

Table. Range of variation in landscape structure for Warm Dry Mixed-Conifer with Aspen 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 Composition⁴</i>												
PLAND	Stand Initiation	0.688	98	0.074	0.155	0.239	0.328	0.442	0.607	0.755	138	94
	Stem Exclusion	0.415	6	0.280	0.405	0.545	0.643	0.739	0.867	1.000	72	
	Understory Reinitiation	5.776	100	0.773	0.875	1.014	1.131	1.263	1.411	1.814	47	
	Shifting Mosaic	0.002	0	0.509	0.855	1.401	1.860	2.276	2.892	3.494	109	
	Fire Maintained Open Canopy	0.000	0	1.362	1.855	2.454	2.876	3.362	3.903	4.180	71	
<i>Class Configuration⁵</i>												
PD	Stand Initiation	0.171	1	0.145	0.279	0.418	0.554	0.739	0.980	1.247	127	99
	Stem Exclusion	0.017	0	0.492	0.738	0.918	1.053	1.158	1.369	1.755	60	
	Understory Reinitiation	0.275	0	0.563	0.892	1.456	1.581	1.689	1.893	2.132	63	
	Shifting Mosaic	0.001	0	0.242	0.385	0.568	0.700	0.812	0.965	1.056	83	
	Fire Maintained Open Canopy	0.000	0	0.449	0.571	0.671	0.731	0.784	0.855	0.937	39	
ED	Stand Initiation	1.579	27	0.496	1.016	1.529	2.105	2.729	3.770	4.607	131	71
	Stem Exclusion	0.499	0	1.774	2.605	3.423	3.977	4.513	5.327	5.919	68	
	Understory Reinitiation	7.459	89	3.645	4.736	5.784	6.440	7.078	7.783	8.695	47	
	Shifting Mosaic	0.008	0	1.546	2.761	4.638	6.045	7.389	9.385	10.810	110	
	Fire Maintained Open Canopy	0.000	0	4.477	5.844	7.704	8.780	9.892	11.336	12.507	63	
AREA_MN	Stand Initiation	4.024	100	0.405	0.473	0.541	0.590	0.646	0.736	0.830	45	100
	Stem Exclusion	24.641	100	0.424	0.507	0.564	0.605	0.654	0.738	0.872	38	
	Understory Reinitiation	21.035	100	0.515	0.578	0.644	0.697	0.767	1.350	2.374	111	
	Shifting Mosaic	1.328	0	1.350	1.818	2.326	2.670	2.920	3.592	5.577	66	
	Fire Maintained Open Canopy	0.000	0	2.347	3.033	3.556	3.916	4.341	5.035	6.941	51	
AREA_AM	Stand Initiation	116.980	100	2.836	3.353	4.421	5.345	6.932	10.257	21.864	129	100
	Stem Exclusion	274.880	100	2.868	3.997	5.215	6.214	7.683	10.943	19.078	112	
	Understory Reinitiation	190.838	100	4.169	4.938	6.765	8.022	11.139	79.357	110.109	928	
	Shifting Mosaic	2.389	0	20.258	28.833	40.106	48.717	60.009	81.071	123.560	107	
	Fire Maintained Open Canopy	0.000	0	25.897	50.122	67.022	76.118	86.130	98.499	111.337	64	
GYRATE_AM	Stand Initiation	455.654	100	71.554	78.501	89.930	98.980	109.649	131.520	207.068	54	100

