

Table. Range of variation in landscape structure for Ponderosa Pine-Oak Forest under the simulated HRV disturbance scenario on the Columbine District, San Juan National Forest, Colorado, and the degree of departure of the current landscape from the simulated range of variation (see text for details).

Landscape Metric	Condition Class (seral stage)	Current Landscape ¹		Percentiles of Simulated Distribution						HRV Departure		
		Metric Value	Percentile of HRV	0	5	25	50	75	95	100	CV ²	Index ³
<i>Seral Stage Composition</i> ⁴												
PLAND	Stand Initiation	0.242	13	0.149	0.213	0.272	0.323	0.374	0.527	0.668	97	90
	Stem Exclusion	2.985	100	0.233	0.299	0.360	0.407	0.459	0.570	0.656	67	
	Understory Reinitiation	1.190	100	0.166	0.235	0.279	0.323	0.370	0.444	0.504	65	
	Shifting Mosaic	0.000	0	0.046	0.149	0.394	0.721	0.999	1.458	1.981	182	
	Fire Maintained Open Canopy	0.000	0	1.355	1.842	2.283	2.626	2.979	3.306	3.418	56	
<i>Class Configuration</i> ⁵												
PD	Stand Initiation	0.056	0	0.350	0.464	0.578	0.674	0.796	0.982	1.199	77	100
	Stem Exclusion	0.085	0	0.473	0.631	0.770	0.843	0.950	1.092	1.170	55	
	Understory Reinitiation	0.040	0	0.209	0.295	0.696	0.770	0.861	0.998	1.073	91	
	Shifting Mosaic	0.000	0	0.075	0.110	0.244	0.384	0.505	0.638	0.738	137	
	Fire Maintained Open Canopy	0.000	0	0.294	0.374	0.420	0.465	0.510	0.567	0.622	41	
ED	Stand Initiation	0.516	0	1.073	1.553	1.943	2.321	2.711	3.691	4.467	92	81
	Stem Exclusion	3.482	83	1.725	2.188	2.599	2.858	3.261	3.970	4.556	62	
	Understory Reinitiation	1.449	7	0.859	1.327	2.100	2.410	2.762	3.164	3.564	76	
	Shifting Mosaic	0.000	0	0.235	0.610	1.496	2.827	3.931	5.380	6.352	169	
	Fire Maintained Open Canopy	0.000	0	4.135	5.282	6.361	6.984	7.896	8.586	9.052	47	
AREA_MN	Stand Initiation	4.297	100	0.388	0.407	0.443	0.476	0.513	0.564	0.594	33	100
	Stem Exclusion	35.053	100	0.361	0.406	0.437	0.473	0.520	0.611	0.754	44	
	Understory Reinitiation	29.874	100	0.343	0.352	0.384	0.415	0.477	0.749	1.825	96	
	Shifting Mosaic	0.000	0	0.448	1.072	1.519	1.837	2.196	2.807	3.695	94	
	Fire Maintained Open Canopy	0.000	0	3.001	3.858	4.649	5.461	6.743	7.965	11.327	75	
AREA_AM	Stand Initiation	58.504	100	2.163	2.587	3.352	4.299	5.377	8.762	19.637	144	100
	Stem Exclusion	313.189	100	2.350	2.880	3.346	4.075	5.477	9.088	17.850	152	
	Understory Reinitiation	229.546	100	1.914	2.278	2.705	3.205	4.489	9.569	74.361	227	
	Shifting Mosaic	0.000	0	7.271	13.811	22.470	30.198	42.221	78.497	111.048	214	
	Fire Maintained Open Canopy	0.000	0	49.144	75.046	112.839	141.593	167.493	191.604	218.735	82	
GYRATE_AI	Stand Initiation	364.376	100	63.280	69.349	78.202	86.598	94.825	112.513	156.294	50	100

