

Table. Range of variation in landscape structure for Ponderosa Pine-Oak Forest under the simulated HRV disturbance scenario on the Dolores 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	1.448	95	0.486	0.667	0.810	0.945	1.135	1.464	1.844	84	96
	Stem Exclusion	9.816	100	0.780	0.910	1.034	1.158	1.336	1.624	1.914	62	
	Understory Reinitiation	2.118	100	0.671	0.744	0.848	0.965	1.126	1.286	2.132	56	
	Shifting Mosaic	0.027	0	0.054	0.429	1.301	1.801	2.487	3.396	5.132	165	
	Fire Maintained Open Canopy	0.000	0	4.413	6.658	7.672	8.344	9.072	10.010	10.737	40	
<i>Class Configuration</i> ⁵												
PD	Stand Initiation	0.022	0	1.408	1.846	2.209	2.505	2.882	3.444	3.931	64	100
	Stem Exclusion	0.103	0	1.833	2.423	2.714	2.914	3.193	3.645	4.132	42	
	Understory Reinitiation	0.025	0	0.716	1.297	2.491	2.726	3.008	3.275	3.532	73	
	Shifting Mosaic	0.001	0	0.189	0.294	0.577	0.779	0.984	1.249	1.657	123	
	Fire Maintained Open Canopy	0.000	0	0.638	0.715	0.837	0.920	1.004	1.134	1.266	45	
ED	Stand Initiation	1.088	0	3.954	5.525	6.634	7.773	9.102	11.706	13.976	80	98
	Stem Exclusion	7.347	2	6.482	7.544	8.380	9.227	10.302	12.728	15.002	56	
	Understory Reinitiation	1.708	0	3.972	6.046	7.025	7.872	8.908	10.029	10.726	51	
	Shifting Mosaic	0.029	0	0.395	1.769	4.924	6.989	9.495	12.813	19.878	158	
	Fire Maintained Open Canopy	0.000	0	14.114	16.783	19.722	21.396	22.914	25.199	27.557	39	
AREA_MN	Stand Initiation	66.279	100	0.315	0.330	0.358	0.380	0.407	0.454	0.577	33	100
	Stem Exclusion	94.939	100	0.327	0.340	0.360	0.387	0.434	0.533	0.672	50	
	Understory Reinitiation	83.503	100	0.285	0.298	0.317	0.340	0.396	0.801	2.319	148	
	Shifting Mosaic	34.563	100	0.280	1.238	1.972	2.263	2.708	3.461	4.482	98	
	Fire Maintained Open Canopy	0.000	0	3.914	6.445	7.742	9.046	10.502	13.369	16.332	77	
AREA_AM	Stand Initiation	917.144	100	1.852	2.152	2.737	3.109	3.803	5.479	86.311	107	91
	Stem Exclusion	2009.351	100	1.977	2.272	2.744	3.155	4.143	16.384	97.344	447	
	Understory Reinitiation	639.702	100	1.435	1.763	2.091	2.628	3.542	38.705	145.788	1406	
	Shifting Mosaic	39.174	11	3.032	25.482	62.263	90.648	140.907	268.945	975.669	269	
	Fire Maintained Open Canopy	0.000	0	167.887	401.270	620.708	770.459	961.970	1264.057	1553.918	112	
GYRATE_AI	Stand Initiation	1321.023	100	59.041	62.947	69.740	74.766	81.231	96.027	265.288	44	94

