	Scrib 6" Bd Ft
20	10	1.00	39	6.1	135	664	2623	1445	
25	15	1.00	49	7.3	170	584	3745	2552	2,966
30	20	1.00	58	8.3	197	530	4779	3603	7,806
35	25	1.00	64	9.1	218	484	5730	4585	12,737
40	30	1.00	71	9.9	234	442	6604	5497	17,654
45	35	1.00	78	10.6	247	403	7410	6343	22,504
50	40	1.00	84	11.3	257	367	8156	7130	27,259 27,953
55	45	1.00	89	12.0	265	334	8848	7860	31,904
60	50	1.00	95	12.8	271	305	9492	8541	36,431 37,228
65	55	1.00	100	13.5	275	278	10092	9175	40,836
70	60	1.00	105	14.2	278	253	10652	9766	45,118
75	65	1.00	109	14.9	280	232	11177	10318	49,279
80	70	1.00	114	15.6	281	212	11668	10834	53,319
85	75	1.00	118	16.3	282	195	12130	11317	57,240
90	80	1.00	122	17.0	282	179	12563	11769	61,045
95	85	1.00	126	17.7	281	165	12971	12192	64,738
100	90	1.00	130	18.3	281	153	13356	12588	68,321 69,547
105	95	1.00	134	19.0	280	142	13718	12959	71,797
110	100	1.00	137	19.7	279	132	14060	13307	75,169
115	105	1.00	141	20.4	278	123	14383	13633	78,442
120	110	1.00	144	21.0	277	115	14688	13939	81,618
125	115	1.00	147	21.7	276	108	14976	14226	84,700
130	120	1.00	151	22.3	275	101	15249	14495	87,692
135	125	1.00	154	22.9	274	95	15507	14747	90,598
140	130	1.00	157	23.6	273	90	15752	14984	93,421
145	135	1.00	160	24.2	273	85	15985	15206	96,163
150	140	1.00	162	24.8	272	81	16206	15416	98,829
155	145	1.00	165	25.4	271	77	16415	15612	101,422
160	150	1.00	168	26.0	271	73	16615	15797	103,945

Ponderosa Pine
CZ FMSS 1974

Site Index 130

Ponderosa Pine
Base 100

7.12

EXHIBIT 8

DOUGLAS FIR LOG PRICES 1978-1982, 1983

REGION 1 - WESTERN OREGON UNIT
Reporting format: ODF reporting as of 4th quarter 1981
Source: Oregon Department of Forestry Forest Management Division
http://www.odf.state.or.us/divisions/management/asset_management/logprices/logP483.HTM

Domestically Processed Logs (Delivered to a mill; "Pond Value")

1978

Douglas-Fir Grade	Quarter 1st	2nd	3rd	4th	Average
#1P	$ 460	475	475	475	471
#2P	$ 415	435	435	435	430
#3P	$ 358	389	389	389	381
SM	$ 283	338	338	338	324
#2S	$ 242	287	287	287	276
#3S	$ 191	250	250	250	235
#4S	$ 161	200	200	200	190
SC	$ 125	157	157	157	149
Utility	$ 70	80	80	80	78

1979

Douglas-Fir Grade	Quarter 1st	2nd	3rd	4th	Average
#1P	$ 531	531	584	584	555
#2P	$ 476	476	523	523	500
#3P	$ 425	425	467	467	446
SM	$ 385	385	423	423	404
#2S	$ 322	322	354	354	338
#3S	$ 282	282	310	310	296
#4S	$ 256	256	281	281	269
SC	$ 160	160	176	176	168
Utility	$ 90	90	99	99	95

1980

Douglas-Fir Grade	Quarter 1st	2nd	3rd	4th	Average
#1P	$ 584	584	584	584	584
#2P	$ 523	523	523	523	523
#3P	$ 467	467	467	467	467
SM	$ 423	423	423	423	423
#2S	$ 354	354	354	354	354
#3S	$ 310	310	310	310	310
#4S	$ 281	281	281	281	281
SC	$ 176	176	176	176	176
Utility	$ 99	99	99	99	99

1981

Douglas-Fir Grade	Quarter				Average
	1st	2nd	3rd	4th	
#1P	$ 584	584	584	648	648
#2P	$ 523	523	523	550	550
#3P	$ 467	467	467	439	439
SM	$ 423	423	423	390	415
#2S	$ 354	354	354	323	346
#3S	$ 310	310	310	238	292
#4S	$ 281	281	281	208	263
SC	$ 176	176	176	212	185
Utility	$ 99	99	99	104	100

1982

Douglas-Fir Grade	Quarter				Average
	1st	2nd	3rd	4th	
1P	$ 600	512	512	512	534
2P	$ 510	439	439	439	457
3P	$ 425	370	370	370	384
SM	$ 375	316	316	316	331
2S	$ 295	258	258	258	267
3S	$ 225	202	202	202	208
4S	$ 190	169	169	169	174
SC	$ 190	164	164	164	171
Utility	$ 90	123	123	123	115
CR (2S & better)	$ --	303	303	303	303
CR (2S, 3S, and 4S)	$ --	243	243	243	243

1983

Douglas-Fir Grade	Quarter				Average
	1st	2nd	3rd	4th	
1P	$ 512	505	505	505	507
2P	$ 439	410	425	425	425
3P	$ 370	325	340	340	343
SM	$ 316	275	285	285	290
2S	$ 258	250	255	255	255
3S	$ 202	210	215	215	211
4S	$ 169	195	200	200	191
SC	$ 164	130	140	140	144
Utility	$ 123	75	75	75	87
CR (2S & better)	$ 303	--	--	--	303
CR (2S, 3S, and 4S)	$ 243	240	240	240	241

DOUGLAS FIR LOG PRICES 1978-1982, 1983

DF Grade	1978-1982 Average	1983 Average	%+	% -
1P	$ 558	507		- 9.1%
2P	$ 492	425		-13.6%
3P	$ 423	343		-18.9%
SM	$ 379	290		-23.5%
2S	$ 316	255		-19.3%
3S	$ 268	211		-21.3%
4S	$ 235	191		-18.7%
SC	$ 170	144		-15.3%
Utility	$ 97	87		-10.3%
CR (2S & better)	$ 303	303		n/c
CR (2S, 3S, and 4S)	$ 243	241		- 0.8%
Average*	$ 326	273	19.4**	-16.3

*In the absence of information concerning distribution of grades, it is not possible to assign the different grades their proper weight in calculating an overall average. This calculation assigns each grade equal weight, with the exception of the CR grades which were used only during the years 1982 and 1983 years and are not included.

** % by which 1978-82 prices exceed 1983 prices

PONDEROSA PINE LOG PRICES 1978-1982, 1983

Reporting format: ODF reporting as of 4th quarter 1981

Source: Oregon Department of Forestry Forest Management Division
http://www.odf.state.or.us/divisions/management/asset_management/logprices/logP483.HTM

Domestically Processed Logs (Delivered to a mill; "Pond Value")

Roseburg prices used where available; otherwise, Grants Pass prices

1978 (Grants Pass)

Grade	Quarter				Average
	1st	2nd	3rd	4th	
#1S	$ 300	347	347	347	335
SM	-	221	221	221	221
#2S	$ 225	305	305	305	285
#3S	$ 180	263	263	263	242
#4S	$ 152	187	187	187	178
#5S	$ 140	173	173	173	165
#6S	$ 110	147	147	147	138
Utility	-	-	-	-	-

1979 (Roseburg)

Grade	Quarter				Average
	1st	2nd	3rd	4th	
1S	$ 479	479	527	527	503
SM	$ 274	274	301	301	288
2S	$ 353	353	388	388	371
3S	$ 315	315	347	347	331
4S	$ 244	244	269	269	257
5S	$ 222	222	244	244	233
6S	$ 217	217	238	238	228
Utility	$ 130	130	130	130	130

1980 (Roseburg)

Grade	Quarter				Average
	1st	2nd	3rd	4th	
1S	$ 527	521	521	521	521
SM	$ 301	301	301	301	301
2S	$ 388	388	388	388	388
3S	$ 347	347	347	347	347
4S	$ 269	269	269	269	269
5S	$ 244	244	244	244	244
6S	$ 238	238	238	238	238
Utility	$ 130	130	130	130	130

1981 (Roseburg)

Grade	Quarter 1st	2nd	3rd	4th	Average
Peeler	-	-	-	610	610
1S	$ 527	521	521	500	516
SM	$ 301	301	301	275	295
2S	$ 388	388	388	430	399
3S	$ 347	347	347	300	335
4S	$ 269	269	269	275	271
5S	$ 244	244	244	250	246
6S	$ 238	238	238	210	231
CR	-	-	-	315	315
Utility	$ 130	130	130	115	126

1982 (Roseburg)

Grade	Quarter 1st	2nd	3rd	4th	Average
Peeler	$ 575	575	575	575	575
1S	$ 495	495	495	495	495
SM	$ 300	300	300	300	300
2S	$ 390	390	390	390	390
3S	$ 300	300	300	300	300
4S	$ 250	250	250	250	250
5S	$ 175	175	175	174	175
6S	$ 150	150	150	150	150
CR	$ 250	250	250	250	250
Utility	$ 100	100	100	100	100

1983 Roseburg (1st quarter); Grants Pass (2nd-4th quarters)

Grade	Quarter 1st	2nd	3rd	4th	Average
Peeler	$ 575	-	-	-	575
1S	$ 495	-	-	-	495
SM	$ 300	300	300	300	300
2S	$ 390	450	450	450	435
3S	$ 300	375	375	375	356
4S	$ 250	225	225	225	231
5S	$ 175	200	200	200	194
6S	$ 150	160	160	160	158
CR	$ 250	240	240	240	243
Utility	$ 100	55	-		78

PONDEROSA PINE LOG PRICES 1978-1982, 1983

PP Grade	1978-1982 Average	1983 Average	%+	%+/-
Peeler	$ 593	575		- 3.0%
1S	$ 474	495		+ 4.4%
SM	$ 281	300		+ 6.7%
2S	$ 366	435		+18.9%
3S	$ 311	356		+14.5%
4S	$ 245	231		- 5.7%
5S	$ 213	194		- 8.9%
6S	$ 197	158		-19.8%
CR	$ 283	243		-14.1%
Utility	$ 122	78		-36.1%
Average*	$ 309	307	0.065**	-.0065%

*In the absence of information concerning distribution of grades, it is not possible to assign the different grades their proper weight in calculating an overall average. This calculation assigns each grade equal weight, with the exception of the CR grades which were used only during the years 1982 and 1983 years and are not included.

** % by which 1978-82 prices exceed 1983 prices

EXHIBIT "I"

EXHIBIT 9

Marc E. Setchko
CONSULTING FORESTER

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Phone: (541) 344-0473
FAX: (541) 344-7791

February 23, 2004

Lane County Planning Commission

RE: Lane County File #PA 03-5657, Dahlen; Response to Goal One Coalition Letter dated February 5, 2004

Members of the Planning Commission:

In conjunction with my Forest Productivity Analysis, completed in December, 2003, I have enclosed the following written response to a letter written by Jim Just of Goal One Coalition. I have addressed each issue as presented in the letter, most of which I have already addressed in my analysis. I am answering these questions as a qualified, Society of American Foresters Certified Professional Forester (#2953), with 27 years of experience including 17 years as a consultant, with Bachelor of Science (Cal Poly, SLO) and Master of Forestry (Oregon State) Degrees. As a consultant I have extensive experience in drawing up forest management plans, handling the administration of these plans and the merchandising of logs to maximize the return to my clients.

Following are responses to questions raised in Goal One Letter:

Mr. Just states that my report does not assert that NRCS data are not available for soils on the subject parcel, and does not assert or show that NRCS data are inaccurate. Therefore no alternative method for determining productivity, including income potential, can be used.

I did not make either of these assertions in my report. Jim Belknap did all of the cu.ft./ac./yr. calculations using only the data from the 1997 Lane County Soil Ratings for Forestry and Agriculture. No alternative methodology was used.

Mr. Just then presents a table of his own to show the parcel in question is capable of producing 155.40 cf/ac/yr. I have compiled six separate tables for comparison, all using SCS/NRCS data (the NRCS is the new name for the SCS; same entity). I have also included ponderosa pine figures for the soil types Jim Just provides site index figures for, even though he provides no exhibits showing where these site indexes come from. Before introducing these tables some clarification on data used by Jim Just must be presented.

1) KMX as a "merchantable" species (see ORS 197.247(1)(b)(C)). KMX is a hybrid cross between knobcone pine and Monterey pine. It would grow well on this site. However, knobcone pine is small and slow growing, it is valuable as a ground cover to shelter more valuable trees after a forest fire. It has no commercial value. Monterey pine is a taller tree used as ornamentals or for windbreaks. It has no commercial value. The cross between the two is used primarily to grow trees on marginal sites where trees are desired for ornamental, aesthetic or other reasons. There is no current commercial market for this species.

2) Hybrid poplar as a "merchantable" species. There currently is no market for poplar. In the past there was a market for the chips; that has ceased to exist. The other argument which could be raised is that you can buy "poplar" boards at several locations in the area. The poplar being sold is called yellow poplar and comes from the tulip tree grown in the southeast portion of the country. Poplar would also not grow on the site in question due to moisture constraints.

3) After stating that an alternative method (to NRCS data and/or Dept. of Forestry methodology) for determining productivity cannot be used, Mr. Just presents estimates of cf/ac/yr data with no supporting tables or exhibits.

4) Mr. Just has compiled his table from multiple sources, including figures from the 1990 Office of State Forester Memorandum, General File 7-1-1. He has used these figures after stating in an earlier rebuttal letter to Lane County (see Lane County File #PA 02-5838, Ogle), that this file does not exist.

Using 1997 Lane County Soil Ratings for Forestry and Agriculture (NRCS Data).

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	none	0
41C	12.157	DF	109	152	1,847.864
43C	10.161	DF	NA	54	548.694
43E	28.514	DF	NA	63	1,796.382
52D	13.864	DF	NA	none	0
78	15.009	DF	NA	none	0
102C	34.574	DF	NA	none	0
105A	11.637	DF	NA	none	0
108C	9.746	DF	NA	none	0
113C	0.371	DF	107	149	55.279
125C	9.042	DF	NA	none	0
125D	3.950	DF	NA	none	0
135E	27.358	DF	110	154	4,213.132
138E	27.256	DF	NA	none	0
138G	37.011	DF	NA	none	0
	320.492				8,461.351

Total - 8,461.351 cu.ft. ÷ 320.492 ac. = 26.401 cf./ac./yr.

Using Lane County "Green Sheet" Soil Ratings (SCS Data).

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	97	130	1,580.410
43C	10.161	DF	NA	45	457.245
43E	28.514	DF	NA	45	1,283.130
52D	13.864	DF	NA	40	554.560
78	15.009	DF	125	184	2,761.656
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	DF	NA	45	438.570
113C	0.371	DF	102	140	51.940
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	110	154	4,213.132
138E	27.256	DF	NA	70	1,907.920
138G	37.011	DF	NA	70	2,590.770
	320.492				21,502.268

Total - 21,502.268 cu.ft. ÷ 320.492 ac. = 67.091 cf./ac./yr.