	Stem Exclusion	661.487	100	74.498	85.796	96.776	105.259	114.410	133.671	164.338	45	
	Understory Reinitiation	630.047	100	89.079	96.743	111.310	120.387	136.469	327.021	420.178	191	
	Shifting Mosaic	74.097	0	230.050	258.482	293.415	320.707	349.860	403.460	497.051	45	
	Fire Maintained Open Canopy	0.000	0	230.187	309.862	363.700	384.889	411.591	454.124	481.741	37	
SHAPE_MN	Stand Initiation	1.329	100	1.194	1.227	1.241	1.250	1.259	1.274	1.298	4	98
	Stem Exclusion	1.667	100	1.218	1.233	1.245	1.254	1.263	1.277	1.306	3	
	Understory Reinitiation	1.634	100	1.238	1.252	1.262	1.271	1.281	1.294	1.304	3	
	Shifting Mosaic	1.457	98	1.230	1.279	1.342	1.379	1.408	1.445	1.484	12	
	Fire Maintained Open Canopy			1.415	1.442	1.471	1.494	1.516	1.541	1.562	7	
SHAPE_AM	Stand Initiation	3.123	100	1.790	1.923	2.022	2.124	2.236	2.407	3.166	23	91
	Stem Exclusion	2.833	100	1.861	2.010	2.104	2.189	2.283	2.415	2.767	18	
	Understory Reinitiation	2.945	91	2.058	2.153	2.272	2.364	2.495	3.105	3.742	40	
	Shifting Mosaic	1.541	0	2.813	3.133	3.484	3.678	3.957	4.303	4.632	32	
	Fire Maintained Open Canopy			3.074	3.634	4.008	4.240	4.497	4.765	4.972	27	
CPLAND	Stand Initiation	0.415	100	0.004	0.011	0.022	0.033	0.050	0.067	0.093	171	100
	Stem Exclusion	0.319	100	0.073	0.101	0.144	0.175	0.211	0.260	0.326	91	
	Understory Reinitiation	4.838	100	0.487	0.563	0.679	0.777	0.885	1.037	1.334	61	
	Shifting Mosaic	0.000	0	0.386	0.639	1.049	1.386	1.698	2.143	2.637	109	
	Fire Maintained Open Canopy	0.000	0	0.890	1.159	1.541	1.802	2.116	2.459	2.745	72	
CORE_MN	Stand Initiation	2.429	100	0.023	0.031	0.048	0.059	0.073	0.098	0.157	113	100
	Stem Exclusion	18.957	100	0.084	0.120	0.145	0.168	0.191	0.234	0.295	68	
	Understory Reinitiation	17.619	100	0.316	0.367	0.431	0.487	0.552	0.922	1.743	114	
	Shifting Mosaic	0.156	0	0.919	1.316	1.705	1.968	2.216	2.763	4.115	74	
	Fire Maintained Open Canopy	0.000	0	1.421	1.888	2.253	2.471	2.721	3.192	4.640	53	
CORE_AM	Stand Initiation	87.306	100	0.314	0.469	0.805	1.163	1.684	2.949	7.735	213	100
	Stem Exclusion	222.054	100	1.045	1.634	2.361	2.913	3.798	5.679	11.121	139	
	Understory Reinitiation	171.127	100	2.931	3.582	5.193	6.464	9.210	65.637	84.472	960	
	Shifting Mosaic	0.241	0	15.579	22.269	31.007	38.358	47.569	65.527	102.285	113	
	Fire Maintained Open Canopy	0.000	0	18.330	33.346	44.259	52.135	58.950	67.578	82.870	66	
CAI_MN	Stand Initiation	13.007	100	0.613	0.952	1.283	1.597	1.924	2.454	3.836	94	99
	Stem Exclusion	51.478	100	3.071	4.033	4.851	5.358	5.977	6.834	9.042	52	
	Understory Reinitiation	39.649	2	36.703	43.768	49.015	52.347	55.719	60.943	64.179	33	
	Shifting Mosaic	9.423	0	30.495	39.012	46.044	50.414	54.779	60.880	64.999	43	
	Fire Maintained Open Canopy	0.000	0	24.856	29.402	33.718	36.686	40.178	45.138	48.899	43	

