

Table. Range of variation in landscape structure for Ponderosa Pine-Oak Forest under the simulated HRV disturbance scenario on the Pagosa 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	0.463	31	0.281	0.374	0.451	0.512	0.611	0.822	0.990	88	80
	Stem Exclusion	4.048	100	0.441	0.518	0.592	0.659	0.745	0.922	1.023	61	
	Understory Reinitiation	2.435	100	0.260	0.360	0.475	0.532	0.617	0.686	0.869	61	
	Shifting Mosaic	0.107	0	0.067	0.276	0.769	1.193	1.673	2.391	2.961	177	
	Fire Maintained Open Canopy	0.000	0	2.243	2.771	3.497	4.073	4.596	5.167	5.573	59	
<i>Class Configuration</i> ⁵												
PD	Stand Initiation	0.014	0	0.696	0.939	1.141	1.289	1.502	1.839	2.202	70	100
	Stem Exclusion	0.101	0	0.802	1.265	1.479	1.624	1.769	2.008	2.206	46	
	Understory Reinitiation	0.064	0	0.313	0.508	1.332	1.512	1.652	1.823	2.090	87	
	Shifting Mosaic	0.002	0	0.117	0.255	0.471	0.657	0.812	1.037	1.195	119	
	Fire Maintained Open Canopy	0.000	0	0.489	0.560	0.653	0.704	0.767	0.846	0.999	41	
ED	Stand Initiation	0.587	0	2.174	2.913	3.613	4.089	4.856	6.292	7.738	83	79
	Stem Exclusion	4.520	19	3.227	3.949	4.686	5.135	5.765	6.984	7.920	59	
	Understory Reinitiation	2.627	8	1.471	1.986	3.880	4.372	4.947	5.459	6.447	79	
	Shifting Mosaic	0.135	0	0.449	1.336	3.093	5.079	6.797	9.111	10.424	153	
	Fire Maintained Open Canopy	0.000	0	7.304	8.660	10.380	11.644	12.846	14.243	15.554	48	
AREA_MN	Stand Initiation	32.719	100	0.333	0.356	0.380	0.398	0.427	0.476	0.532	30	100
	Stem Exclusion	39.983	100	0.337	0.354	0.378	0.406	0.448	0.522	0.754	41	
	Understory Reinitiation	38.008	100	0.294	0.309	0.328	0.356	0.412	0.710	1.730	113	
	Shifting Mosaic	60.150	100	0.374	1.050	1.515	1.825	2.131	2.890	4.432	101	
	Fire Maintained Open Canopy	0.000	0	3.267	3.993	4.729	5.625	6.616	8.456	10.853	79	
AREA_AM	Stand Initiation	154.662	100	1.732	2.204	2.701	3.016	3.704	5.664	24.495	115	95
	Stem Exclusion	252.291	100	1.768	2.209	2.594	3.046	3.859	10.030	52.304	257	
	Understory Reinitiation	525.571	100	1.493	1.719	1.978	2.491	3.555	14.504	62.382	513	
	Shifting Mosaic	110.686	94	4.342	15.242	25.051	36.552	61.531	119.363	238.556	285	
	Fire Maintained Open Canopy	0.000	0	58.180	94.941	147.772	242.705	303.590	356.946	442.798	108	
GYRATE_AM	Stand Initiation	616.998	100	57.303	63.819	70.138	74.572	81.359	90.855	143.607	36	98