9.2

Using Office of State Forester Forest Soil Ratings Memorandum (SCS Data).

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	120	115	1,398.055
43C	10.161	DF	NA	45	457.245
43E	28.514	DF	NA	45	1,283.130
52D	13.864	DF	NA	40	554.560
78	15.009	DF	159	169	2,536.521
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	DF	NA	45	438.570
113C	0.371	DF	131	131	48.601
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	160	170	4,650.860
138E	27.256	DF	90	70	1,907.920
138G	37.011	DF	90	70	2,590.770
	320.492				21,529.167

Total - 21,529.167 cu.ft. ÷ 320.492 ac. = 67.175 cf./ac./yr.

Selecting the highest productivity figures from the three tables presented.

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	109	152	1,847.864
43C	10.161	DF	NA	54	548.694
43E	28.514	DF	NA	63	1,796.382
52D	13.864	DF	NA	40	554.560
78	15.009	DF	125	184	2,761.656
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	DF	NA	45	438.570
113C	0.371	DF	107	149	55.279
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	160	170	4,650.860
138E	27.256	DF	90	70	1,907.920
138G	37.011	DF	90	70	2,590.770
	320.492				22,815.490

Total - 22,815.490 cu.ft. ÷ 320.492 ac. = 71.189 cf./ac./yr.

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Selecting the highest productivity figures from all tables, then including ponderosa pine figures (with no exhibits to show where this figures came from) as presented by Mr. Just.

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	109	152	1,847.864
43C	10.161	DF	NA	54	548.694
43E	28.514	DF	NA	63	1,796.382
52D	13.864	PP	92	113	1,566.632
78	15.009	DF	125	184	2,761.656
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	PP	104	141	1,374.186
113C	0.371	DF	107	149	55.279
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	160	170	4,650.860
138E	27.256	DF	90	70	1,907.920
138G	37.011	DF	90	70	2,590.770
	320.492				24,763.178

Total - 24,763.178 cu.ft. ÷ 320.492 ac. = 77.266 cf./ac./yr.

Selecting the highest productivity figures from all tables, then including ponderosa pine figures from the Office of State Forester Forest Soil Ratings Memorandum (SCS Data).

Soil Unit	Acres	Species	Site Index	Cf/Ac/Yr	Total Cu.Ft. Productivity
28C	79.842	DF	NA	40	3,193.680
41C	12.157	DF	109	152	1,847.864
43C	10.161	DF	NA	54	548.694
43E	28.514	DF	NA	63	1,796.382
52D	13.864	PP	92	88	1,220.032
78	15.009	DF	125	184	2,761.656
102C	34.574	DF	NA	45	1,555.830
105A	11.637	DF	NA	45	523.665
108C	9.746	PP	104	110	1,072.060
113C	0.371	DF	107	149	55.279
125C	9.042	DF	NA	30	271.260
125D	3.950	DF	NA	30	118.500
135E	27.358	DF	160	170	4,650.860
138E	27.256	DF	90	70	1,907.920
138G	37.011	DF	90	70	2,590.770
	320.492				24,114.452

Total - 24,114.452 cu.ft. ÷ 320.492 ac. = 75.242 cf./ac./yr.

All of these tables presented show the subject property produces less than 85 cu. ft./ac./yr. of "merchantable" timber volume. This has been determined by Lane County, and the State of Oregon, to be the measuring parameter for marginal soils.

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THE WOODLAND WORKBOOK

REFORESTATION

EC 1498 • Reprinted April 2002 $1.50

EXHIBIT 10

Successful Reforestation: An Overview

M.M. Atkinson and S.A. Fitzgerald

Contents

Mary M. Atkinson, former communications forester, Willamette Industries; and Stephen A. Fitzgerald, Extension forester, Central Oregon, Oregon State University.

So you'd like to plant some trees! As the saying goes, "The best time to plant a tree was 30 years ago—the next best time is now." This publication gets you started on the right track and answers some common reforestation questions. It provides a brief overview of the steps involved in a typical reforestation operation, including:

- Preparing the planting site
- Obtaining suitable seedlings
- Planting seedlings
- Plantation maintenance
- Financing reforestation activities

Also, you'll find references to other publications that provide more detail on reforestation. They are highly recommended reading.

OREGON STATE UNIVERSITY
EXTENSION SERVICE

Why reforest? Well, for one thing, it's the law. Reforestation is required when timber harvesting reduces the number of trees below specified stocking* levels (see EC 1194, *Oregon's Forest Practice Rules*). You must complete reforestation within 24 months after completing a harvest operation. Depending on site productivity, at least 100 to 200 seedlings per acre must be established. In addition, seedlings must be well distributed across the area and "free to grow" (vigorous and above competing vegetation) within 6 years.

In general, commercial tree species suited for your site conditions are acceptable species for reforestation. Contact your local Oregon Department of Forestry office about your particular reforestation situation.

Because reforestation is labor intensive and expensive, planning is essential to assure success. Lack of attention to any one step can result in costly reforestation failures.

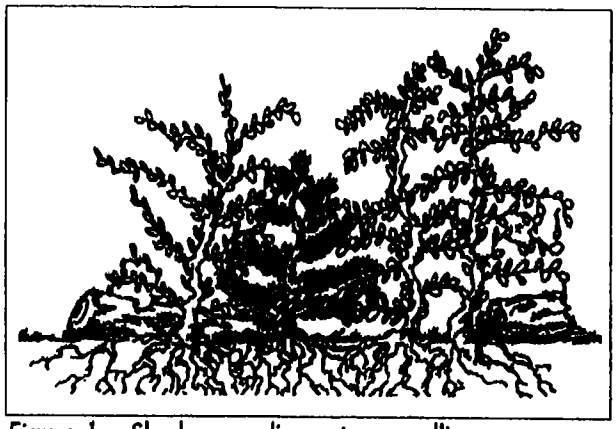

Figure 1.—Shrubs crowding a tree seedling.

Site preparation

The first thing to consider is the condition of the planting site. This includes the kind of vegetation present, soil type, aspect (compass direction the slope faces), and even the kinds of animals that might damage your trees.

Site characteristics are important because they affect critical site resources—water, light, temperature, and nutrients—necessary for seedling survival and growth.

Site preparation has three major objectives:

- Reduce the amount of vegetation that competes with tree seedlings
- Reduce habitat of animals that damage (browse and/or clip) seedlings
- Create plantable spots

Water is the most critical factor for seedling survival and growth, particularly the first few years after seedlings are planted. Grass, shrubs, and larger weeds are obvious competitors for moisture and light (Figure 1). It's important to remember that the root systems of grass and other vegetation are very extensive, spreading well beyond the aboveground portion of the plant.

Grass also provides habitat for meadow mice, voles, and gophers, which can severely damage or kill tree seedlings. You must keep grass away from newly planted seedlings for a few years to reduce habitat for these animal species.

Several methods or combinations of methods are available to prepare sites for planting. Costs depend on site conditions, methods used, existing vegetation, and amount of logging debris or slash. See EC 1188, *Site Preparation: An Introduction for the Woodland Owner.*

Mechanical methods

If there is a lot of slash or brush, you may need to use mechanical (tractor) or manual methods to create planting spots as well as to reduce brush competition. Heavy slash can make it difficult to plant an area and can pose a fire hazard. Disadvantages of mechanical methods are that they can remove topsoil, compact soil, and encourage grass and other vegetation to reestablish.

Burning also can reduce slash and brush competition, but it can be difficult to control. You first must move the slash into piles so you can control the fire more

* Stocking is the number of trees in a forest. Usually this is expressed as trees per acre or some relative measure—well-stocked, fully stocked, overstocked, understocked.

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easily. Contact your local Oregon Department of Forestry office before doing any burning.

Manual methods

Hand-scalping is difficult, gives only short-lived vegetation control, and is very expensive. You can place mulch mats made of heavy kraft paper or plastic at least 3 to 4 feet square around seedlings immediately after planting. These mats effectively control local vegetation, but they are expensive (Figure 2).

Chemical methods

When selecting chemical methods, know which weeds you want to control, select the appropriate herbicides that are registered for forestry use, and always *read* and *follow label directions.* Pesticide registrations change often, so always consult the label; it is your best source of information. Chemical site preparation methods are most cost effective and generally offer better long-term control of competing vegetation.

If you are planting in an old pasture or field or if the site isn't too brushy (that is, you can walk easily through the area), you can use a combination of chemical and manual methods. The purpose of preparing a site is not so much to clear a planting spot completely but rather to expose mineral soil and reduce the amount of vegetation that competes with seedlings for moisture and light.

Finally, remember that you have more options and that it's easier to control competing vegetation *before* you plant seedlings. Also, maintaining a weed-free environment the first 2 years after planting helps ensure good survival and vigorous seedlings.

Obtaining seedlings

You can get tree seedlings for your site by encouraging natural seeding, by transplanting wildlings (seedlings growing in the wild), or by purchasing high-quality, nursery-grown seedlings.

Figure 2.—Mats effectively control competing vegetation, but they are expensive.

Use herbicides safely!

- **Wear** protective clothing and safety devices as recommended on the label. **Bathe** or shower after each use.
- **Read** the herbicide label—even if you've used the herbicide before. **Follow closely** the instructions on the label (and any other directions you have).
- **Be cautious** when you apply herbicides. **Know** your legal responsibility as a pesticide applicator. You may be liable for injury or damage resulting from herbicide use.

Natural seeding of new trees (natural regeneration) from remaining or nearby "parent" trees can be effective under the right circumstances. Species such as hemlock, alder, and lodgepole pine produce regular cone crops and regenerate rapidly from natural seeding. In other cases, relying on natural seeding to regenerate a site is risky because cone crops of many other tree species (including Douglas-fir and ponderosa pine) are sporadic, and site conditions must be right for seeds to germinate and grow.

Using natural regeneration requires a written plan that is reviewed by the Oregon Forest Practices Forester. The written plan must be submitted within 12 months after timber harvesting has reduced tree stocking.

The written plan should estimate the time needed to regenerate adequately stocked, free-to-grow seedlings and alternative strategies that you will use if natural regeneration does not go as planned. Consult a Forest Practices Forester with the Oregon Department of Forestry if you are considering using natural regeneration to reforest your site.

For smaller planting projects (a few acres or less), you can use wildlings, provided they are of the correct species and taken from the same geographic area and elevation where you will replant them. Wildlings should appear healthy, be about 2 feet tall, and have an adequate root system left intact after digging. Ask owners' permission before removing wildlings from land that is not yours.

Nursery-grown tree seedlings are used most widely and are available from many sources. A list of nurseries is available from the OSU Extension Service and the Oregon Department of Forestry. To ensure that you'll have enough seedlings for your reforestation project, be sure to order several months in advance. Some nurseries allow you to order seedlings 6 months before the planting season.

Seedling costs range from $150 to $300 per 1,000 seedlings. Costs vary by nursery and by type of seedling (stock-type) purchased. Be cautious of buying "good deal" surplus trees that are given away or sold at low cost at the end of the planting season. These trees may not be suitable for your planting location or may be of low quality after a long period of storage. Low quality will result in poor survival and growth—and so, these trees may cost you more in the long run.

To improve seedling survival and growth, you need to match the seedling properly to the site (environment) where it will be planted. A proper match begins when you order seedlings. You must tell the nursery what species and stock-type you want, the seed zone and approximate elevation where they will be planted, and how many seedlings you need. See EC 1196, *Selecting and Buying Quality Seedlings*, for more detailed information.

The following sections review some of the basic considerations for matching trees to your planting site.

Species selection

Different tree species are adapted to different site conditions. Ponderosa pine does well in eastern Oregon and on the drier, heavy clay soils of the Willamette Valley. Douglas-fir does best in many western Oregon locations except on wet sites or in shady areas, where western hemlock or western redcedar may be a better choice. Some species, such as western redcedar, are more susceptible to animal browse.

It is possible to plant more than one species in an area. To be successful, you should become familiar with the ecological requirements (tolerance to frost, high temperatures, light, and moisture) of the

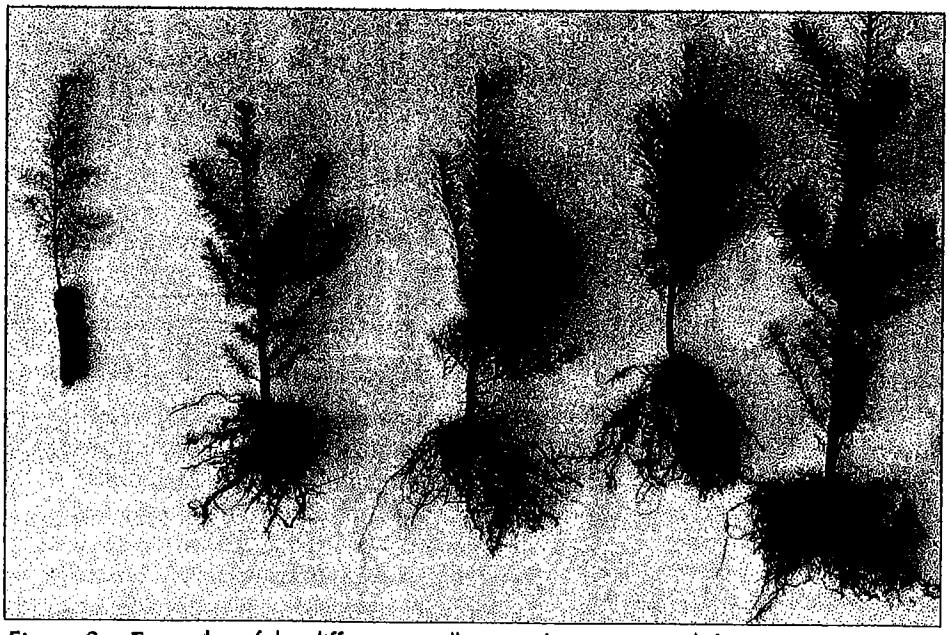

Figure 3.—Examples of the different seedling stock-types. From left: container; plug + 1; 2 + 0; 1 + 1; and 2 + 1.

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different species and their growth habits. Investigate very carefully before planting nonnative (also called "exotic") tree species. Consult a local forester for specific information on selecting species suitable for your area.

Seed zone and elevation

To ensure that trees are adapted to your site conditions, order seedlings that are specifically for your seed zone and elevation. Seed zone maps and related information are in EC 1196, *Selecting and Buying Quality Seedlings*; or, contact a forester with the OSU Extension Service or Oregon Department of Forestry.

Stock-type

Stock-type is a *general* indication of seedling size, age, and other characteristics (Figure 3). For example, a 2-0 seedling is grown for 2 years in a seedbed. A 1-1 seedling is grown for 1 year in a seedbed and then transplanted at wider spacing and grown for another year in a transplant bed. Both trees are 2 years old, but because the 1-1 was transplanted, it is a larger seedling (larger diameter, taller, more root mass). A 1-1 seedling is more expensive, but it may be worth the extra cost in terms of better survival and faster growth.