CAI_AM	Stand Initiation	60.361	100	4.885	6.461	8.609	9.983	11.514	14.072	19.941	76	100
	Stem Exclusion	76.933	100	19.172	23.238	25.663	27.768	29.463	32.053	36.053	32	
	Understory Reinitiation	83.760	100	53.330	61.988	66.309	68.947	71.794	75.204	77.398	19	
	Shifting Mosaic	11.765	0	53.025	65.329	71.440	74.981	77.819	81.799	84.582	22	
	Fire Maintained Open Canopy	0.000	0	51.785	57.272	60.416	62.992	65.172	67.693	69.745	17	
PROX_MN	Stand Initiation	40.843	100	0.587	1.341	2.146	2.763	3.296	4.062	8.081	98	100
	Stem Exclusion	11.120	100	1.823	2.519	3.166	3.548	4.045	4.919	8.503	68	
	Understory Reinitiation	59.187	100	3.590	4.361	5.282	6.368	7.798	18.030	32.856	215	
	Shifting Mosaic	2.116	0	13.009	22.605	35.550	43.090	51.874	66.980	96.664	103	
	Fire Maintained Open Canopy	0.000	0	22.438	43.699	65.765	82.057	94.309	111.497	135.855	83	
PROX_AM	Stand Initiation	73.960	100	0.477	1.369	2.517	3.536	4.551	6.421	30.708	143	80
	Stem Exclusion	4.756	47	1.991	3.115	4.068	4.889	6.018	8.453	30.372	109	
	Understory Reinitiation	126.576	100	4.081	5.867	7.633	9.671	13.401	41.408	81.276	368	
	Shifting Mosaic	1.422	0	11.725	29.901	40.906	52.291	63.115	78.494	127.141	93	
	Fire Maintained Open Canopy	0.000	0	20.421	39.590	63.900	78.047	93.564	111.245	134.860	92	
CWED	Stand Initiation	0.514	9	0.231	0.461	0.691	0.952	1.232	1.693	2.058	129	93
	Stem Exclusion	0.151	0	0.523	0.760	0.991	1.157	1.305	1.540	1.734	67	
	Understory Reinitiation	1.613	100	0.428	0.499	0.555	0.605	0.668	0.792	0.936	48	
	Shifting Mosaic	0.002	0	0.134	0.336	0.555	0.807	1.018	1.356	1.638	127	
	Fire Maintained Open Canopy	0.000	0	0.747	1.080	1.518	1.812	2.155	2.611	3.082	84	
TECI	Stand Initiation	32.521	0	42.669	43.943	44.614	45.184	45.677	46.337	46.890	5	100
	Stem Exclusion	30.152	100	28.247	28.601	28.849	29.012	29.149	29.375	29.555	3	
	Understory Reinitiation	21.518	100	6.853	7.505	8.553	9.378	10.579	14.167	20.099	71	
	Shifting Mosaic	27.647	100	7.855	9.269	11.376	13.137	14.874	18.201	27.352	68	
	Fire Maintained Open Canopy			16.011	17.433	19.172	20.513	22.018	24.666	29.906	35	
CLUMPY	Stand Initiation	0.860	100	0.531	0.564	0.592	0.610	0.625	0.647	0.674	14	75
	Stem Exclusion	0.931	100	0.530	0.576	0.596	0.611	0.624	0.646	0.674	11	
	Understory Reinitiation	0.916	100	0.566	0.595	0.615	0.628	0.649	0.761	0.825	26	
	Shifting Mosaic	0.788	35	0.746	0.768	0.783	0.793	0.801	0.831	0.854	8	
	Fire Maintained Open Canopy			0.769	0.788	0.799	0.806	0.812	0.827	0.861	5	
IJI	Stand Initiation	40.364	8	36.731	39.535	42.754	45.846	48.302	50.220	53.251	23	92
	Stem Exclusion	67.395	100	38.721	41.108	43.705	45.826	47.526	49.135	52.105	18	
	Understory Reinitiation	69.803	100	44.154	45.790	47.539	48.636	49.845	58.296	67.975	26	

Shifting Mosaic	36.575	0	55.370	57.583	60.112	61.993	63.616	68.350	71.089	17
Fire Maintained Open Canopy			57.644	59.496	60.977	61.964	63.017	64.624	68.439	8
Summary Indices⁶:										
<i>Seral-Stage Departure Index</i>										94
<i>Class Configuration Departure Index</i>										94
<i>Cover Type Departure Index</i>										94

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.