	Stem Exclusion	785.095	100	66.582	71.994	77.746	85.632	96.105	122.653	151.017	59	
	Understory Reinitiation	635.950	100	59.923	63.089	69.196	75.088	86.691	125.308	373.680	83	
	Shifting Mosaic	0.000	0	110.068	173.859	217.484	252.968	301.229	372.101	465.522	78	
	Fire Maintained Open Canopy	0.000	0	297.241	376.600	456.492	519.212	563.191	610.293	650.780	45	
SHAPE_MN	Stand Initiation	1.370	100	1.197	1.216	1.234	1.245	1.260	1.279	1.308	5	100
	Stem Exclusion	1.863	100	1.203	1.218	1.233	1.247	1.261	1.282	1.298	5	
	Understory Reinitiation	1.766	100	1.183	1.199	1.212	1.227	1.243	1.261	1.298	5	
	Shifting Mosaic			1.109	1.227	1.315	1.359	1.392	1.421	1.458	14	
	Fire Maintained Open Canopy			1.441	1.483	1.513	1.538	1.570	1.612	1.647	8	
SHAPE_AM	Stand Initiation	2.264	80	1.818	1.907	2.054	2.143	2.247	2.492	2.919	27	72
	Stem Exclusion	3.324	100	1.898	1.954	2.048	2.144	2.256	2.471	2.703	24	
	Understory Reinitiation	3.259	99	1.792	1.842	1.924	1.998	2.122	2.341	4.537	25	
	Shifting Mosaic			1.763	2.502	2.997	3.338	3.813	4.738	5.821	67	
	Fire Maintained Open Canopy			3.303	3.976	4.803	5.286	5.755	6.256	6.789	43	
CPLAND	Stand Initiation	0.207	100	0.017	0.023	0.032	0.040	0.049	0.076	0.102	131	100
	Stem Exclusion	2.629	100	0.208	0.263	0.316	0.357	0.404	0.507	0.583	68	
	Understory Reinitiation	0.961	100	0.093	0.137	0.171	0.204	0.239	0.284	0.326	72	
	Shifting Mosaic	0.000	0	0.019	0.089	0.249	0.428	0.615	0.943	1.420	199	
	Fire Maintained Open Canopy	0.000	0	1.011	1.262	1.549	1.791	2.027	2.220	2.438	53	
CORE_MN	Stand Initiation	3.673	100	0.031	0.040	0.050	0.059	0.072	0.087	0.114	79	100
	Stem Exclusion	30.869	100	0.305	0.355	0.383	0.417	0.458	0.542	0.668	45	
	Understory Reinitiation	24.131	100	0.174	0.205	0.238	0.266	0.312	0.447	1.068	91	
	Shifting Mosaic	0.000	0	0.191	0.624	0.899	1.125	1.404	1.812	2.571	106	
	Fire Maintained Open Canopy	0.000	0	2.063	2.591	3.113	3.751	4.601	5.482	8.078	77	
CORE_AM	Stand Initiation	51.356	100	0.375	0.497	0.769	1.084	1.600	3.082	8.508	238	100
	Stem Exclusion	283.547	100	2.215	2.659	3.128	3.807	5.197	8.681	17.307	158	
	Understory Reinitiation	185.974	100	1.349	1.568	1.952	2.349	3.412	7.982	47.856	273	
	Shifting Mosaic	0.000	0	4.324	9.529	16.148	21.643	31.528	55.440	81.175	212	
	Fire Maintained Open Canopy	0.000	0	37.144	56.105	81.482	101.323	119.432	140.636	162.516	83	
CAI_MN	Stand Initiation	56.257	100	1.631	1.895	2.245	2.518	2.902	3.490	4.514	63	60
	Stem Exclusion	79.965	28	71.775	76.109	79.737	80.688	81.517	82.642	83.426	8	
	Understory Reinitiation	50.486	51	31.960	40.195	47.642	50.440	53.422	57.358	60.811	34	
	Shifting Mosaic	0.000	0	20.957	25.432	31.441	36.335	40.547	45.918	51.707	56	
	Fire Maintained Open Canopy	0.000	0	26.684	32.978	38.431	42.304	46.211	52.316	58.740	46	