Larger seedlings can withstand more deer browse and are better able to compete with fast-growing shrubs. On the other hand, on hot, dry sites a smaller stock-type may be a better choice because the seedling has a better balance between shoots and roots, enabling the seedling to survive under harsher conditions.

Planting seedlings

Careful handling and proper planting of seedlings are important steps to successful reforestation. You can find more detailed information in EC 1095, *Seedling Care and Handling,* and EC 1504, *The Care and Planting of Tree Seedlings on Your Woodland.* The following sections review some of the basics for successful planting.

***Table 1.*—Trees per acre at various spacings.**

Trees/acre	Spacing (ft.)
1,210	6 x 6
681	8 x 8
436	10 x 10
302	12 x 12
222	14 x 14
170	16 x 16

Spacing and selecting planting spots

Trees usually are planted at a 10' x 10' spacing in western Oregon and 12' x 12' on drier sites in central and eastern Oregon. If you anticipate severe (hot and dry) site conditions and heavier than normal mortality, you could consider planting trees closer together to ensure that enough survive to occupy the site. Table 1 is a guide to the number of trees to plant at a given spacing.

Your planting pattern need not be square. It is more important to select good planting spots—areas of exposed mineral soil, free of weeds—than to space trees precisely. On hot, south-facing slopes, selecting good planting spots, such as those areas shaded by stumps or logs, can be more effective than planting additional trees. Following up with good weed control can improve seedling survival on these severe sites.

Timing

The best time to plant conifer seedlings in western Oregon is from January through March. Hardwood seedlings do best if planted from mid-March to mid-April. Seedlings are dormant during these months and can withstand handling and planting.

Soils in eastern Oregon or at higher elevations may be frozen or snow covered during this time. Plant these areas as soon as possible after snow melts and the ground thaws (late March through April).

Some growers have tried planting in the fall. This is risky because seedlings are not fully dormant and so are susceptible to damage. Also, fall rains are unpredictable, and dry soils generally result in poor seedling survival.

Care and handling

Keep seedlings cool (34 to 40°F) and moist and handle them gently at *all* times. When transporting seedlings to the planting site, keep them away from direct sunlight and cover them with a reflective tarp. Store extra seedlings temporarily in a shaded, cool spot at the planting site until needed. Do not allow seedlings to freeze.

Tools and planting

Special long-bladed shovels, planting spades, planting hoes (called hoedads), or power augers are used to plant seedlings. Planting holes should be deep enough to accommodate roots. Plant the seedling so its roots spread downward in the planting hole and are not crammed in, forming "J-roots." Plant seedlings upright so that all roots are well covered, and firm the soil around roots to eliminate air pockets. Avoid mixing any organic debris, such as rotten wood, branches, or needles, in the planting hole.

Fertilizing seedlings at planting time is not recommended under most conditions. Soil fertility usually is adequate. Fertilization actually may harm seedlings by burning the roots, encouraging excessive top growth, or by encouraging the growth of weeds that compete with seedlings.

If you hire a planting contractor, obtain and check references first. Names of local contractors may be available from an OSU Extension forester or the Oregon Department of Forestry. It is important to monitor tree planters to be sure they do a good job.

Planting costs vary with site conditions, size of seedling, spacing, and availability of planting crews. Costs may range from 25 to 45 cents per seedling or roughly from $100 to $200 per acre. This includes the costs of seedlings and labor.

Seedling protection

If populations of deer, elk, gophers, or mountain beavers are large, you may need to protect newly planted seedlings. To deter deer and elk, you can place protective devices (Figure 4) around seedlings or use repellents. Control gophers by baiting and trapping; mountain beavers usually are trapped to control their populations. For specific information on animal damage protection, see:

- EC 1144, *Controlling Mountain Beaver Damage in Forest Plantations*
- EC 1201, *Understanding and Controlling Deer Damage in Young Plantations*
- EC 1255, *Controlling Pocket Gopher Damage to Conifer Seedlings*
- EC 1256, *Controlling Vole Damage to Conifer Seedlings*

On south-facing slopes, seedlings may be damaged or killed by intense sunlight and heat. Shading the seedling's lower stem with shade cards (available commercially or homemade) can improve seedling survival on these harsh sites, particularly if there is little shade from stumps, logs, and slash.

Plantation maintenance

Once seedlings are planted, additional maintenance often is needed to ensure their continued survival and growth. A systematic walk through the plantation each year can reveal whether seedlings are alive and growing well and whether action is needed to control weeds or protect trees from animal damage.

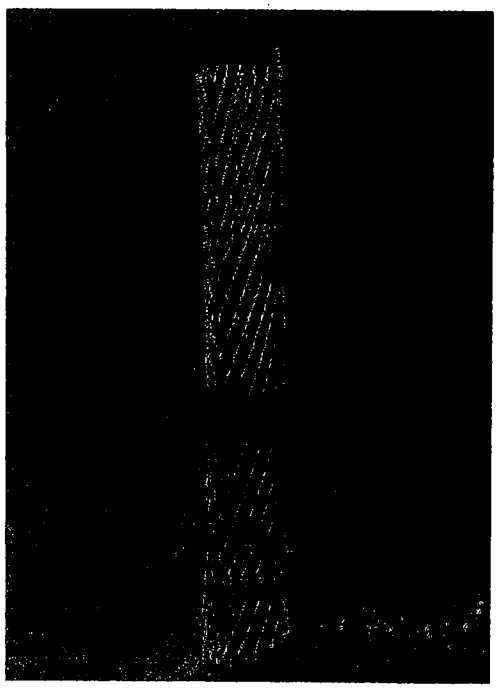

Figure 4.—A vexar tube protects against browsing deer.

Seedling growth is slow the first year or two (4 to 6 inches). Some hardwood species, such as alder, can grow much faster. After the first year or two, and depending on site conditions, you should get 1 to 3 feet of height growth on Douglas-fir seedlings as they become established and growth improves.

Be sure to watch the site closely so that weeds don't reinvade before your seedlings take hold and grow. The first 2 years are critical, and retreatment may be necessary to ensure survival. A healthy plantation is your reward for a job well done! Find additional information on weed control in EC 1388, *Introduction to Conifer Release.*

For more information on plantation maintenance and protection from animal damage, contact the OSU Extension Service and the Oregon Department of Forestry.

Steps for successful reforestation

- Carefully plan and evaluate your site.
- Do an excellent job of site preparation.
- Select the proper species and seedling stock-type for your site, and order early.
- Carefully handle and plant seedlings.
- Follow up with weed and animal damage control, if needed, the first 2 years.
- Enjoy your young forest and watch it grow!

Financial assistance for reforestation

Many landowners are interested in financial assistance for reforestation: either reimbursement for some costs of reforestation, or tax savings from having your property assessed as forest land, or state and federal reforestation tax credits.

Cost-share money may be available for reforestation in some situations under the Forestry Incentive Program (FIP) and the Stewardship Incentive Program (SIP). For more information, contact your local Farm Services Agency (FSA). The FSA is listed in the phone book under "United States Government—Agriculture Dept. of." FSA administers these cost-share programs and works closely with your local Service Forester from the Oregon Department of Forestry. You can find additional information in EC 1119, *Incentive Programs for Woodland Management and Resource Conservation.*

If your land currently has no trees but could support native, commercial tree species, you might qualify for "forest deferral" if you plant seedlings and manage your land for timber. This special tax designation provides significant property tax savings to you. To qualify, you must have a management plan and own at least 2 acres that are contiguous (not including area for residence), *and* you must establish enough trees to meet or exceed the forest practices minimum reforestation stocking requirements. Apply for forest deferral between January 1 and April 1 with your county assessor's office. The county assessor can give you additional details.

Reforestation tax credits are available to help offset reforestation costs. Information on state reforestation tax credits can be obtained from the local Oregon Department of Forestry Service Forester. Contact the IRS for information on federal reforestation tax credits.

For further reading

OSU Extension publications

Oregon's Forest Practice Rules, EC 1194. P.W. Adams. 1996. Corvallis: Oregon State University Extension Service. $1.00

Controlling Mountain Beaver Damage in Forest Plantations, EC 1144. 1993. D.S. deCalesta, R.E. Duddles, and M.C. Bondi. Corvallis: Oregon State University Extension Service. $1.00

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Introduction to Conifer Release, EC 1388. 1998. R.E. Duddles and M. Cloughesy. Corvallis: Oregon State University Extension Service. $1.50

Selecting and Buying Quality Seedlings, EC 1196. 1999. R.E. Duddles and C.G. Landgren. Corvallis: Oregon State University Extension Service. $2.00

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Site Preparation: An Introduction for the Woodland Owner, EC 1188. 1998. S.A. Fitzgerald. Corvallis: Oregon State University Extension Service. $2.50

Incentive Programs for Woodland Management and Resource Conservation, EC 1119. 2002. B. Withrow-Robinson and R. Fletcher. Corvallis: Oregon State University Extension Service. $1.00

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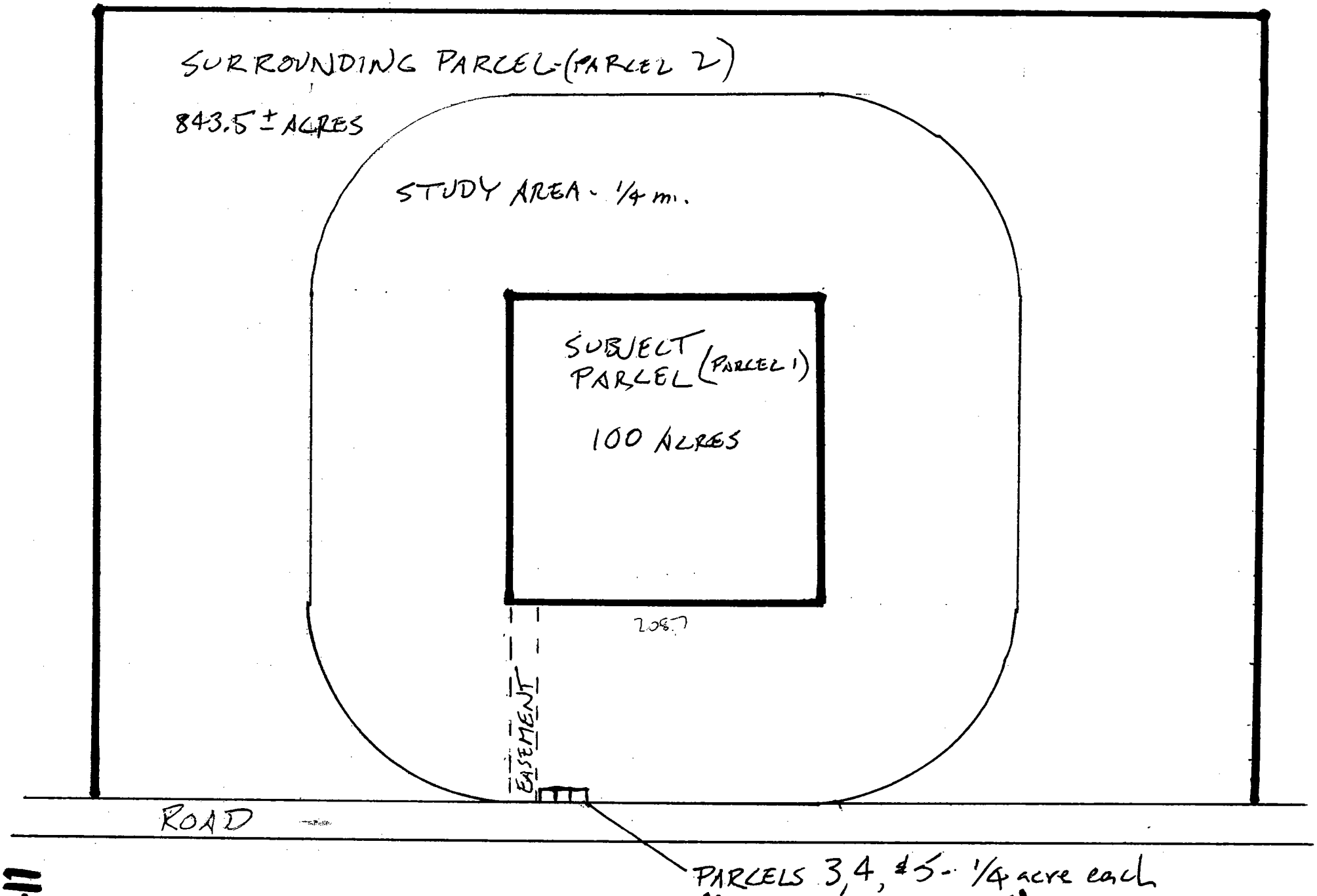

II-11

EXHIBIT II: "PARCEL SIZE" TEST

EXHIBIT 12

ITEM 4.1

VICTOR ATIYEH
GOVERNOR

Department of Land Conservation and Development

1175 COURT STREET N.E., SALEM, OREGON 97310 PHONE (503) 378-4926

M E M O R A N D U M

September 16, 1983

TO: Land Conservation and Development Commission

FROM: James F. Ross, Director

SUBJECT: ITEM 4.1: EXPLANATION OF SB 237: THE MARGINAL LANDS BILL

Since passage of SB 237 (Chapter 826, Oregon Laws 1983) there have been numerous detailed questions about the meaning and intent of this Act. Attached is a DRAFT memo which the Department is considering distributing statewide to all interested parties about SB 237.

Prior to its distribution, I wanted to provide it to the Commission and other people knowledgable about the Act in order to receive any comments on its usefulness and readability.

Any suggestions and/or questions are welcome.

This will be discussed further at the Commission's September 23-24, 1983 meeting.

JFR:RE:ad
5747B/4B

12-1

PRELIMINARY DRAFT
SUBJECT TO REVISION

MEMORANDUM

September 15, 1983

TO: Boards of Commissioners, County Courts, County Planners and Other Interested Parties

FROM: James F. Ross, Director, DLCD

SUBJECT: SB 237: THE MARGINAL LANDS BILL

As you know, the 1983 Legislature made important changes to Oregon's land use laws. The two most significant land use bills became law when Governor Atiyeh signed them on August 9: HB 2295--the Governor's land use reform bill; and SB 237--the "marginal lands" bill. The two bills contain provisions that will aid counties in bringing their plans into compliance with the Statewide Planning Goals. Because the "marginal land" bill has received much less attention than HB 2295, I would like to describe briefly how it works.

Both HB 2295 and SB 237 represent efforts by the Governor's Office and the Legislature to respond to recommendations made by the Governor's Task Force on Land Use last fall. SB 237 addresses two particular recommendations concerning agricultural land and forest land. The Task Force recommended that "marginal land" now covered by Goal 3 or Goal 4 be made available for rural residential development. The Task Force also recommended the 1981 Lots-of-Record law be amended to make eligible those lots created prior to January 1, 1965.

SB 237 defines "marginal land," sets forth uses that may be allowed on such land, expands the number of qualified lots-of-record under the 1981 law and changes EFU criteria for the review of farm and nonfarm dwellings.

