

Table. Range of variation in landscape structure for Warm Dry Mixed-Conifer 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	0.023	0	0.072	0.165	0.283	0.373	0.469	0.659	0.862	132	100
	Stem Exclusion	2.038	100	0.398	0.690	0.802	0.910	1.022	1.135	1.364	49	
	Understory Reinitiation	6.464	100	0.552	0.840	1.162	1.267	1.391	1.508	1.621	53	
	Shifting Mosaic	0.212	0	0.505	0.936	1.576	2.086	2.688	3.325	4.403	115	
	Fire Maintained Open Canopy	0.000	0	1.884	2.792	3.524	4.060	4.617	5.252	6.208	61	
<i>Class Configuration</i> ⁵												
PD	Stand Initiation	0.004	0	0.185	0.369	0.536	0.695	0.870	1.196	1.465	119	100
	Stem Exclusion	0.058	0	0.889	1.342	1.608	1.780	1.943	2.192	2.422	48	
	Understory Reinitiation	0.143	0	0.717	1.099	2.004	2.223	2.390	2.676	2.863	71	
	Shifting Mosaic	0.003	0	0.337	0.541	0.739	0.883	1.019	1.234	1.344	79	
	Fire Maintained Open Canopy	0.000	0	0.595	0.737	0.863	0.946	1.004	1.073	1.178	36	
ED	Stand Initiation	0.035	0	0.545	1.130	1.810	2.398	2.996	4.207	5.191	128	80
	Stem Exclusion	2.298	0	2.752	4.697	5.447	6.160	6.690	7.403	8.251	44	
	Understory Reinitiation	7.427	25	2.924	4.373	7.409	8.230	8.956	9.914	10.711	67	
	Shifting Mosaic	0.252	0	1.573	3.369	5.430	7.247	8.961	11.328	13.250	110	
	Fire Maintained Open Canopy	0.000	0	6.679	8.994	10.783	12.252	13.676	15.233	16.436	51	
AREA_MN	Stand Initiation	5.966	100	0.345	0.394	0.476	0.528	0.580	0.686	0.844	55	100
	Stem Exclusion	35.321	100	0.336	0.386	0.469	0.514	0.568	0.639	0.734	49	
	Understory Reinitiation	45.317	100	0.443	0.508	0.548	0.585	0.622	0.704	1.740	34	
	Shifting Mosaic	66.590	100	1.120	1.508	1.924	2.335	2.712	3.598	4.538	89	
	Fire Maintained Open Canopy	0.000	0	2.555	3.368	3.853	4.309	4.730	6.024	8.004	62	
AREA_AM	Stand Initiation	22.515	98	2.088	2.999	4.077	5.430	7.293	15.559	40.043	231	99
	Stem Exclusion	948.045	100	3.019	3.655	5.033	6.291	8.167	11.989	16.249	132	
	Understory Reinitiation	414.134	100	3.557	4.690	5.876	7.276	9.334	14.559	262.863	136	
	Shifting Mosaic	191.836	100	17.888	23.403	33.380	46.910	65.021	93.731	189.068	150	
	Fire Maintained Open Canopy	0.000	0	35.998	60.101	88.164	114.897	142.654	217.396	347.873	137	
GYRATE_AM	Stand Initiation	205.007	99	59.292	71.793	85.379	96.746	110.812	145.280	241.505	76	100