	Stem Exclusion	1813.395	100	60.243	64.619	70.370	75.802	86.498	147.193	355.310	109	
	Understory Reinitiation	1050.648	100	52.063	56.377	61.243	67.234	78.816	244.785	630.557	280	
	Shifting Mosaic	275.815	8	73.216	244.606	371.722	447.157	553.935	765.458	1659.819	116	
	Fire Maintained Open Canopy	0.000	0	511.973	880.444	1065.247	1196.718	1327.599	1534.550	1651.675	55	
SHAPE_MN	Stand Initiation	1.800	100	1.195	1.205	1.221	1.235	1.249	1.265	1.288	5	100
	Stem Exclusion	1.997	100	1.206	1.213	1.228	1.241	1.258	1.274	1.294	5	
	Understory Reinitiation	2.013	100	1.189	1.193	1.203	1.218	1.238	1.268	1.361	6	
	Shifting Mosaic	1.588	100	1.100	1.283	1.358	1.385	1.404	1.431	1.466	11	
	Fire Maintained Open Canopy			1.490	1.519	1.548	1.574	1.595	1.631	1.674	7	
SHAPE_AM	Stand Initiation	3.653	100	1.868	1.910	2.013	2.114	2.199	2.355	3.368	21	91
	Stem Exclusion	5.404	100	1.870	1.951	2.034	2.136	2.296	2.753	4.139	38	
	Understory Reinitiation	3.301	91	1.757	1.814	1.888	1.986	2.163	3.937	7.293	107	
	Shifting Mosaic	1.552	0	1.636	3.693	4.983	5.919	6.956	9.127	20.856	92	
	Fire Maintained Open Canopy			5.993	8.214	10.732	12.136	13.452	15.928	17.135	64	
CPLAND	Stand Initiation	1.301	100	0.038	0.046	0.061	0.073	0.097	0.152	0.324	145	100
	Stem Exclusion	8.488	100	0.666	0.784	0.888	0.997	1.167	1.402	1.648	62	
	Understory Reinitiation	1.703	100	0.362	0.449	0.527	0.599	0.726	0.833	1.304	64	
	Shifting Mosaic	0.022	0	0.017	0.254	0.714	1.061	1.489	2.150	3.559	179	
	Fire Maintained Open Canopy	0.000	0	3.104	4.552	5.230	5.702	6.179	7.006	7.586	43	
CORE_MN	Stand Initiation	59.528	100	0.015	0.021	0.026	0.030	0.035	0.053	0.134	108	100
	Stem Exclusion	82.094	100	0.278	0.289	0.309	0.333	0.377	0.465	0.598	53	
	Understory Reinitiation	67.130	100	0.157	0.171	0.197	0.222	0.263	0.484	1.223	141	
	Shifting Mosaic	28.750	100	0.086	0.627	1.071	1.337	1.676	2.348	2.877	129	
	Fire Maintained Open Canopy	0.000	0	2.700	4.180	5.224	6.173	7.228	9.504	11.090	86	
CORE_AM	Stand Initiation	856.673	100	0.228	0.331	0.485	0.596	0.853	1.498	67.575	196	87
	Stem Exclusion	1759.955	100	1.778	2.083	2.513	2.891	3.822	15.165	93.724	452	
	Understory Reinitiation	561.694	100	0.917	1.197	1.469	1.945	2.667	23.257	84.070	1134	
	Shifting Mosaic	31.992	17	1.331	15.813	40.432	63.815	101.657	205.662	651.920	297	
	Fire Maintained Open Canopy	0.000	0	131.341	290.156	458.936	569.654	692.856	918.159	1142.443	110	
CAI_MN	Stand Initiation	63.915	100	0.869	1.007	1.154	1.295	1.485	2.366	6.125	105	80
	Stem Exclusion	65.155	0	75.934	77.801	78.670	79.289	79.970	80.821	82.405	4	
	Understory Reinitiation	54.562	45	33.980	44.448	51.377	55.371	58.499	61.842	66.155	31	
	Shifting Mosaic	85.167	100	18.381	24.302	29.639	33.345	37.604	42.999	49.840	56	
	Fire Maintained Open Canopy	0.000	0	22.577	28.041	34.239	38.738	42.313	47.351	56.407	50	