A. Marginal Land

SB 237 (Section 2) defines land as "marginal" for farm or forest uses in two ways: (1) soils of low productivity for farm or forest uses, and (2) land divided into small ownerships, regardless of soil capability. The new law defines these two types of marginal land very precisely. This will no doubt leave out land that individual Counties consider "marginal." However, the precision has the advantage of leaving less room for disagreement whether land is "marginal" or not, eliminating the need for long findings, reducing the likelihood of appeals and easing the LCDC review burden.

Working along with the "low productivty" and "small ownerships" tests is the "income test." Land which meets either the "low

PRELIMINARY DRAFT
SUBJECT TO REVISION

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productivity" or the "small ownerships" test must also meet the "income test." The "income test" is designed to ensure that land which is being managed as part of a commercial farm of forest operation does not qualify as being marginal. That includes commercial ranches operating on Class VI soil (as many do), intensive commercial farms (such as nurseries) on small tracts, and successful woodlots.

SB 237 does not prescribe any particular approach to identifying "marginal land" in a County. Washington County is using a workable approach: it determines which County lands satisfy the "low productivity" or "small ownerships" tests first, and then which of those lands satisfy the "income test."

It should be noted that both agricultural land and forest land are eligible to be designated "marginal land."

1. "Low Productivity" Test: Section 2 (1)(b)(C)

   Land is eligible to be designated "marginal" if it is of low productivity for both farm and forest uses. SB 237 relies on the SCS Capability Classification System and the Site Index rating system as the measures of productivity because counties are already using this information in the preparation of their comprehensive plans.

   West of the Cascades, land is eligible if it is predominantly Class V, VI, VII or VIII soil on the SCS scale and is only capable of producing less than 85 cubic feet of merchantible timber per acre per year. East of the Cascades, land is eligible if it is predominantly Class V, VI, VII or VIII soil on the SCS scale and is only capable of producing less than 50 cubic feet of merchantible timber per acre per year.

   The Legislature intends "predominantly" to mean more than 50 percent. So, a 100-acre ownership that has 55 acres of Class VI soil and 45 acres of Class IV soil is still eligible to be "marginal land."

   Soil capability and site index information are readily available for almost all private land in Oregon from either the U.S.' Soil Conservation Service or the Oregon Forestry Department.

   Land that meets the "low productivity" test can be designated "marginal" if it meets the "income test" described below.

2. "Small Ownerships" Test: Section 2(1)(b)(A) and (B)

   There are two "small ownerships" tests, one for general application and one tailored specifically to apply in narrow valleys where small ownerships occur along a river or road rather than in a large cluster. However, a County can use either "small ownerships" tests anywhere in the County.

Test A

The first test is for clusters of ownerships primarily 20 acres and smaller. To apply the test, a County would choose a lot or parcel in the middle of a cluster of small tracts. The County would then draw a line around the center lot or parcel one-quarter mile from the boundaries of the lot or parcel. If the line passes through a nearby lot or parcel, then that lot or parcel is included in the "small ownerships" area. Once the line is drawn, the County checks to see whether 50 percent of the area included within the line was in lots or parcels 20 acres or less in size on July 1, 1983. For example, if the area within the line is 260 acres, it would meet the test if all the lots and parcels 20 acres or smaller added up to at least 130 acres (Section 2(1)(b)(A)).

A County can choose to draw the one-quarter mile perimeter around more than one lot or parcel, if the cluster of small ownerships is large. See the examples in Figures 1 and 2 (to be provided later).

SB 237 treats adjacent lots or parcels owned by the same person or a spouse, parent, child or sibling of the person, as one lot for the "small ownership" test. For example, assume two adjacent 15-acre tracts fall within the area described by the one-quarter mile line. If one is owned by Smith and the other by Jones, they count as two separate lots, adding 30 acres toward the 50 percent acreage total. If one is owned by Smith and the other by Smith's spouse, the tracts are treated as one 30-acre lot and cannot be counted toward the 50 percent total (Section 2(2) and (3)).

Land in exception areas can be included in the test area under this first test (Section 2 (4)). Also, any ownership that falls within the one-quarter mile perimeter, regardless of size, qualifies as "marginal" so long as 50 percent of the area within the test area is in ownerships smaller than 20 acres and meets the income test (Section 2 (6)).

For example, suppose there is an area of 25-acre to 30-acre tracts currently designated Agriculture or Forestry near an exception area adopted by the County. The County believes the tracts are "marginal" but cannot find any way to draw a perimeter including adjacent farm or forest land that meets the test. Under this test, the County can draw the line to take in the usually smaller five- and ten-acre ownerships in the exception area. If 50 percent of the test area is in ownerships 20 acres or less, the 25-acre and 30-acre tracts can be designated as "marginal" if they also meet the income test (see Figure 2).

Test B

The second "small ownerships" test works differently. A test area must include at least 240 acres. At least 60 percent of the area, not 50 percent as in the first test, must be in ownerships 20 acres or smaller. However, the area can take any shape the County wishes. The County can "gerrymander" the boundaries of the test area to take in small ownerships and exclude large ownerships (Section 2(1)(b)(B)).

For example, in some valleys there are narrow strips of five-acre and ten-acre lots along a road. Behind the small lots are large tracts of pasture or woodlots. An area like this would not qualify under the first test because the quarter-mile perimeter would take in the larger tracts. Under the second test, instead of drawing a quarter-mile line around a central lot, the line could be drawn as far down the road as necessary to make up the minimum 240-acre area.

It should be noted that, under this second "small ownerships" test, adopted exception areas may not be counted toward the 60 percent total of ownerships 20 acres or smaller (Section 2 (4)) (see Figure 3). However, just as for the first test, adjacent lots or parcels owned by the same person or a spouse, parent, child or sibling are treated as one lot.

3. "Income" Test: Section 2 (1)(a)

Land that satisfies either the "low productivity" or the "small ownership" tests qualifies as "marginal land" if it meets the "income" test. Land meets this test if it was not managed as part of a farm operation that produced at least $20,000 in annual gross income in three of the five years prior to January 1, 1983, and was not part of a forest operation that is capable of producing an average of $10,000 in annual gross income over the growing cycle.

Counties are not required to ask landowners to submit income information which landowners usually prefer to keep confidential. SB 237 authorizes counties to rely instead upon countywide statistics about average yield per acre and price per unit of farm products or livestock, compiled annually by OSU Extension Services, or any other objective data. Counties may also rely on average production by site index and average stumpage value to determine timber income (Section 2 (5)).

For example, suppose a County proposes to designate as "marginal" an 18-acre parcel in a "small ownership" area. For the past several years the parcel has been in wheat. The average yield in the County for those years was 60 bushels per acre. The average price was $3.75 per bushel. It has been leased to a farmer who has another 30 acres of wheat. Sixty bushels at $3.75 per bushel

times 48 acres equals $10,800. The land qualifies as "marginal" because it was not part of a farm operation grossing at least $20,000 per year.

Land which satisfied either the "low productivity" test or the "small ownerships" test and the "income" test can be designated "marginal" and used as authorized by SB 237. All goals other than Goals 3 and 4, however, still apply to the marginal land (Section 2(7)).

4. Uses Allowed on "Marginal Land": Section 3

SB 237 establishes for land designated as "marginal", a new zone very similar to a rural residential zone. As recommended by the Governor's Task Force, the new law allows much greater residential use than would otherwise be permitted by Goals 3 or 4.

First, there is a "lot-of-record" provision. A residence may be approved on all existing lots and parcels created before July 1, 1983, regardless of size or ownership. The only limitation is that if the lots occur in the Willamette Greenway or a designated floodplain or hazard area, they remain subject to those special local requirements (Section 3(2)).

Second, there is a generally applicable ten-acre minimum lot size for creation of new residential lots (Section 4 (1)). The lot size is 20 acres for those new tracts that border an EFU or forest zone. However, if land that remains zoned for EFU or forest uses would qualify as "marginal," even if they are not to be designated, the lot size on adjacent "marginal land" may also be ten acres. Existing lots smaller than the minimum lot size are still buildable under the "lot of record" provision.

The new law also authorizes temporary hardship dwellings and the same nonfarm uses outlined in ORS 215.213(1) and (2) of the exclusive farm use statute (for example, churches, schools, golf courses, utility facilities, etc.) (Section 6).

5. Implementation

SB 237 authorizes Counties to designate lands as "marginal" now, prior to acknowledgment, as a means to avoid controversy over rural residential exception areas. Counties need not wait to apply this Act until after acknowledgment.

SB 237 contemplates that counties will designate "marginal lands" by adopting plan policies that reflect the provisions of the Act, and adopting a new "marginal lands" zone allowing uses authorized by the Act, and applying the new zone to land which meets the tests. There is nothing in SB 237, however, that requires this single implementation technique. The only express requirement is that plan and ordinance provisions designed to implement

"marginal lands" be acknowledged by LCDC before they become "effective" (applicable to the issuance of permits, land divisions, etc.).

Another technique is under way in Washington County. The County will adopt plan policies and a new "marginal lands" zone. One plan policy will designate which lands are potentially eligible for "marginal lands" zoning (some 40,000 acres currently designated Agriculture-Forestry-20). The County will submit the policies and ordinance to LCDC for acknowledgment. But the actual change of zone from AF-20 to "marginal lands" will come later, on a case-by-case basis, as owners of eligible land make applications and prove their land is "marginal." In this way, Washington County will be able to use "marginal land," resolve a long-standing "exception" controversy, and still not interfere with its acknowledgment schedule.

B. Lots-of-Record

As mentioned above, SB 237 makes virtually all existing lots and parcels that fall within "marginal lands" eligible for residences. SB 237 also relaxes some of the limitations in the 1981 Lots-of-Record Law and establishes new opportunities for building on small lots and parcels in EFU, forest and other rural areas.

1. Changes to Existing Lots-of-Record Law: Sections 14 and 15

SB 237 makes a number of changes to the 1981 Lots-of-Record Law. First, as recommendated by of the Governor's Task Force on Land Use, SB 237 makes lots created by or transferred to the present owner after January 1, 1948, eligible for lot-of-record status. Before amendment, lots created by, or transferred before, January 1, 1965, were not eligible.

Second, under the 1981 law, lots were considered "contiguous" unless separated by a four-lane highway. Contiguous lots owned by the same person or a relative were ineligible for lot-of-record status. Under the new law, lots are now not considered contiguous if they are separated by any public road.

Third, under the 1981 law, contiguous lots otherwise qualifying but owned by the same person, or a spouse, parent, child, brother or sister of the person, were entitled to only one building permit. SB 237 removed the term "relative" so that contiguous lots owned by a parent, child, brother or sister are eligible for a building permit.

These changes will make more existing lots buildable under the Lots-of-Record Law. However, some other new provisions in the EFU statute regarding existing small lots amended the 1981 Lot-of-Record Law so it no longer applies to lots or parcels in an EFU zone (Section 15).

2. Small Lots in EFU Zones: Section 6

SB 237 amends the EFU statute to exempt small lots from most existing EFU review criteria. The owner of any existing lot or parcel in an EFU zone created between January 1, 1948, and July 1, 1983, that is three acres or smaller in size may obtain a permit for a dwelling unless the dwelling will interfere with nearby farm operations. To obtain a permit, the landowner applies, and the County notifies owners of property within 250 feet of the parcel. If no objection is received, the County is under no obligation to hold a hearing. If an objection is received, a hearing must be set. The only issue at the hearing is whether the dwelling will "force a significant change in or significantly increase the cost of farming practices on nearby lands..." (Section 6, new ORS 215.213 (4)).

It should be noted that these lots remain subject to one of the limitations in the 1981 Lots-of-Record Law: contiguous lots owned by the same person or a spouse are eligible for only one residence.

The lot-of-record provisions are optinal and need not be adopted. However, if a County choses to use them, the County must also implement the new EFU provisions of this Act.

C. New EFU Provisions

SB 237 made major changes to the EFU statutes (ORS 215.213), principally to the review criteria for farm and nonfarm dwellings. Those revised statutes will apply to all counties that choose to take advantage of the optional marginal-land or expanded lot-of-record provisions offered by SB 237. Counties that do not choose to utilize the options offered by SB 237 will remain subject to the EFU statutes that existed prior to the adoption of SB 237. Those older EFU statutes, once familiar to many as ORS 215.213, now have been recodified as ORS 215.283 (Section 17). In other words, the newer, more stringent EFU statutes that apply to counties that embrace SB 237 are found in ORS 215.213; the older EFU statutes, which still apply to counties that do not embrace SB 237 are found in Section 17 (see Section 16).

The amendments in SB 237 to ORS 215.213(1), (2) and (3) are optional (see Section 16). Amendments to ORS 215.263 and 215.253 and several new sections are not optional. The amendments will be described briefly in the order in which they appear in SB 237. All are from Section 6 of that bill.

1. School Buildings

The new statute expressly authorizes "buildings essential to the operation of a school," such as gymnasiums and dormitories.

2. Farm Dwellings Where Minimum Lot Size Acknowledged

Under the new statute, if a dwelling is proposed on a parcel that is managed as part of a farm operation not smaller than a minimum lot size acknowledged by LCDC, the dwelling may be permitted outright.

3. Temporary Hardship Dwellings

The current EFU statute does not authorize temporary hardship dwellings unless they can be approved as farm dwellings or nonfarm dwellings. SB 237 adds a new provision that permits a mobile home in conjunction with a dwelling on a temporary basis for the term of a hardship exempt from other EFU criteria.

4. Forest Dwellings

The current EFU statute does not authorize "woodlot" dwellings. The new EFU standards do provide for dwellings "in conjunction with the propagation or harvesting of a forest product" if the standards in the statute are met. There are two ways for a lot or parcel to qualify for a "woodlot" dwelling. First, if the lot or parcel is part of a forest operation that is larger than 20 acres and also is as large as the average woodlot in the County producing at least $2,500 annually in gross income, the tract qualifies. If a lot or parcel is smaller than the first standard requires, it can still qualify if it is capable of producing at least $10,000 annually averaged over the growing cycle.

For example, the 1978 Census of Agriculture shows that the average size of woodlands in Yamhill County with at least $2,500 in sales is 55 acres. A Yamhill County landowner with 55 acres or more would be entitled to a "woodlot" dwelling permit. If the landowner had only 32 acres, he would qualify for a "woodlot" dwelling only after showing the 32-acre woodlot was capable of producing at least $10,000 in annual sales averaged over the growing cycle.

5. Farm Dwelling Where No Acknowledged Minimum Lot Size

For counties with no acknowledged lot sizes in their EFU zones, SB 237 establishes two standards for farm dwellings on existing parcels, similar to the standards for "woodlot" dwellings (Section 6).

First, if the parcel is managed as part of a farm larger than 20 acres in size and as large as the average farm of that type in the county producing at least $2,500 in sales, the parcel qualifies. Second, if a parcel is smaller than the first standard requires, it can still qualify if the owner or operator can show that the parcel produced at least $10,000 in sales in two consecutive years of the three years preceding the dwelling application or the parcel is planted in perennials (for example, grapes or fruit trees) capable of producing an overage of at least $10,000 annually upon harvest.