CAI_AM	Stand Initiation	85.480	100	7.794	9.576	11.343	12.600	14.025	16.491	20.853	55	80
	Stem Exclusion	88.065	49	83.261	85.504	87.343	88.098	88.799	89.527	90.023	5	
	Understory Reinitiation	80.775	100	48.382	54.499	60.133	62.972	65.741	69.739	73.072	24	
	Shifting Mosaic	0.000	0	42.692	51.191	58.059	61.982	66.104	70.665	73.533	31	
	Fire Maintained Open Canopy	0.000	0	57.419	62.426	66.636	68.298	69.987	72.445	76.040	15	
PROX_MN	Stand Initiation	6.803	100	0.913	1.411	2.001	2.512	3.119	4.468	5.923	122	100
	Stem Exclusion	145.236	100	1.515	1.835	2.450	2.910	3.685	4.970	5.699	108	
	Understory Reinitiation	68.994	100	1.347	1.609	1.984	2.360	2.863	3.911	48.612	98	
	Shifting Mosaic	0.000	0	1.421	8.668	19.620	29.116	41.152	70.982	111.059	214	
	Fire Maintained Open Canopy	0.000	0	49.188	83.131	136.395	179.997	226.763	277.199	322.283	108	
PROX_AM	Stand Initiation	2.819	33	0.864	1.550	2.554	3.279	4.321	6.291	11.462	145	80
	Stem Exclusion	610.654	100	1.913	2.436	3.247	3.989	5.068	7.073	15.034	116	
	Understory Reinitiation	122.998	100	1.506	1.994	2.580	3.155	4.127	7.864	112.683	186	
	Shifting Mosaic	0.000	0	3.052	9.863	23.226	36.538	58.805	114.780	231.668	287	
	Fire Maintained Open Canopy	0.000	0	40.171	79.148	157.286	225.443	303.114	387.418	538.899	137	
CWED	Stand Initiation	0.113	0	0.393	0.570	0.708	0.841	0.976	1.329	1.606	90	94
	Stem Exclusion	0.821	93	0.365	0.464	0.552	0.607	0.694	0.838	0.961	61	
	Understory Reinitiation	0.404	99	0.167	0.191	0.222	0.257	0.292	0.347	0.428	61	
	Shifting Mosaic	0.000	0	0.054	0.122	0.303	0.597	0.865	1.136	1.565	170	
	Fire Maintained Open Canopy	0.000	0	0.742	1.106	1.404	1.635	1.895	2.180	2.369	66	
TECI	Stand Initiation	21.729	0	35.253	35.624	35.933	36.159	36.347	36.618	36.921	3	100
	Stem Exclusion	23.371	100	20.767	20.982	21.102	21.189	21.271	21.465	21.755	2	
	Understory Reinitiation	27.699	100	8.243	8.938	9.796	10.649	11.621	15.785	24.794	64	
	Shifting Mosaic			16.300	18.127	19.926	21.070	22.568	25.409	28.728	35	
	Fire Maintained Open Canopy			17.848	19.726	21.660	23.010	24.689	27.040	29.367	32	
CLUMPY	Stand Initiation	0.873	100	0.506	0.519	0.539	0.554	0.567	0.585	0.599	12	100
	Stem Exclusion	0.927	100	0.488	0.519	0.537	0.549	0.570	0.602	0.652	15	
	Understory Reinitiation	0.926	100	0.481	0.495	0.513	0.531	0.559	0.663	0.778	32	
	Shifting Mosaic			0.670	0.717	0.739	0.759	0.776	0.801	0.821	11	
	Fire Maintained Open Canopy			0.784	0.803	0.814	0.826	0.837	0.855	0.880	6	
IJI	Stand Initiation	67.474	100	33.326	36.433	41.081	44.625	46.397	47.883	49.003	26	100
	Stem Exclusion	75.295	100	35.044	37.757	42.064	45.350	46.792	48.214	50.647	23	
	Understory Reinitiation	76.571	100	35.537	38.324	42.746	46.369	48.232	56.098	65.488	38	

Shifting Mosaic	58.891	61.017	62.515	63.825	64.988	66.910	68.624	9
Fire Maintained Open Canopy	59.019	60.660	62.347	63.723	65.173	67.451	69.408	11
Summary Indices⁶:								
<i>Seral-Stage Departure Index</i>								90
<i>Class Configuration Departure Index</i>								93
<i>Cover Type Departure Index</i>								91

¹Some stand conditions are not represented in the current landscape. Certain metrics are logically zero if the class is absent, while others are undefined (indicated by missing data). HRV departure index is undefined if the current landscape condition is undefined.

²CV = coefficient of variation in the simulated distribution, computed as the difference between the 5 and 95th percentiles divided by the median and multiplied by 100 to convert to a percentage. n/d = not defined (division by zero).

³HRV departure index represents the degree of departure of the current landscape condition from the historic range of variability and is given here specifically as the degree of departure from the 25-75th percentile range of variation, where a 0 represents no departure (i.e., within the 25-75th percentiles of variation) and 100 represents complete departure (i.e., outside the 0-100th percentiles of variation).

⁴Landscape composition here represents the distribution of area among seral stages for the corresponding cover type. PLAND = the percent of the landscape encompassed by the corresponding seral stage. Note, PLAND = the percentage of the entire landscape, not as a percent of the corresponding cover type.

⁵Landscape configuration here represents the spatial character, distribution, and arrangement of the corresponding cover type. The landscape metrics listed here are described in detail in the FRAGSTATS methods section. PD = patch density; ED = edge density; AREA_MN = mean patch size; AREA_AM = area-weighted mean patch size; GYRATE_AM = area-weighted mean patch radius of gyration (correlation length); SHAPE_MN = mean patch shape index; SHAPE_AM = area-weighted mean patch shape index; CPLAND = core area percent of landscape; CORE_MN = mean patch core area; CORE_AM = area-weighted mean patch core area; CAI_MN = mean patch core area index; CAI_AM = area-weighted mean patch core area index; PROX_MN = mean proximity index; PROX_AM = area-weighted mean proximity index; CWED = contrast-weighted edge density; TECI = total edge contrast index; CLUMPY = clumpiness index; IJI = interspersion and juxtaposition index.

⁶Seral-stage departure index is based on the distribution of area (percentage of landscape) among seral stages and is computed as the mean departure across seral stages. Class configuration departure index is based on several landscape metrics that quantify different aspects of the spatial distribution of the cover type and is computed as the mean departure across metrics. Cover type departure index is computed as the mean of the seral-stage and class configuration departure indices.