	Stem Exclusion	1334.017	100	72.030	79.615	92.970	102.586	112.462	134.839	155.002	54	
	Understory Reinitiation	967.151	100	82.572	92.720	101.949	111.993	124.160	157.268	642.219	58	
	Shifting Mosaic	661.198	100	203.162	229.028	272.556	317.220	364.831	433.998	575.772	65	
	Fire Maintained Open Canopy	0.000	0	260.597	350.168	420.593	479.220	539.651	660.696	771.841	65	
SHAPE_MN	Stand Initiation	1.172	0	1.170	1.204	1.221	1.234	1.245	1.259	1.271	4	100
	Stem Exclusion	1.879	100	1.194	1.208	1.226	1.237	1.248	1.260	1.275	4	
	Understory Reinitiation	2.065	100	1.214	1.235	1.247	1.257	1.264	1.274	1.306	3	
	Shifting Mosaic	2.353	100	1.191	1.268	1.333	1.369	1.397	1.426	1.449	12	
	Fire Maintained Open Canopy			1.432	1.469	1.500	1.515	1.531	1.557	1.603	6	
SHAPE_AM	Stand Initiation	1.570	0	1.592	1.839	1.986	2.108	2.218	2.446	2.869	29	73
	Stem Exclusion	4.154	100	1.920	2.011	2.119	2.193	2.281	2.417	2.597	19	
	Understory Reinitiation	3.601	98	1.986	2.114	2.222	2.300	2.402	2.594	4.788	21	
	Shifting Mosaic	3.655	50	2.441	2.912	3.333	3.656	4.015	4.575	5.236	45	
	Fire Maintained Open Canopy			3.392	3.968	4.560	4.994	5.515	6.155	7.088	44	
CPLAND	Stand Initiation	0.020	3	0.007	0.025	0.046	0.066	0.090	0.141	0.197	176	97
	Stem Exclusion	1.814	100	0.353	0.623	0.732	0.830	0.932	1.043	1.248	51	
	Understory Reinitiation	5.622	100	0.386	0.633	0.865	0.962	1.054	1.180	1.302	57	
	Shifting Mosaic	0.160	0	0.362	0.696	1.176	1.578	2.041	2.569	3.350	119	
	Fire Maintained Open Canopy	0.000	0	1.424	2.120	2.597	3.021	3.427	3.895	4.472	59	
CORE_MN	Stand Initiation	5.085	100	0.031	0.049	0.075	0.095	0.118	0.168	0.255	124	100
	Stem Exclusion	31.438	100	0.306	0.355	0.427	0.468	0.519	0.586	0.667	49	
	Understory Reinitiation	39.412	100	0.332	0.370	0.413	0.442	0.479	0.538	1.295	38	
	Shifting Mosaic	50.354	100	0.781	1.075	1.426	1.786	2.105	2.792	3.736	96	
	Fire Maintained Open Canopy	0.000	0	1.931	2.470	2.854	3.172	3.537	4.539	5.925	65	
CORE_AM	Stand Initiation	19.813	100	0.357	0.790	1.266	1.869	2.909	7.944	23.287	383	100
	Stem Exclusion	893.107	100	2.841	3.453	4.751	5.979	7.811	11.478	15.378	134	
	Understory Reinitiation	385.345	100	2.865	3.774	4.901	6.222	8.102	11.790	231.575	129	
	Shifting Mosaic	139.881	100	14.726	19.272	27.579	39.500	56.260	82.116	173.501	159	
	Fire Maintained Open Canopy	0.000	0	29.916	48.079	72.472	94.015	115.903	172.822	280.272	133	
CAI_MN	Stand Initiation	22.856	100	1.078	1.743	2.428	2.820	3.277	3.835	4.662	74	99
	Stem Exclusion	71.640	0	82.276	83.926	85.338	86.182	87.148	88.425	90.340	5	
	Understory Reinitiation	73.993	99	48.225	57.466	62.367	65.652	68.194	71.827	74.688	22	
	Shifting Mosaic	67.183	100	36.953	44.477	50.454	54.473	57.555	61.492	64.343	31	
	Fire Maintained Open Canopy	0.000	0	37.221	44.841	51.293	55.262	59.019	62.890	67.359	33	