The legislative history behind SB 237 makes clear that the Legislature did not want counties to have to collect the data needed to implement these standards themselves. The Legislature intended to allow counties to rely on existing information from the Oregon State University Extension Service but to remain free to develop their own data if they chose.

Oregon State University has obtained from the U.S. Bureau of the Census more detailed information about farm income and size, by county, than is otherwise available to counties from the Bureau in the 1978 Census. The new information, available to counties from OSU, gives the average size of eleven types of farms and ranches, by County, producing at least $2,500. The data show the average furit or nut orchard in Yamhill County is 69 acres. In Washington County, the average is 76 acres. In Josephine County, the average "intensive animal" operation is 58 acres; the average "horticultural specialities" operation is 15 acres. In Jackson County, the average "vegetable or melon" farm is 38 acres.

For example, an applicant in Yamhill County with a 70-acre farm whose principal crop is filberts would be entitled to a farm dwelling. An applicant whose principal crop is filberts but who has only 22 acres could not qualify under the first standard. The applicant has two chances to qualify under the second test. If he or she has produced $10,000 in sales of filberts in two consecutive years of the past three on that parcel it qualifies for a dwelling. Or, if he or she is just getting started with filberts and has planted trees that will produce an average of at least $10,000 in sales annually at harvest, the parcel qualifies. In Benton County, using average yield and price data, it would take 13.5 acres of filberts to produce $10,000 in annual sales. Information about average county yields per acre and average prices are available county-by-county from the OSU Extension Service.

6. Limits on New Nonfarm Dwellings

SB 237 continues the current statute's authorization for nonfarm dwellings on Class IV, V, VI, VII and VIII soils but prohibits new nonfarm dwellings on Class I, II and III soils except on lots or parcels three acres and smaller, described in number eight below.

7. New Criteria for Nonfarm Dwellings

SB 237 revises the criteria for nonfarm dwellings in EFU zones found at ORS 215.213(3). Formerly that statute listed five criteria outlined here, and authorized counties to add their own independent "conditions": (1) compatibility with farm use; (2) consistency with ORS 215.243; (3) interference with farm practices; (4) stability of area's land use pattern; and (5) generally unsuitable soil. The new statute condenses these five criteria into two: a new interference test and a slightly modified unsuitability test. It should be noted, however, that the five older criteria still apply to counties

that do not choose to take the SB 237 options. Those criteria have been recodified to appear in ORS 215.283.

The unsuitability test has new language intended to put the court holding in Rutherford v. Armstrong (Yamhill County), 31 Or App 1319 (1977), into the statute. It says: "A lot or parcel shall not be considered unsuitable solely because of its size or location if it can reasonably be put to farm use in conjunction with other land." For example, a nine-acre tract of Class II soil may be too small to produce farm crops or livestock by itself. But it is not "generally unsuitable" solely because of its small size if it can reasonably be farmed by the operator of an adjoining field.

The new intereference test focuses upon cost of accepted farm practices:

> "The dwelling or activites associated with the dwelling will not force a significant change in or significantly increase the cost of accepted farming practices on nearby lands devoted to farm use.

For example, if the siting of a nonfarm dwelling would force a farmer to abandon a practice such as aerial spraying, or force an expensive new practice, either of which the County finds to be "significant," the dwelling could not be approved. The statute does not define "significant" so counties will have to determine its meaning as they apply it in particular cases.

8. Nonfarm Dwellings on Small Lots

As mentioned in the Lot-of-Record section earlier, SB 237 allows a "lot-of-record" dwelling on any lot or parcel three acres or less created between January 1, 1948, and July 1, 1983, regardless of soil quality, so long as a dwelling on the parcel meets the new interference test described above and complies with local ordinances pertaining to other matters (e.g., flooding, geological hazards). A parcel is disqualified if it is part of a contiguous ownership (same person or spouse) larger than three acres.

9. Farm Divisions

SB 237 amends ORS 215.263 to allow divisions of land creating parcels for farm use if the proposed parcel is either larger than the minimum lot size acknowledged by LCDC or is shown to be "appropriate for the continuation of the existing commercial agricultural enterprise within the area." This is the existing criterion from Goal 3.

10. Divisions for Nonfarm Dwellings

Although most counties authorize creation of new parcels for nonfarm dwellings, the old law did not expressly provide for it. SB 237 expressly authorizes nonfarm dwelling parcels if the criteria for nonfarm dwellings (at ORS 215.213(3)) are met (ORS 215.263(4), Section 7).

D. Other Changes

1. Farm-Practices Awareness Statements

SB 237 (Section 11) authorizes counties to require as a condition of approval of a dwelling in an EFU zone the signing of a statement declaring the applicant will not complain about accepted farming or forest practices in the area.

2. Protection of Farm Practices on Marginal Lands

SB 237 (Section 12) extends to accepted farming practices on "marginal lands" the same protection against unreasonable restrictions as current law provides for EFU zones under ORS 215.253.

3. Minor Partitions

Oregon's subdivision law did not previously require counties to review and approve or disapprove minor partitions (divisions creating two or three lots with no new road). SB 237 (Section 9) amends the state subdivision law to require counties to regulate minor partitions in EFU zones.

4. Reporting EFU Decisions

SB 237 (Section 13) continues the requirement imposed by the 1981 Legislature that the Joint Legislative Committee review land divisions and dwelling permits approved by counties in EFU zones. Unlike the 1981 law, however, SB 237 directs counties to send EFU decisions to LCDC rather than the Committee. LCDC then must review the decisions and make recommendations to the Joint Committee on any proposed changes to EFU criteria.

This new section also requires counties to report on the amount of land designated as "marginal" the number of dwellings and land divisions approved on such land and the approval of any dwellings on lots-of-record.

EH:ad
5600B/5C

PRELIMINARY DRAFT
SUBJECT TO REVISION

12-12

Oregon

DEPARTMENT OF LAND CONSERVATION AND DEVELOPMENT

March 22, 1993

Al Cooper
Lane County Planning Department
125 E. 8th Street
Eugene, Oregon 97401

Dear Mr. Cooper:

We have reviewed the request of Arvil and Wilma Jackson to change the plan and zone designations on their 13.13 acre parcel from Agriculture/E-30 to Marginal Land/ML (Lane County File No. PA 1609-92). Based on a review of the application, staff report and our understanding of the statutory requirements for the designation of marginal lands under ORS 197.247, we recommend that the review of this application be suspended and reevaluated. According to the attached statement of legislative intent and our understanding of ORS 197.247(1)(b)(A), this application, as proposed, should not be approved.

The key issue regarding this application is over the intent, interpretation and application of ORS 197.247(1)(b)(A). This provision states:

> "(b) The proposed marginal land also meets at least one of the following:
>
> (A) At least 50 percent of **the proposed marginal land plus the lots or parcels at least partially located within one-quarter mile of the perimeter of the proposed marginal land** consists of lots or parcels 20 acres or less in size on July 1, 1983;" (emphasis added)

The County's staff report finds that the request satisfies this test based on a different interpretation than suggested by the applicant. Your interpretation **correctly** determines that this test is not a parcel counting test but rather is an area test. Thus, if 50% of the area is contained within parcels that are 20 acres or smaller, the test is satisfied. This interpretation is supported by the plain meaning of the statute. The test refers to 50% of the "proposed

12.13

Barbara Roberts
Governor

1175 Court Street NE
Salem, OR 97310-0590
(503) 373-0050
FAX (503) 362-6705

marginal land" not 50% of the lots or parcels. The applicant believes they satisfy this test because 65% of the parcels (15 of the 23) within one-quarter mile of their parcel are 20 acres or smaller. The applicant's interpretation is clearly inconsistent with the statute.

However, we do not believe that the County is using the correct **area** when applying this test. Although this statute is not a model of clarity as noted in your staff report, the Department believes that the correct area that must be contained within the parcels 20 acres or less must include the entire acreage of the parcels that are only partially located within the one-quarter mile area. Thus, the boundary of the area to be used is not a strict 1/4 mile radius but rather should follow the property lines of the parcels that extend beyond the 1/4 mile radius.

This interpretation is consistent with an explanation of the Marginal Lands Act that was prepared immediately after its passage based on testimony presented to the Legislature (See enclosure). This explanation (p. 3) explains how this test should be applied:

> "The first test is for clusters of ownerships primarily 20 acres and smaller. To apply the test, a County would choose a lot or parcel in the middle of a cluster of small tracts. The County would then draw a line around the center lot or parcel one-quarter mile from the boundaries of the lot or parcel. **If the line passes through a nearby lot or parcel, then that lot or parcel is included in the 'small ownerships' area.** Once the line is drawn, the County checks to see whether 50 percent of the area included within the line was in lots or parcels 20 acres or less in size on July 1, 1983. For example, if the area within the line is 260 acres, it would meet the test if all the lots or parcels 20 acres or smaller added up to at least 130 acres."

We recommend that Lane County reanalyze this application based on the Department's interpretation of ORS 197.247(1)(b)(A) explained in this letter.

If you have any questions about this matter, please call Ronald Eber at 373-0090.

Sincerely,

Michael J. Rupp,
Plan Review Manager

enclosure

cc: Greg Wolf, Assistant Director
Bob Rindy, Field Representative
Ronald Eber, Plan Analyst

12-14

EXHIBIT 13

----- Original Message -----
[redacted]
To: Jim Just
Sent: Thursday, May 25, 2006 3:51 PM
Subject: RE: tree species acceptable for reforestation

Yes, it is an acceptable species.

From: Jim Just [mailto:jjust@centurytel.net]
Sent: Thursday, May 25, 2006 1:31 PM
To: Kevin Birch
Subject: tree species acceptable for reforestation

Kevin,

OAR 629-610-0050(1) governs tree species acceptable for reforestation, requiring that a species be ecologically suited to the site, capable of producing logs, fiber, or other wood products suitable in size and quality for the production of lumber, sheeting, pulp or other commercial forest products, and marketable in the foreseeable future.

Question: does ODF consider Valley Ponderosa Pine to be a tree species acceptable for reforestation in the Willamette Valley, and specifically in Lane County?

Jim Just, Executive Director
Goal One Coalition
39625 Almen Drive
Lebanon, OR 97355
phone: 541.258.6074
fax: 541.258.6810
www.goal1.org

Goal One *is* Citizen Involvement

EXHIBIT 14

Lane County
Soil Ratings for Forestry and Agriculture

Lane County
Land Management Division

August 1997

Prepared by
Lane Council of Governments

Lane County Soil Ratings for Forestry and Agriculture

Map Symbol	Lane County Soil Map Unit	Douglas Fir Site Index	Cu. Ft./ Acre/ Year	Agricultural Capability Class	High Value Farmland
22	Camas gravelly sandy loam, occasionally flooded	none		4	
23	Camas-Urban land complex	none		4	
24	Chapman loam	none		1	X
25	Chapman-Urban land complex	none		1	X
26	Chehalis silty clay loam, occasionally flooded	none		2	X
27	Chehalis-Urban land complex	none		2	X
28C	Chehulpum silt loam, 3 - 12% slopes	none		6 *	
28E	Chehulpum silt loam, 12 - 40% slopes	none		6	
29	Cloquato silt loam	none		2	X
30	Cloquato-Urban land complex	none		2	X
31	Coburg silty clay loam	none		2	X
32	Coburg-Urban land complex	none		2	X
33	Conser silty clay loam	none		3	X
34	Courtney gravelly silty clay loam	none		4	X
35D	Cruiser gravelly clay loam, 3 - 25% slopes	140**	145	6	
35F	Cruiser gravelly clay loam, 25 - 50% slopes	140**	145	6	
35G	Cruiser gravelly clay loam, 35 - 70% slopes	140**	145	7	
36D	Cumley silty clay loam, 2 - 20% slopes	114	162	6	
37C	Cupola cobbly loam, 3 - 12% slopes	100	136	6	
37E	Cupola cobbly loam, 12 - 30% slopes	100	136	6	
38	Dayton silt loam, clay substratum	none		4	X
39E	Digger gravelly loam, 10 - 30% slopes	102	140	6	
39F	Digger gravelly loam, 30 - 50% slopes	102	140	6	
40H	Digger-Rock outcrop complex, 50 - 85% slopes	***	114	7	
41C	Dixonville silty clay loam, 3 - 12% slopes	109	152	3	
41E	Dixonville silty clay loam, 12 - 30% slopes	109	152	4	
41F	Dixonville silty clay loam, 30 - 50% slopes	109	152	6	
42E	Dixonville-Hazelair-Urban land complex, 12 - 35% slopes	***	89	4	
43C	Dixonville-Philomath-Hazelair complex, 3 - 12% slopes	***	54	3	
43E	Dixonville-Philomath-Hazelair complex, 12 - 35% slopes	***	63	4	
44	Dune land	none		8	
05C	Dupee silt loam, 3 - 20% slopes	none		3	
46	Eilertsen silt loam	133	199	2	X
47E	Fendall silt loam, 3 - 30% slopes	125	184	6	
48	Fluvents, nearly level	none		–	
49E	Formader loam, 3 - 30% slopes	121	176	6	
49G	Formader loam, 30 - 60% slopes	121	176	6	
50G	Formader-Hembre-Klickitat complex, 50 - 80% slopes	***	176	7	

SOURCE AND DESCRIPTION OF THE DATA

Map Symbol

Data Source

USDA-Soil Conservation Service, September 1987. *Soil Survey of Lane County Area, Oregon.*

Soil Map Unit

Data Source

USDA-Soil Conservation Service, September 1987. *Soil Survey of Lane County Area, Oregon.*

Site Index

Data Source

USDA-Natural Resources Conservation Service, August 1997 printout from the National Soils Information System (NASIS). *Soils Database for Lane County, Woodland Management and Productivity* table.

Description

These site indices indicate the average height, in feet, that dominant and codominant Douglas fir trees attain in 50 years. The site index applies to fully stocked, even-aged, unmanaged stands. This table lists only site indices for Douglas fir and does not list site indices for soil complexes. The Description under Cubic Feet/Acre/Year explains the composite volume rating in this table for soil complexes.

Cubic feet/acre/year

Data Source

USDA-Soil Conservation Service, June 1986. *Technical Note No. 2 Revised, Culmination of Mean Annual Increment for Commercial Forest Trees of Oregon.*

Description

Converting site index to cubic feet/acre/year expresses productivity as a volume of wood fiber produced. For map units that are predominantly one soil type, it is straightforward to use the tables in Technical Note No. 2 to look up the cubic feet/acre/year that a soil could potentially produce based on the site index in the State Soils Database. Calculating a volume rating for a complex is more problematic. The NRCS reports site index data for each component of a soil complex but does not calculate a composite volume for the entire complex. A complex is a soil map unit which has two or more kinds of soil in such an intricate pattern or so small in area that the soils cannot be delineated separately at the scale of mapping.

The methodology used in this table to calculate forest productivity volume ratings for soil complexes involves applying a weighted average to each component of the complex and then normalizing to base it on 100% excluding the inclusions. The following example illustrates this calculation for a soil complex which has a site index for only one of the two components.