CAI_AM	Stand Initiation	89.814	100	4.765	6.235	7.120	7.858	8.761	11.653	23.457	69	80
	Stem Exclusion	86.470	59	83.938	84.939	85.613	86.234	86.866	87.723	89.107	3	
	Understory Reinitiation	80.392	100	50.015	54.152	59.796	63.875	66.688	69.962	72.759	25	
	Shifting Mosaic	83.183	100	30.815	45.806	53.979	59.179	64.607	69.257	77.040	40	
	Fire Maintained Open Canopy	0.000	0	58.862	62.751	66.411	68.758	70.474	72.489	74.693	14	
PROX_MN	Stand Initiation	45.990	100	1.311	1.932	2.481	2.994	3.944	5.264	6.950	111	98
	Stem Exclusion	687.998	100	2.179	2.479	2.921	3.543	4.480	7.460	18.066	141	
	Understory Reinitiation	33.818	97	1.781	1.963	2.328	2.854	3.655	13.842	149.238	416	
	Shifting Mosaic	0.000	0	0.953	23.576	63.585	96.410	140.837	267.482	1352.325	253	
	Fire Maintained Open Canopy	0.000	0	156.254	527.470	823.193	1128.831	1490.011	2094.929	2776.090	139	
PROX_AM	Stand Initiation	58.279	100	1.685	2.511	3.495	4.458	5.694	8.224	13.269	128	91
	Stem Exclusion	1012.601	100	2.661	3.304	4.070	5.156	7.154	17.788	54.902	281	
	Understory Reinitiation	17.656	89	2.241	2.637	3.186	4.035	5.506	39.176	268.793	906	
	Shifting Mosaic	0.000	0	2.987	29.176	94.368	160.935	252.855	512.955	1674.188	301	
	Fire Maintained Open Canopy	0.000	0	163.375	492.219	898.378	1404.992	2058.431	2695.604	3022.156	157	
CWED	Stand Initiation	0.327	0	1.493	2.073	2.493	2.906	3.404	4.375	5.179	79	74
	Stem Exclusion	2.489	90	1.391	1.616	1.800	1.976	2.205	2.718	3.229	56	
	Understory Reinitiation	0.665	22	0.488	0.575	0.677	0.764	0.858	1.159	1.922	76	
	Shifting Mosaic	0.009	0	0.102	0.422	1.114	1.669	2.199	2.975	4.249	153	
	Fire Maintained Open Canopy	0.000	0	2.764	3.952	4.693	5.266	5.815	6.553	7.062	49	
TECI	Stand Initiation	29.274	0	36.159	36.821	37.212	37.412	37.567	37.758	38.078	3	100
	Stem Exclusion	33.223	100	21.195	21.258	21.327	21.377	21.425	21.555	21.948	1	
	Understory Reinitiation	38.770	100	7.010	7.713	8.613	9.392	10.326	17.746	27.624	107	
	Shifting Mosaic	30.582	100	16.532	19.485	21.449	22.852	24.623	27.093	30.978	33	
	Fire Maintained Open Canopy			18.745	21.123	23.094	24.348	25.713	27.852	31.445	28	
CLUMPY	Stand Initiation	0.955	100	0.442	0.465	0.478	0.488	0.498	0.519	0.597	11	100
	Stem Exclusion	0.949	100	0.455	0.464	0.477	0.488	0.505	0.569	0.627	22	
	Understory Reinitiation	0.952	100	0.426	0.440	0.456	0.468	0.496	0.660	0.767	47	
	Shifting Mosaic	0.963	100	0.550	0.704	0.735	0.752	0.771	0.799	0.825	13	
	Fire Maintained Open Canopy			0.779	0.802	0.815	0.825	0.836	0.849	0.888	6	
IJI	Stand Initiation	63.294	100	24.556	28.340	33.029	35.773	37.737	39.787	42.428	32	100
	Stem Exclusion	62.517	100	24.734	28.944	34.038	36.416	37.770	39.874	43.748	30	
	Understory Reinitiation	67.047	100	25.492	29.869	34.622	37.416	39.521	46.893	54.831	45	

Shifting Mosaic	44.866	0	48.602	51.512	53.205	54.251	55.632	58.652	67.880	13
Fire Maintained Open Canopy			49.101	50.451	51.583	52.637	53.728	55.895	58.784	10
Summary Indices⁶:										
<i>Seral-Stage Departure Index</i>										96
<i>Class Configuration Departure Index</i>										94
<i>Cover Type Departure Index</i>										95

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 = interspersions 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.