CAI_AM	Stand Initiation	85.238	100	8.397	12.304	15.703	17.921	20.247	24.797	30.143	70	80
	Stem Exclusion	89.004	1	88.509	89.795	90.716	91.196	91.745	92.538	93.131	3	
	Understory Reinitiation	86.969	100	63.844	69.570	73.578	76.161	77.998	80.586	82.786	14	
	Shifting Mosaic	75.618	41	64.715	68.016	73.656	76.455	78.943	82.428	85.016	19	
	Fire Maintained Open Canopy	0.000	0	64.117	68.155	72.254	74.636	76.679	78.879	81.425	14	
PROX_MN	Stand Initiation	0.009	0	0.385	1.127	1.742	2.299	2.766	3.654	6.436	110	100
	Stem Exclusion	24.407	100	2.070	2.803	3.328	3.795	4.346	4.998	5.565	58	
	Understory Reinitiation	123.089	100	3.072	3.860	4.668	5.421	6.184	7.678	54.266	70	
	Shifting Mosaic	1.746	0	9.288	15.884	28.434	39.445	55.201	77.719	120.020	157	
	Fire Maintained Open Canopy	0.000	0	33.221	63.784	94.993	126.527	162.114	218.950	286.048	123	
PROX_AM	Stand Initiation	0.000	0	0.313	1.203	2.066	3.072	3.961	5.751	21.856	148	100
	Stem Exclusion	25.018	100	2.804	3.772	4.769	5.668	6.513	8.611	15.865	85	
	Understory Reinitiation	298.762	100	3.513	5.535	6.885	8.259	9.437	13.457	117.089	96	
	Shifting Mosaic	0.241	0	17.321	26.120	40.100	60.046	82.346	129.530	232.914	172	
	Fire Maintained Open Canopy	0.000	0	45.114	72.357	117.955	169.028	222.081	320.463	504.456	147	
CWED	Stand Initiation	0.009	0	0.200	0.416	0.660	0.879	1.091	1.544	1.914	128	100
	Stem Exclusion	0.558	0	0.579	0.981	1.130	1.274	1.385	1.533	1.701	43	
	Understory Reinitiation	1.494	100	0.366	0.491	0.654	0.740	0.812	0.913	1.069	57	
	Shifting Mosaic	0.090	0	0.297	0.501	0.838	1.058	1.339	1.755	2.117	118	
	Fire Maintained Open Canopy	0.000	0	0.966	1.425	1.815	2.151	2.546	3.036	3.570	75	
TECI	Stand Initiation	25.960	0	35.192	35.750	36.286	36.596	36.853	37.285	37.889	4	100
	Stem Exclusion	24.144	100	20.312	20.478	20.588	20.682	20.779	20.900	21.031	2	
	Understory Reinitiation	19.865	100	7.446	7.905	8.598	9.042	9.711	11.200	15.077	36	
	Shifting Mosaic	34.938	100	10.145	12.066	13.923	14.950	16.241	18.406	21.436	42	
	Fire Maintained Open Canopy			13.575	15.079	16.358	17.486	18.730	21.125	24.897	35	
CLUMPY	Stand Initiation	0.935	100	0.491	0.536	0.572	0.594	0.615	0.651	0.699	19	100
	Stem Exclusion	0.931	100	0.491	0.519	0.560	0.583	0.601	0.627	0.660	19	
	Understory Reinitiation	0.924	100	0.538	0.560	0.583	0.597	0.612	0.667	0.788	18	
	Shifting Mosaic	0.934	100	0.725	0.751	0.766	0.776	0.788	0.827	0.849	10	
	Fire Maintained Open Canopy			0.775	0.783	0.795	0.803	0.811	0.838	0.859	7	
IJI	Stand Initiation	52.289	100	32.086	39.638	43.356	45.595	47.891	50.351	52.228	23	89
	Stem Exclusion	74.598	100	37.804	41.844	44.665	46.113	47.453	48.918	50.693	15	
	Understory Reinitiation	72.803	100	42.482	45.777	47.600	48.775	49.596	53.314	68.939	15	

Shifting Mosaic	63.148	11	59.348	62.253	64.248	66.243	68.469	71.417	75.060	14
Fire Maintained Open Canopy			58.846	60.137	61.389	62.323	63.731	66.999	70.219	11
Summary Indices⁶:										
<i>Seral-Stage Departure Index</i>										100
<i>Class Configuration Departure Index</i>										95
<i>Cover Type Departure Index</i>										98

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.