43 C	*Dixonville-Philomath-Hazelair complex 3-12%*				
Component	*Actual %*	*Normalized %**	*Site Index*	*CuFt/ Ac/Yr*	*Normalized % x Cu.F.t/Ac./Year*
Dixonville	30%	35%	97	130	46
Philomath	30%	35%	-	-	-
Hazelair	25%	29%			
Total	85%	100%			46

* $$\text{Normalized \%} = \frac{\%\ of\ Individual\ Component}{100 - (\%\ Inclusions + \%\ Urban\ Land)}$$

Agricultural Capability Class

Data Source

USDA-Natural Resources Conservation Service, August 1997 printout from the National Soils Information System (NASIS). *Soils Database for Lane County, Land Capability and Yields Per Acre of Crops and Pasture* table.

Description

Land capability class, often called agricultural capability class, generally shows the suitability of soils for most kinds of field crops. The Soil Survey describes capability class: "The soils are grouped according to their limitations for field crops, the risk of damage if they are used for field crops, and the way they respond to management." There are eight capability classes, I through VIII (sometimes written as 1 through 8), indicating progressively greater limitations for use as cropland. The land capability classification is discussed in USDA Agriculture Handbook No. 210, issued September 1961 and reprinted January 1973.

The NRCS reports both irrigated and non-irrigated capability classes. In Lane County, because of adequate rainfall, the ratings are the same for irrigated and non-irrigated except for all but two map units (28C, Chehulpum silt loam, 3-12%, and 125D, Steiwer loam, 3-12%). This table lists the non-irrigated capability class. For soil complexes, this table lists only the capability class of the most predominant soil in the complex (which is the first soil in the name of the map unit).

EXHIBIT 15

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September 8, 2004

Lane County Board of Commissioners

RE: Lane County File #PA 02-5838, Ogle; Response to Goal One Coalition Letters dated August 6 and 19, 2004

Members of the Board of Commissioners:

In conjunction with my testimony, which I presented on Wednesday afternoon, July 14, 2004, and my letter dated July 26, 2004, I have enclosed the following written reponse to the August 6 and 19 Goal One letters written by Jim Just. I have addressed each issue as presented in the letters, most of which I also addressed with my testimony. I am answering these questions as a qualified, Society of American Foresters Certified Professional Forester (#2953), with 27 years of experience including 17 years as a consultant, with Bachelor of Science (Cal Poly, SLO) and Master of Forestry (Oregon State) Degrees.

Responses to questions raised in August 6, 2004, letter from Goal One.

Page 2: Mr. Just states that I have reclassified a substantial portion of the NRCS-identified 107 and 108 Philomath units. From an on site analysis I am stating that these areas of extremely thin soils over rock, with exposed rock showing in many places, are incapable of supporting tree growth. Trees are not growing there now; trees were not growing there 55 years ago (see Photo Exhibits 1-1 and 2). I am not retyping the soils, I am making an **on site observation** that trees will not grow here; the primary reason being that the soil depth is limited, or nonexistent due to rock. There is not enough soil for tree roots to establish themselves.

Page 3: Mr. Just cites Land Use Planning Notes Number 3, April 1998, as the methodology for determining site productivity. Number 1 is that plots must be taken to measure productivity of a soil type. This is true. This is how the NRCS and ODF have arrived at the productivity figures which are published in their tables. These are the productivity figures I am using, I am not trying to create new productivity tables. I am simply taking site trees as described in step number 2, so that I can then use the productivity tables. I **have not** deviated from the methodology as described in these notes.

Page 4: Mr. Just states that I do not provide any productivity data for the "grassland with exposed rock". From an on site analysis and aerial photos from 1952 and 2000, it can be seen that trees have not grown in these areas for the last 55 years (see Exhibits 1 and 2). Since the 1952 photos show no trees it can logically be assumed that trees did not grow for a time period prior to this. The same conditions exist today that existed 55 years ago; very thin soils on top of rock, with not enough soil for a tree to establish a root system. For

Page 4: Mr. Just states I do not give a date for my site analysis; I visited the property on July 26, 2004. At this time I bored ten site trees (shown on page 3). I have visited the site previously; this is the date I bored site trees. From a forestry standpoint this is the accepted standard for industry and the U.S. Forest Service as well. This is also the standard as cited by Mr. Just (see page 4 of his August 6th letter).

Page 4: Mr. Just states I did not submit a soils report; I will repeat again that I am not determining a soil type, I am making a site specific observation that no trees are growing in these areas. I have included aerial photos delineating the areas under discussion (see Exhibits 1 and 2). The approximate scale for these photos has also been included on the photos. I bored the site trees in the areas underlaid by the Philomath soils (107C and 108F). I bored ponderosa pine in these areas (soil types 107C and 108F) because Mr. Just has accepted the Douglas-fir growth figures from Lane County Soil tables for the other soils; the McDuff clay loam (81D), the Panther silty clay loam (102C) and the Ritner cobbly silty clay loam (113E & G). These soils have a high growth rate for Douglas-fir; in fact Douglas-fir growth will exceed ponderosa pine growth on the better soils. At no time has Mr. Just disagreed with my original Douglas-fir growth figures for these soils. At no time has he presented any ponderosa pine growth figures for these soils. Therefore I did not bore ponderosa pine trees on these soil types.

Page 4: Mr. Just states that I have not noted any limitations encountered on the site. I will repeat again, from an on site analysis it can be seen that there is exposed rock throughout the property. This would indicate a very thin soil layer. The absence of trees (see aerial photos) would also indicate thin soils; trees need enough soil for roots to establish themselves. These statements are made from a visual observation, combined with years of experience trying to establish trees in this type of ground. Trees will not grow from rock or in very shallow soils. I cannot make statements concerning an overview of the geology, bedrock, etc. because I am not a soil scientist. I did not describe on-site and adjacent hydrology, including surface and subsurface features, intermittent versus perennial, flood plain and floodways and other related information because a water expert has already done so. The remaining points brought up by Mr. Just, such as describing landforms and topography, confirming the relationship of landforms to soil mapping units, describing revised soil mapping units with their range of characteristics and explaining how and why they differ from NRCS mapping, are confusing. I am not sure what any of this has to do with my on site observation that trees have not, are not and will not grow on the rocky, thin soiled areas. Mr. Just also infers (although this is very confusing) that I have not descibed the site or the natural vegetation present. In my original productivity analysis submitted in December, 2003, I describe the aspect, slopes and vegetation on the parcel. Apparently Mr. Just did not read my original analysis.

Page 4: Following these statements Mr. Just then says that the Philomath soils (107C and 108F) were "typed". He then states that this report (I am not sure which report he is referring to) has not been reviewed by ODF to confirm ODF-approved methodology was followed. I do not understand the point in these statements; I simply used the soil types as delineated by Lane County to determine where these soils exist on the subject parcel.

Mr. Just then states that it is not explained how adequately stocked plots were identified and delineated. I have no idea what he means by this statement; adequately stocked plots of what? I bored site trees to determine the site index, then used growth figures from tables; I did not cruise the property to determine volumes or stocking levels. If I had it

Last paragraph page 4: The next statement "It has not been that a sufficient number of appropriate dominant or co-dominant site trees selected and sampled for each plot" is indecipherable. I cannot figure out what he is trying to say here. In my July 26th letter (see page 2) I state that I bored trees to determine the site index, however, I did not include the data collected. I am providing the data now (see below). Mr. Just then states that "No data on plot and tariff trees is included in the record". Plots are taken for information on tree species, volume, log grades, etc.; tariff trees are one method of taking sample trees for a cruise. Site trees to determine site index are just that, they are not "plots" or "tariff trees". Site trees are simply individual trees taken within a stand to determine site index; they **do not** have to be taken in plots and tariff trees have **nothing** to do with site index, they are sampled trees which are used to determine **volume** per acre. You **do not** have to take plots or tariff trees to accurately determine site index.

Site index is a function of two factors, climate and soil (see Exhibit 3). Site index (or site quality) is changed only by modifying the soil or climatic factors. Climatic conditions can vary substantially from site to site, this occurs naturally. The soil tables created for growth are extrapolated from huge sample data bases and then averaged for that particular soil. In other words; soil productivity figures for a particular soil are averages for that soil type over a wide range of conditions. These conditions vary from site to site depending on aspect, slope, rainfall, temperature, etc. These are the climatic factors mentioned above. If you take the **same soil** and place it on a north aspect you will get better growth than if the soil is on a south aspect. The **same soil** will produce higher growth in an area of higher rainfall than another area. In short, different conditions on the site produce different growth rates from the same soil. These differences show up in tree growth which can be measured by boring trees to obtain a site index. In other words the growth of the trees is a reflection of the site index; i.e., the **same soil** can have many **different** site index numbers. This is the reason a **site specific** analysis is conducted.

Site Trees Bored on the Site:

Breast Height Age	Total Age*	Total Height	Site Index**
47	54	67'	100
48	55	77'	110
47	54	53'	80
52	59	81'	106
53	60	81'	110
47	54	60'	90
52	59	79'	110
46	53	68'	100
50	57	77'	105
48	55	73'	105
			1,016

Throwing out the lowest site index of 80 leaves 936 ÷ 9 = Site Index 104

*Total age includes adding 7 years, which errs on the optimistic side (see Exhibit 3). You must add between 5 and 10 years to a breast height age; 5 years being Site I ground, 10 years being Site IV ground. The Ogle parcel **is not** Site I ground.
**Interpolated using Meyer's eastern Oregon tables (see Exhibit 3).

From my on site analysis and photo delineation of the soil types (using a light table and overlaying the **Lane County soil maps** on the aerial photos, see Exhibit 1) in question, I have created the following tables. These soil maps are in the record already. To arrive at the acreages shown I used the acres presented by Lane County and took proportions of these acres by dividing the amount of grassland shown on the photo with the acreages presented by the county. Since the counties acreages are the **accepted acreages** this is a more accurate calculation of acres than using the approximate scale shown on the photo.

15 .3

I used a figure of 110 cf/ac/yr. for the ponderosa pine growth for this site index of 104(see Exhibit 4). If I use the ponderosa pine table presented by Mr. Just (see Exhibit 5), and follow the included directions on how to obtain a growth figure (also Exhibit 5-1) I arrive at a figure of 108 cf/ac/yr for this site class. This figure was obtained using interpolation (see Exhibit 5-3). I will use the higher figure to error on the optimistic side. Using the tables presented by Mr. Just will result in lower figures, therefore I have used the eastern Oregon tables. Mr. Just presents higher figures (141 cf/ac/yr) using a site index of 120. However, he does not show where he obtained a site index of 120.

Note on using eastern Oregon productivity figures: On Page 5 Mr. Just states that I am wrong in using eastern Oregon site index tables because I should be using northern California and southwest Oregon site index tables, which **do not exist according to his own Exhibits** (see Exhibit 5-1). Mr. Just then states that I should be using data compiled from **two very limited** research papers from northern California. I am not sure how limited data from a different state, further away from the Willamette Valley than eastern Oregon, is more appropriate for use than the eastern Oregon tables. I then explain how I come up with my productivity figures; from trees bored on the site, I obtained a site index number using the eastern Oregon site index created by Meyer. I have also explained (see above) that using the tables presented by Mr. Just result in lower productivity numbers.

The DF productivity figures are from both my original tables and Mr. Just's tables.

In Tax Lot 303 there are 8.766 acres within the 107C soil type and 4.715 acres within the 108F soil type which are thin soils over rock; in Tax Lot 304 there are 2.575 acres within the 107C soil type and 1.897 acres within the 108F soil type which are thin soils over rock. These areas have not grown trees for as long as aerial records have been kept (see Exhibits 1 and 2). I have shown these acres on the bottom of each table. I have used 45 cu.ft./ac./yr. for the Panther 102C soil since this is the number shown on the SCS tables (see Exhibit 6).

Note on the Panther 102C soil: On page 5 (Goal One August 6, 2004 letter) Mr. Just states that I am wrong in using 45 cf/ac/yr for the Panther soil unit. I obtained this figure from the most recent table available with a figure. The 1997 Lane County Soil Ratings Table has a rating of none for this soil. Therefore I went back in time to the **most recent** table with a rating. This is the February , 1990 Foresters Memo published by ODF and included with my original analysis. This is the memo that Mr. Just stated unequivocally **did not exist.** He then found an **older** Foresters Memo which has a 50 cf/ac/yr rating. Both of these tables begin by stating that **if a rating has changed, the new number supersedes the old number.** Therefore, I have used 45 cf/ac/yr for the Panther soil.

PRODUCTIVITY TABLES FOR TAX LOTS 303 &304

Tax Lot 303	Acres	Growth/Year	Total
Growth			
81D McDuff clay loam	5.600	158 Cu.Ft./Ac.	884.80 Cu.Ft.
102C Panther silty clay loam	1.747	45 Cu.Ft./Ac.	78.615 Cu.Ft.
107C Philomath silty clay*	9.510	110 Cu.Ft./Ac.	1,046.10 Cu.Ft.
108F Philomath cobbly silty clay*	2.327	110 Cu.Ft./Ac.	255.97 Cu.Ft.
113G Ritner cobbly silty clay loam	6.914	149 Cu.Ft./Ac.	1,030.186 Cu.Ft.
Grassland with exposed rock	13.481	0 Cu.Ft./Ac.	0 Cu.Ft.
Totals	39.579		3,295.671 Cu.Ft.

Average Growth Potential -- 39.579 Acres ÷ 3,295.671 Cu.Ft. = 83.268 Cu.Ft./Ac./Yr.

15-4

Tax Lot 304 Growth	Acres	Growth/Year	Total
102C Panther silty clay loam	12.936	45 Cu.Ft./Ac.	582.120 Cu.Ft.
107C Philomath silty clay*	10.278	110 Cu.Ft./Ac.	1,130.580 Cu.Ft.
108F Philomath cobbly silty clay*	3.731	110 Cu.Ft./Ac.	410.410 Cu.Ft.
113G Ritner cobbly silty clay loam	2.741	149 Cu.Ft./Ac.	408.409 Cu.Ft.
Grassland with exposed rock	4.472	0 Cu.Ft./Ac.	0 Cu.Ft.
Totals	34.158		2,531.519 Cu.Ft.

Average Growth Potential -- 34.158 Acres + 2,531.519 Cu.Ft. = 74.112 Cu.Ft./Ac./Yr.

*These growth figures are for ponderosa pine for Site Index 104 (see Exhibit 4). All other growth figures are for Douglas-fir.

A portion of the acres delineated as grassland with exposed rock are underneath the two powerlines crossing the property (see Exhibit 1). These areas will never grow trees due to the power companies continually cutting them down to keep their corridors clear. On page 5 (Goal One Letter) Mr. Just states that just because you cannot grow trees under the powerlines (due to powerline regulations) does not mean I should not consider this ground. Michael Farthing will address this issue.

The productivity tables shown below deduct the remaining powerline acreage, which have no trees at the present time and will not have trees in the future.