	Stem Exclusion	706.721	100	58.127	63.801	69.391	74.835	83.231	118.545	265.041	73	
	Understory Reinitiation	996.127	100	52.734	56.129	60.543	66.057	78.971	163.536	303.741	163	
	Shifting Mosaic	529.211	98	94.235	184.451	230.114	276.327	351.118	462.990	703.961	101	
	Fire Maintained Open Canopy	0.000	0	328.960	424.665	512.472	639.676	701.456	759.340	800.975	52	
SHAPE_MN	Stand Initiation	1.875	100	1.198	1.216	1.228	1.239	1.250	1.269	1.295	4	100
	Stem Exclusion	1.913	100	1.208	1.217	1.231	1.243	1.254	1.273	1.288	5	
	Understory Reinitiation	1.871	100	1.187	1.195	1.208	1.221	1.232	1.255	1.364	5	
	Shifting Mosaic	2.250	100	1.137	1.264	1.348	1.384	1.405	1.439	1.468	13	
	Fire Maintained Open Canopy			1.479	1.522	1.555	1.584	1.617	1.657	1.691	9	
SHAPE_AM	Stand Initiation	2.769	100	1.789	1.914	2.012	2.092	2.180	2.299	2.428	18	82
	Stem Exclusion	3.023	100	1.824	1.920	2.020	2.099	2.193	2.397	3.022	23	
	Understory Reinitiation	3.163	98	1.750	1.799	1.880	1.965	2.135	2.819	3.795	52	
	Shifting Mosaic	3.334	16	2.176	2.901	3.547	3.949	4.693	5.807	6.947	74	
	Fire Maintained Open Canopy			3.944	4.794	5.773	6.872	7.375	7.994	9.064	47	
CPLAND	Stand Initiation	0.385	100	0.019	0.029	0.037	0.046	0.057	0.088	0.124	128	98
	Stem Exclusion	3.542	100	0.378	0.441	0.508	0.570	0.643	0.801	0.883	63	
	Understory Reinitiation	1.947	100	0.149	0.202	0.276	0.319	0.379	0.440	0.493	75	
	Shifting Mosaic	0.095	2	0.020	0.145	0.430	0.703	0.982	1.470	1.999	188	
	Fire Maintained Open Canopy	0.000	0	1.552	1.883	2.287	2.683	3.038	3.450	3.800	58	
CORE_MN	Stand Initiation	27.166	100	0.019	0.026	0.031	0.035	0.042	0.057	0.101	89	100
	Stem Exclusion	34.990	100	0.283	0.302	0.324	0.351	0.389	0.450	0.637	42	
	Understory Reinitiation	30.392	100	0.145	0.169	0.196	0.217	0.252	0.392	0.981	103	
	Shifting Mosaic	53.900	100	0.128	0.573	0.814	1.027	1.291	1.834	2.940	123	
	Fire Maintained Open Canopy	0.000	0	2.133	2.548	3.145	3.714	4.456	5.700	7.112	85	
CORE_AM	Stand Initiation	138.489	100	0.226	0.321	0.458	0.574	0.843	1.493	17.725	204	97
	Stem Exclusion	231.973	100	1.555	1.990	2.357	2.791	3.566	9.479	47.602	268	
	Understory Reinitiation	457.374	100	0.860	1.120	1.378	1.771	2.676	9.282	41.617	461	
	Shifting Mosaic	97.325	96	1.373	9.091	16.194	24.685	42.771	84.609	179.949	306	
	Fire Maintained Open Canopy	0.000	0	45.042	65.089	106.056	172.835	226.031	267.895	332.211	117	
CAI_MN	Stand Initiation	62.964	100	1.187	1.358	1.559	1.748	2.057	2.735	4.017	79	100
	Stem Exclusion	71.613	0	73.983	77.000	78.942	80.054	80.810	81.744	82.461	6	
	Understory Reinitiation	64.844	100	34.073	41.802	47.453	51.460	54.166	57.331	61.357	30	
	Shifting Mosaic	75.145	100	20.299	24.623	29.003	32.103	35.869	40.246	44.403	49	
	Fire Maintained Open Canopy	0.000	0	25.190	30.339	36.018	39.881	43.439	48.534	54.005	46	