Tax Lot 303 Growth	Acres	Growth/Year	Total
81D McDuff clay loam	5.600	158 Cu.Ft./Ac.	884.80 Cu.Ft.
102C Panther silty clay loam	0.287	45 Cu.Ft./Ac.	12.915 Cu.Ft.
107C Philomath silty clay*	7.915	110 Cu.Ft./Ac.	870.650 Cu.Ft.
108F Philomath cobbly silty clay*	2.327	110 Cu.Ft./Ac.	255.970 Cu.Ft.
113G Ritner cobbly silty clay loam	6.914	149 Cu.Ft./Ac.	1,030.186 Cu.Ft.
Powerline	3.055	0 Cu.Ft./Ac.	0 Cu.Ft.
Grassland with exposed rock	13.481	0 Cu.Ft./Ac.	0 Cu.Ft.
Totals	39.579		3,054.521 Cu.Ft.

Average Growth Potential -- 39.579 Acres + 3,054.521 Cu.Ft. = 77.175 Cu.Ft./Ac./Yr.

Tax Lot 304 Growth	Acres	Growth/Year	Total
102C Panther silty clay loam	12.326	45 Cu.Ft./Ac.	554.670 Cu.Ft.
107C Philomath silty clay*	9.329	110 Cu.Ft./Ac.	1,026.190 Cu.Ft.
108F Philomath cobbly silty clay*	2.782	110 Cu.Ft./Ac.	306.020 Cu.Ft.
113G Ritner cobbly silty clay loam	2.741	149 Cu.Ft./Ac.	408.409 Cu.Ft.
Powerline	2.508	0 Cu.Ft./Ac.	0 Cu.Ft.
Grassland with exposed rock	4.472	0 Cu.Ft./Ac.	0 Cu.Ft.
Totals	34.158		2,295.289 Cu.Ft.

Average Growth Potential -- 34.158 Acres + 2,295.289 Cu.Ft. = 67.196 Cu.Ft./Ac./Yr.

*These growth figures are for ponderosa pine for Site Index 104 (see Exhibit 4). All other growth figures are for Douglas-fir.

K5.5

EXHIBIT 16:

Detailed Soil Map Units

The map units delineated on the detailed maps at the back of this survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this section, along with the maps, can be used to determine the suitability and potential of a unit for specific uses. They also can be used to plan the management needed for those uses. More information on each map unit is given under "Use and Management of the Soils."

A map unit delineation on a map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils or miscellaneous areas. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils and miscellaneous areas are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some "included" areas that belong to other taxonomic classes.

Most included soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, inclusions. They may or may not be mentioned in the map unit description. Other included soils and miscellaneous areas, however, have properties and behavior divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, inclusions. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. The included areas of contrasting soils or miscellaneous areas are mentioned in the map unit descriptions. A few included areas may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of included areas in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into segments that have similar use and management requirements. The delineation of such landscape segments on the map provides sufficient information for the development of resource plans, but if intensive use of small areas is planned, onsite investigation to precisely define and locate the soils and miscellaneous areas is needed.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives the principal hazards and limitations to be considered in planning for specific uses.

Soils that have profiles that are almost alike make up a soil series. Except for differences in texture of the surface layer or of the underlying layers, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer or of the underlying layers. They also can differ in slope, stoniness, salinity, wetness, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into soil phases. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Bellpine silty clay loam, 3 to 12 percent slopes, is one of several phases in the Bellpine series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes.

A complex consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Dixonville-Philomath-Hazelair complex, 3 to 12 percent slopes, is an example.

Most map units include small scattered areas of soils or miscellaneous areas other than those for which the map unit is named. Some of these included areas have properties that differ substantially from those of the major soils or miscellaneous areas. Such differences

Taxonomic Classification of the Soils

Lane County Area, Oregon

Soil name	Family or higher taxonomic classification
Abiqua	Fine, mixed, mesic Cumulic Ultic Haploxerolls
Astoria	Medial, mesic Andic Haplumbrepts
Astoria variant	Medial, mesic Andic Haplumbrepts
Atring	Loamy-skeletal, mixed, mesic Dystric Xerochrepts
Awbrig	Fine, smectitic, mesic Vertic Albaqualfs
Bandon	Coarse-loamy, mixed, mesic, ortstein Typic Haplorthods
Bashaw	Very-fine, smectitic, mesic Typic Pelloxererts
Bellpine	Fine, mixed, active, mesic Xeric Haplohumults
Blachly	Fine, isotic, mesic Typic Dystrudepts
Blodgett	Loamy-skeletal, isotic, frigid, shallow Typic Dystrudepts
Bohannon	Fine-loamy, isotic, mesic Andic Dystrudepts
Braller	Dysic, isomesic Typic Tropohemists
Braller variant	Euic, isomesic Terric Tropohemists
Brenner*	Fine-silty, mixed, acid, isomesic Aeric Tropaquepts
Briedwell	Loamy-skeletal, mixed, mesic Ultic Haploxerolls
Bullards	Coarse-loamy, mixed, mesic Typic Haplorthods
Camas	Sandy-skeletal, mixed, mesic Fluventic Haploxerolls
Cateri	Medial-skeletal, ferrihydritic, frigid Alic Hapludands
Chapman	Fine-loamy, mixed, mesic Cumulic Ultic Haploxerolls
Chehalis	Fine-silty, mixed, mesic Cumulic Ultic Haploxerolls
Chehulpum	Loamy, mixed, mesic, shallow Ultic Haploxerolls
Chintimini	Loamy-skeletal, isotic, frigid Andic Dystrudepts
Cloquato	Coarse-silty, mixed, mesic Cumulic Ultic Haploxerolls
Coburg	Fine, mixed, superactive, mesic Oxyaquic Argixerolls
Conser	Fine, mixed, mesic Typic Argiaquolls
Courtney	Fine, smectitic, mesic Abruptic Argiaquolls
Cruiser	Medial Andic Cryochrepts
Cumley	Clayey, mixed, mesic Typic Haplohumults
Cupola	Medial-skeletal, mesic Entic Dystrandepts
Dayton	Fine, smectitic, mesic Typic Albaqualfs
Digger	Loamy-skeletal, isotic, mesic Dystric Eutrudepts
Dixonville	Fine, mixed, mesic Pachic Ultic Argixerolls
Dupee	Fine, mixed, superactive, mesic Aquultic Haploxeralfs
Eilertsen	Fine-silty, mixed, mesic Ultic Hapludalfs
Fendall	Fine, mixed, isomesic Andic Humitropepts
Ferrelo	Coarse-loamy, mixed, isomesic Typic Dystropepts
Fiverivers	Fine-loamy, isotic, frigid Andic Dystrudepts
Fluvaquents	Mesic Fluvaquents
Fluvents	Mesic Fluvents
Formader	Medial over loamy, mixed, mesic Alic Hapludands
Giveout	Medial, ferrihydritic, frigid Alic Hapludands
Grassmountain	Fine-loamy, isotic, frigid Andic Dystrudepts
Haflinger	Sandy-skeletal, mixed, mesic Entic Haplumbrepts
Harslow	Medial-skeletal, ferrihydritic, mesic Alic Hapludands
Hazelair	Very-fine, mixed, mesic Aquultic Haploxerolls
Heceta	Mixed, mesic Typic Psammaquents
Hembre	Fine-loamy, mixed, mesic Typic Haplumbrepts
Hemcross	Medial, ferrihydritic, mesic Alic Hapludands
Holcomb	Fine, smectitic, mesic Mollic Albaqualfs

Taxonomic Classification of the Soils

Lane County Area, Oregon

Soil name	Family or higher taxonomic classification
Holderman	Medial-skeletal Andic Cryochrepts
Honeygrove	Fine, mixed, active, mesic Typic Palehumults
Hullt	Fine-loamy, mixed, mesic Typic Xerumbrepts
Hummington	Medial-skeletal Dystric Cryandepts
Illahee	Loamy-skeletal, isotic, frigid Humic Dystrudepts
Jimbo	Medial, mesic Andic Haplumbrepts
Jory	Clayey, mixed, mesic Xeric Haplohumults
Jory	Fine, mixed, active, mesic Xeric Palehumults
Keel	Medial Dystric Cryandepts
Klichis	Loamy-skeletal, isotic, mesic Humic Lithic Dystrudepts
Klichis	Loamy-skeletal, mixed, mesic Lithic Haplumbrepts
Klowan	Fine, isotic, mesic Typic Dystrudepts
Kinney	Fine-loamy, mixed, mesic Andic Haplumbrepts
Klickitat	Loamy-skeletal, mixed, mesic Typic Haplumbrepts
Klistan	Medial-skeletal, ferrihydritic, mesic Alic Hapludands
Laderly	Medial-skeletal, ferrihydritic, frigid Alic Hapludands
Lempira	Medial, frigid Typic Hapludands
Linslaw	Fine, mixed, mesic Aquultic Haploxeralfs
Lint	Medial, isomesic Alic Fulvudands
MacDunn	Clayey-skeletal, mixed, superactive, mesic Typic Haploxerepts
Malabon	Fine, mixed, mesic Pachic Ultic Argixerolls
Malabon	Fine, mixed, superactive, mesic Pachic Ultic Argixerolls
Marcola	Clayey-skeletal, mixed, mesic Pachic Ultic Argixerolls
McAlpin	Fine, mixed, mesic Cumulic Ultic Haploxerolls
McAlpin	Fine, mixed, superactive, mesic Aquic Cumulic Haploxerolls
McBee	Fine-silty, mixed, mesic Cumulic Ultic Haploxerolls
McCully	Fine, mixed, mesic Typic Haplumbrepts
McDuff	Clayey, mixed, mesic Typic Haplohumults
Meda	Fine-loamy, mixed, mesic Typic Haplumbrepts
Mellowmoon	Fine-loamy, mixed, frigid Typic Haplumbrepts
Minniece	Fine, mixed, mesic Typic Umbraqualfs
Mulkey	Medial Dystric Cryandepts
Mulkey	Medial, ferrihydritic Pachic Fulvicryands
Murtip	Medial, ferrihydritic, frigid Alic Hapludands
Natroy	Very-fine, smectitic, mesic Aquic Chromoxererts
Nehalem*	Fine-silty, mixed, isomesic Fluventic Humitropepts
Nekia	Clayey, mixed, mesic Xeric Haplohumults
Nekia	Fine, mixed, active, mesic Xeric Haplohumults
Nekoma	Coarse-loamy, mixed, mesic Fluventic Haplumbrepts
Nekoma	Coarse-loamy, mixed, superactive, mesic Fluventic Humic Dystrudepts
Neskowin	Medial, isomesic Alic Fulvudands
Nestucca*	Fine-silty, mixed, acid, isomesic Aeric Tropaquepts
Netarts	Sandy, mixed, mesic Entic Haplorthods
Newberg	Coarse-loamy, mixed, mesic Fluventic Haploxerolls
Noti	Coarse-loamy over sandy or sandy-skeletal, mixed, acid, mesic Typic Humaquepts
Ochrepts	Frigid Ochrepts
Oxley	Loamy-skeletal, mixed, mesic Typic Argiaquolls
Panther	Very-fine, smectitic, mesic Typic Haplaquolls
Peavine	Clayey, mixed, mesic Typic Haplohumults

Taxonomic Classification of the Soils

Lane County Area, Oregon

Soil name	Family or higher taxonomic classification
Peavine	Fine, mixed, active, mesic Typic Haplohumults
Pengra	Fine-silty over clayey, mixed, mesic Typic Haplaquolls
Philomath	Clayey, smectitic, mesic, shallow Vertic Haploxerolls
Preacher	Fine-loamy, isotic, mesic Andic Dystrudepts
Preacher	Fine-loamy, mixed, mesic Typic Haplumbrepts
Price	Fine, mixed, superactive, mesic Typic Haploxerepts
Remote*	Loamy-skeletal, isotic, mesic Typic Eutrudepts
Ritner	Clayey-skeletal, mixed, mesic Dystric Xerochrepts
Ritner	Clayey-skeletal, mixed, superactive, mesic Typic Haploxerepts
Romanose	Medial-skeletal, ferrihydritic, frigid Lithic Hapludands
Salander	Medial, isomesic Alic Fulvudands
Salem	Fine-loamy over sandy or sandy-skeletal, mixed, mesic Pachic Ultic Argixerolls
Salkum	Clayey, kaolinitic, mesic Xeric Palehumults
Saturn	Fine-loamy over fragmental, mixed, mesic Fluventic Haplumbrepts
Scaredman	Loamy-skeletal, mixed, frigid Typic Haplumbrepts
Shivigny	Clayey-skeletal, mixed, active, mesic Typic Palehumults
Sifton	Medial over sandy or sandy-skeletal, mixed, mesic Andic Xerumbrepts
Slickrock	Fine-loamy, mixed, mesic Pachic Haplumbrepts
Slickrock	Medial over loamy, ferrihydritic over isotic, mesic Alic Hapludands
Stelwer	Fine-loamy, mixed, mesic Ultic Haploxerolls
Tahkenitch	Coarse-loamy, mixed, mesic Typic Haplumbrepts
Umbrepts	Frigid Umbrepts
Umpcoos	Loamy-skeletal, isotic, mesic Lithic Eutrudepts
Valsetz	Medial-skeletal, ferrihydritic Alic Haplocryands
Veneta	Fine, mixed, mesic Ultic Haploxeralfs
Veneta variant	Fine-silty, mixed, mesic Ultic Haploxeralfs
Waldo	Fine, mixed, mesic Fluvaquentic Haplaquolls
Waldport	Mixed, isomesic Typic Tropopsamments
Wapato	Fine-silty, mixed, mesic Fluvaquentic Haplaquolls
Willakenzie	Fine-loamy, mixed, active, mesic Ultic Haploxeralfs
Willakenzie	Fine-silty, mixed, mesic Ultic Haploxeralfs
Willanch	Coarse-loamy, mixed, nonacid, isomesic Aeric Tropaquepts
Winberry	Loamy-skeletal, mixed Lithic Cryochrepts
Witzel	Loamy-skeletal, mixed, active, mesic Lithic Ultic Haploxerolls
Witzel	Loamy-skeletal, mixed, mesic Lithic Ultic Haploxerolls
Woodburn	Fine-silty, mixed, mesic Aquultic Argixerolls
Yaquina	Sandy, mixed, isomesic Aquentic Haplorthods
Yellowstone	Medial over loamy, mixed, mesic Alic Hapludands
Yellowstone	Medial-skeletal, ferrihydritic Lithic Haplocryands

EXHIBIT 18

Hello Jim. Just getting back to this email and conferred a bit with Gary Lettman our economist.

CMAI is thought of as the most efficient time for harvest considering only tree growth (actually many other items must also be considered). The reason the tables are different is that McArdle tables were developed before King's tables, and were developed working with old growth stands that had little management (hence the curve was flatter and the CMAI lower). The King tables (1966 is the published copy I have) were developed a little later with an eye for management factored into the future and had a stand that was younger and better differentiated.

Hope this helps Jim.

Joe

From: Jim Just [mailto:jjust@centurytel.net]
Sent: Friday, September 15, 2006 12:28 PM
To: Joe F Misek
Cc: EBER Ron; David A Morman; Ted L Lorensen
Subject: CMAI age

Gentlemen,

Can anybody explain to me why CMAI age differs in the 100-year site index McArdle tables (generally, 60 years of age) and the 50-year site index King tables (90 years of age)?