CAI_AM	Stand Initiation	83.028	100	5.598	7.022	7.993	8.750	9.829	12.408	19.350	62	91
	Stem Exclusion	87.511	89	83.283	84.296	85.496	86.262	87.024	87.773	89.195	4	
	Understory Reinitiation	79.963	100	46.809	52.264	57.427	60.682	63.404	66.254	71.658	23	
	Shifting Mosaic	89.609	100	30.494	46.284	53.171	56.784	61.235	66.323	71.310	35	
	Fire Maintained Open Canopy	0.000	0	57.114	60.008	64.559	66.538	68.204	70.491	73.360	16	
PROX_MN	Stand Initiation	12.471	100	1.286	1.628	2.061	2.522	3.130	4.406	5.636	110	100
	Stem Exclusion	86.778	100	1.604	2.075	2.541	2.964	3.568	4.663	6.976	87	
	Understory Reinitiation	104.911	100	1.400	1.655	2.029	2.410	3.012	5.914	21.808	177	
	Shifting Mosaic	0.789	0	2.198	10.370	24.165	36.057	55.216	105.101	192.258	263	
	Fire Maintained Open Canopy	0.000	0	53.459	105.042	160.894	240.730	295.817	347.197	376.403	101	
PROX_AM	Stand Initiation	1.750	1	1.494	1.923	2.640	3.312	4.247	6.153	8.140	128	99
	Stem Exclusion	293.018	100	1.700	2.524	3.227	3.939	5.089	7.131	68.680	117	
	Understory Reinitiation	510.029	100	1.503	2.060	2.567	3.223	4.436	16.845	36.170	459	
	Shifting Mosaic	1.641	0	4.961	14.907	30.777	45.502	72.363	158.532	415.136	316	
	Fire Maintained Open Canopy	0.000	0	49.778	86.196	138.397	219.411	295.696	379.004	445.600	133	
CWED	Stand Initiation	0.176	0	0.803	1.070	1.322	1.491	1.770	2.294	2.813	82	80
	Stem Exclusion	1.158	64	0.719	0.852	1.002	1.098	1.234	1.496	1.697	59	
	Understory Reinitiation	0.861	100	0.234	0.326	0.412	0.466	0.520	0.595	0.939	58	
	Shifting Mosaic	0.024	0	0.128	0.288	0.736	1.168	1.565	2.106	2.408	156	
	Fire Maintained Open Canopy	0.000	0	1.445	1.873	2.361	2.749	3.171	3.611	4.168	63	
TECI	Stand Initiation	29.769	0	35.474	36.026	36.320	36.498	36.652	36.813	37.104	2	100
	Stem Exclusion	25.236	100	21.040	21.158	21.269	21.345	21.413	21.573	22.206	2	
	Understory Reinitiation	32.127	100	8.327	8.942	9.720	10.508	11.625	18.219	26.604	88	
	Shifting Mosaic	17.275	0	18.996	20.286	21.571	22.777	24.244	27.432	29.574	31	
	Fire Maintained Open Canopy			18.461	20.342	22.080	23.376	24.808	27.292	31.286	30	
CLUMPY	Stand Initiation	0.926	100	0.462	0.484	0.494	0.502	0.516	0.537	0.581	11	100
	Stem Exclusion	0.928	100	0.473	0.482	0.492	0.504	0.522	0.568	0.667	17	
	Understory Reinitiation	0.932	100	0.447	0.454	0.468	0.481	0.512	0.652	0.772	41	
	Shifting Mosaic	0.933	100	0.583	0.697	0.720	0.738	0.752	0.789	0.838	12	
	Fire Maintained Open Canopy			0.759	0.785	0.800	0.810	0.822	0.845	0.867	7	
IJI	Stand Initiation	67.466	100	32.089	35.407	39.833	42.545	44.272	45.641	46.734	24	93
	Stem Exclusion	74.335	100	31.391	36.443	41.071	43.235	44.571	46.473	48.353	23	
	Understory Reinitiation	71.101	100	33.275	37.545	41.646	44.393	46.166	53.131	62.869	35	

Shifting Mosaic	58.755	7	57.184	58.539	59.990	61.037	62.226	64.225	67.040	9
Fire Maintained Open Canopy			56.397	58.071	59.569	60.833	61.974	64.332	67.529	10
Summary Indices⁶:										
<i>Seral-Stage Departure Index</i>										80
<i>Class Configuration Departure Index</i>										95
<i>Cover Type Departure Index</i>										87

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.