This issue arises in the context of "marginal lands" in Lane County. One of the marginal lands test is an "income" test. Lane County policy is to assume the use of a 50-year growth cycle, on the theory that the 50-year site index means that assuming a 50-year growth cycle is appropriate. We're arguing that the growth cycle should rather be CMAI for bf/ac/yr, as bf/ac/yr is the unit of measurement used for log prices and allows for income to be calculated.

Any help will be greatly appreciated.

Jim Just, Executive Director
Goal One Coalition
39625 Almen Drive
Lebanon, OR 97355
phone: 541.258.6074
fax: 541.258.6810
www.goal1.org

November 3, 2006

Sherry Ann Perry
8028 Big Buck Lane
Klamath Falls, OR 97601

Tom Lanfear, Land Management Division
Lane County Board of Commissioners
125 East 8th Avenue
Eugene, OR 97401

Dear Mr. Lanfear and members of the Lane County Board of Commissioners.

Please enter this letter into the record regarding the application for rezoning of the property at 39191 Jasper Lowell Road, PA 04-6308, about which a public hearing is scheduled for Wednesday, November 8.

In December of last year, the Lane County Planning Commission considered this application submitted by Carol Dennis. The Commission studied a great deal of testimony, and carefully examined the application and the meager evidence given in support of it. After due consideration, the Planning Commission recommended that the request for rezoning be denied.

I strongly believe that the Planning Commission made the correct decision in this matter, and I urge you to respect that decision and deny the request for rezoning.

In addition to the issues I addressed in my letter of December 10, 2005 to the Planning Commission , a copy of which is attached and which I request be entered into the record for your deliberations on this matter, I have some additional considerations to bring to your attention.

Last month (October, 2006) I sold my property at 38975 Jasper Lowell Road to James and Julie Ereli. The buyers knew of the easement on the property for access the 100-acre forest land that abuts it and that it would be possible for the owners to build one home on their property. That property had been logged approximately 11 years ago using the easement for the purpose of bringing out the timber. The Dennis's never used the easement for any other purpose before or after the timber was harvested.

The easement is "nonexclusive", but does that mean that it is "all inclusive"? After ten years of non-use is the easement still in effect? Is it legal to change the easement from one providing access to a single lot of forest land to one providing access to a whole sub-division? (Think about an extreme case; what if Wal Mart wanted to build one of its super-stores up there. Could the easement be used to provide access to and from that store?) Even if it can be proven to be legal, is it right, or fair? Do the property owners, who own the land, and who live there and use the land as part of their home, and pay taxes on it, have any say in how it is used?

The Erlei family cares for young foster children. Their home (including their yard, which is completely fenced and which has a gate across the driveway) was found to be appropriate and was approved by Family Services for this purpose. A steady stream of traffic through their yard to service eight or more homes would create serious safety issues regarding young children placed in the care of this family by the state. It could even render the property unsuitable for foster care. In any event, it would place an unfair burden on the use of their property for this family in regard to caring for foster children.

For that matter, it would place an unconscionable burden on this family to have their yard used as a thoroughfare when they never anticipated that this could be forced upon them.

The owners of the Forest Land, Carol Dennis and her husband Deloy Dennis, appear to almost take it for granted that the official planners of Lane County will allow them to do whatever they want to do with their land, regardless of other considerations. It would reflect very badly on Lane County if those responsible for planning its future use approve this particular application for zoning change, when the owners of the forest land have been and are planning to be so irresponsible, and who exhibit disdain for the law. For example, they never replanted after they harvested the timber on that land as the law requirs. They claim that the land cannot be productive as forest land, but if it was productive once, it could be again; yet, the owners failed to provide the Planning Commission with the actual cash value of the timber they sold after they purchased the land even though the Commission asked them to. Their application states that there is a high-flow water well on the property, but the Dennis's provided no hard evidence of this; nor have they established that there is adequate underground water up there to support eight to ten households with well water. They plan to use the yard of adjoining private home as the sole access to a subdivision instead of collaborating with the county to purchase (from willing landowners) land on which to build a suitable paved road into the subdivision.

As you are aware, decisions made by you which affect the future of Lane County cannot be taken lightly. In this case, you must weigh one non-resident couple's potential profit against the cost of reckless urban sprawl and the burden that would be imposed on responsible, tax-paying local residents. Please turn down the Dennis's request.

Sincerely,

Sherry Ann Perry Phone 541 882-1980

Sherry Ann Perry

cc: James and Julie Erlei
Attachment: Letter of December 10, 2005, from Sherry Ann Perry to Lane County Planning Commission

December 10, 2005

Sherry Ann Perry
38975 Jasper Lowell Road
Fall Creek, OR 97438

copy

Lane County Planning Commission
Land Management Division
125 East Eighth Avenue
Eugene, OR 97401

Mr. Thom Lanfear and members of the Lane County Planning Commission:

Please enter this letter into the record in regard to the application for a rezoning request by Carol Dennis for the property at 39191 Jasper Lowell Road, case PA 04-6308. I attended the hearing of the planning commission held on December 6, in Harris Hall, and spoke briefly (I used up my allotted three minutes), but I didn't have enough time to give all the input I want to submit to you.

During the planning commission hearing the applicant's arrogant and abrasive attorney, Mr. Cornacchia, dismissed anecdotal information from residents of Fall Creek as irrelevant to the work of the commission. But Goal 1 (sec. 3.1.1.1) of the Rural Comprehensive Plan Amendment Criteria 16.400 ("The Plan") states, "To ensure the opportunity for citizen involvement in all phases of the planning process". Our input is germane and merits your consideration.

Goal 2 (sec.3.1.1.2) of "The Plan" is "To establish a land use *planning process* and *policy framework* as a basis for all decisions and actions related to the use of land and to *assure an adequate factual base for such decisions and actions*" (emphasis added). To meet this goal you need relevant information from local residents and other interested citizens, and you are entitled to require information from the applicant which is not provided in the application.

Goal 4 (sec 3.1.1.4) of "The Plan" is "To preserve forest lands for forest use". The application states that "The subject property is not suitable for growing and sustaining Douglas-fir or other less merchantable tree species...." However, the owners of the land possess data that may show the *actual* production of the land is higher than the soils study mentioned in the application claims it could be. They *know* how much timber was cut when they harvested it a few years ago!

The owners also know how much money that timber brought in. Mr. Cornacchia informally stated that the owners got $90, 000.00 for the timber, but he gave no proof for that statement. According to neighbors who knew the former owner, Mr. Morrissey, and who talked with him about the land, the Dennis' purchase of the land was paid for by the sale of the timber. According to these neighbors, the couple owed more than $90,000.00

RESUBMITTAL OF
EXHIBIT 47 1

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to Mr. Morrissey, who took out a judgment against them so that he would get his money from the proceeds of the timber sales first before they could spend it on anything else. The sale probably also paid for the cost of cutting and removing the trees. Was $90,000.00 the profit after these expenses were paid? The commission should know the answer to these questions, and should have an estimate from a reliable appraiser about the value of the timber still on the property.

Replanting is required in Oregon when land owners harvest timber from their forest property. In their application, Mrs. Dennis states that they made an attempt to re-plant but she offers no proof or evidence that they ever did. All the neighbors say they never observed any new trees being planted or growing. An adequate factual base regarding the veracity of this claim requires that the applicants provide proof as to how much replanting they attempted, such as paid invoices for seedlings or cancelled checks which were paid to workers.

The hillsides around Fall Creek are covered with lush stands of timber. The properties adjoining the subject property are densely covered with tall, healthy trees of several species. Some local property owners who have harvested timber and then properly replanted, including Jonny Watson and Weyerhaeuser, have good stands of new growth. Growing good crops of Douglas-fir and other trees is what the land around Fall Creek seems to do best. The parts of the land in question that may be too rocky or the soil too shallow has successfully been used in the past for grazing cattle and growing hay.

We neighbors do attest to the deplorable condition the land is in now. After trees were cut, the slash was not removed and is still there, creating a fire hazard. Two unoccupied house trailers are slowly deteriorating into the ground, as is an old boat, a large truck stripped of its engine, several pieces of old farming and logging equipment, a rotting shed filled with junk, numerous barrels with uncertain content, and loose coils and strands of wire and falling down fences. The owners have allowed certain persons to dump truckloads of stuff on their land that would have been difficult to dispose of otherwise. These owners have not been good stewards of their land. Furthermore they have been irresponsible in regard to two of their neighbors whose properties are frequently flooded as a result of the logging activities the applicants engaged in: they made no attempt to repair the roadway and drainage cannels that were damaged by the logging trucks.

Mr. and Mrs. Dennis have no commitment to the land or to the community near which it is situated. It seems evident that from the beginning they speculated that they would be able to strip the land of its valuable timber, fail to abide by the requirements for proper reforestation, and manipulate the system into re-designating their property so that it could be further exploited by development. It is doubtful that the owners have invested even a single penny in the property beyond what they got from the sale of its timber.

Goal 10 (sec. 3.1.1.10) of "The Plan" is "To provide for the housing needs of the citizens of the state". The application does state that approval would result in eight or more new houses in Fall Creek, but it is also pertinent to realize that there is no housing shortage in Fall Creek or any pressing need for more houses. There are almost always homes along

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Jasper Lowell Road or Little Fall Creek Road for sale, and they don't always move quickly. New houses in other parts of Lane County would meet housing needs just as well or better.

Goal 13 (3.1.1.13) of "The Plan" is "To conserve energy". Fall Creek does not have any schools, health clinics, a community center, a library, a day care center, sports playing fields, shopping centers, restaurants, gas stations, automobile repair or service shops, movie theaters, or a cultural center. Fall Creek has very few job opportunities. It does have a tiny convenience store that contains a small post office, and a Christian church. To get to work and to buy almost every service and product they need residents of Fall Creek must drive 10 miles to the outskirts of Springfield or 30 minutes or more to Eugene. Trips into either of these towns use a lot of gas and oil energy.

Goal 14 (3.1.1.14) of The Plan is "To provide for an orderly and efficient transition from rural to urban land use". As the application states, Fall Creek is a rural community. Any housing development in Fall Creek could not possibly enhance its rural qualities. And inconsiderately chopping up lands designated for forest use permanently diminishes the probability that those lands will ever again be used to produce marketable trees or agricultural products.

The application states that "No extension of urban services is necessary as a result of approval of this application". That's a good thing, because there are precious few urban services in Fall Creek to be extended. Fall Creek does not have its own law enforcement officer, and it has only a small volunteer fire department. Most importantly in regard to this application, it has only a couple of paved roads which are maintained by the county or the state.

Fall Creek has two paved roads. Jasper-Lowell Road, after leaving Jasper, makes a sharp left turn after about four miles. This horseshoe-shaped road then proceeds about two miles and goes through the 100-yard length of "downtown" Fall Creek. It then turns right, arching across Little Fall Creek, and then follows Fall Creek for a while before turning back toward Lowell. Little Fall Creek Road continues on from where Jasper Lowell road turns right, and goes for about three miles before dead-ending at Weyerhaeuser land. Most of the houses in Fall Creek are built alongside these two roads. All the other roadways in Fall Creek are private driveways, or gravel roads built along short easements which provide ingress and egress to a small number of houses.

The subject land in this application is not on Jasper Lowell Road or Little Fall Creek Road. The only access to this land is via an easement that goes through my property. This is a 60-foot-wide easement which encompasses a third of my three-acre property. When I bought the property, which already contained the modest manufactured home in which I live, I was aware of the easement but I knew it was to be used only to access a 102-acre piece of forest land and maybe, eventually, to log some of it.

I had no idea that there was a even a possibility that a housing development could be built on that forest land (in fact, I was told that there was not), and that my private yard could

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become a roadway to service the eight or more homes that would be built on it. I would not have bought the property had I known that. Imagine 80 or more times a day cars barreling through *your* yard, raising dust, destroying the peace and quiet and privacy of your home. They would have round-the-clock access; I wouldn't be able to have a locked gate across the entrance to my driveway off Jasper Lowell Road. That would compromise the security of my home and other property, my horses, my dogs and cat. I'm a 67-year-old widow, living alone, so security *is* a concern. It's a nightmare scenario!

Well-planned urban (and rural) communities have access via public roads to developments within the communities; long-range advance planning for such communities requires a system of public roads and public utilities for all new developments. A sound "... *policy framework* as a basis for all decisions and actions related to the use of land...", in other words.

If and when Lane County decides that it is necessary to destroy some of its forest lands to provide housing for people clamoring to live in Fall Creek, it should first adopt an overall comprehensive land development plan which includes provisions for some new county roads. Adequate land for that purpose should be *purchased* by the county or developers, not confiscated or converted (from the original purpose) from private land owners. I would consider it brutally unfair if the planning commission approved an application for re-designation that will result in developers (who have no alternative plan) converting my private property into a heavily trafficked road to service (for evermore) the several homes that will be built and all the construction activity the development will entail.

Approval of this application would result in further hodge-podge development of rural and forest Lane County lands near Fall Creek. The land adjacent to the applicant's would most likely then be approved for development, and that is another 100 acres of productive forest land gone forever. I think these developments should be put on hold until a need for them has been established and public roads for access to them have been built.

At the planning commission meeting, I asked if Carol Dennis is the sole owner of the property as is stated on the application, and was told that any person who has an interest in the land can file an application for re-designation. Mr. Deloy Dennis, Carol's husband, is also an owner of the land but his name was not on the application. Maybe it's because Mr. Dennis is aware that he has a very bad reputation in Fall Creek. This is because as a non-resident land speculator, he has shown no regard for the land, the neighbors, or the community, so he is not well regarded here. It is known here that his license to practice as a pharmacist was revoked for misconduct that also led to his incarceration.

Mr. Dennis's character is relevant to the application insofar as the veracity of some of the statements in the application is in doubt. For example, was an honest effort made to re-plant the land, and is there really a water well on the property that produces 25 to 50 gallons of water per minute? Why was so much relevant information left out of the application, such as how much timber was cut and how much money it yielded? Many of the residents of Fall Creek are uncomfortable with the likes of Mr. Dennis deciding the

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direction our community will take. They cannot trust what he says regarding his plans for the development, either.

Mr. Jim Just and Goal One will continue to address the questions regarding whether or not the application demonstrates that the legal requirements for re-designation as marginal land have been met. I think Goal One will be able to prove that the criteria have, in fact, not been met. Regardless, I hope you will give careful consideration to the objections put forth by all of us who oppose the re-designation.

I know the work you do as planning commissioners for the county is time consuming and often complicated. I appreciate and commend your willingness to serve in this important capacity. The work you do is serious and has long-term implications for every citizen of Lane County. I hope you will carefully bear in mind all the ramifications of the requested re-designation, and I urge you to deny the application.

Please inform me about the time and place of future meetings of the planning commission regarding this application which are open to the public.

Sincerely,

Sherry Ann Perry
541 726-7995
sherryperry@aol.com