

Table. Range of variation in landscape structure for Warm Dry Mixed-Conifer 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	0.757	100	0.068	0.143	0.214	0.283	0.376	0.519	0.644	133	100
	Stem Exclusion	1.905	100	0.421	0.532	0.649	0.724	0.805	0.901	1.055	51	
	Understory Reinitiation	3.954	100	0.778	0.857	0.949	1.032	1.153	1.310	1.514	44	
	Shifting Mosaic	0.154	0	0.443	0.704	1.023	1.532	1.923	2.452	3.041	114	
Fire Maintained Open Canopy	0.000	0	1.696	2.171	2.761	3.149	3.641	4.044	4.318	59		
<i>Class Configuration</i> ⁵												
PD	Stand Initiation	0.242	3	0.153	0.271	0.399	0.504	0.662	0.884	1.224	122	98
	Stem Exclusion	0.073	0	0.847	1.034	1.215	1.344	1.450	1.643	2.148	45	
	Understory Reinitiation	0.212	0	0.678	0.972	1.515	1.634	1.757	1.942	2.321	59	
	Shifting Mosaic	0.003	0	0.222	0.349	0.507	0.624	0.737	0.897	1.013	88	
Fire Maintained Open Canopy	0.000	0	0.531	0.620	0.688	0.732	0.777	0.834	0.895	29		
ED	Stand Initiation	2.112	65	0.488	0.931	1.386	1.786	2.394	3.217	4.138	128	71
	Stem Exclusion	2.580	0	2.788	3.592	4.300	4.736	5.179	5.688	6.385	44	
	Understory Reinitiation	5.434	12	3.949	4.972	5.743	6.333	6.855	7.643	8.797	42	
	Shifting Mosaic	0.154	0	1.473	2.269	3.638	5.124	6.309	8.307	9.503	118	
Fire Maintained Open Canopy	0.000	0	5.454	6.829	8.369	9.420	10.501	11.556	13.379	50		
AREA_MN	Stand Initiation	3.132	100	0.368	0.439	0.506	0.559	0.618	0.695	0.846	46	100
	Stem Exclusion	26.269	100	0.314	0.426	0.497	0.542	0.591	0.677	0.784	47	
	Understory Reinitiation	18.642	100	0.472	0.526	0.579	0.617	0.687	1.202	1.781	109	
	Shifting Mosaic	59.320	100	1.240	1.729	2.066	2.396	2.687	3.166	4.217	60	
Fire Maintained Open Canopy	0.000	0	2.643	3.294	3.858	4.321	4.782	5.408	6.803	49		
AREA_AM	Stand Initiation	47.410	100	2.282	2.974	4.131	5.101	6.954	12.148	19.800	180	100
	Stem Exclusion	460.136	100	2.828	3.656	4.889	5.826	7.485	10.539	12.624	118	
	Understory Reinitiation	196.911	100	3.898	4.490	5.628	7.226	10.033	30.384	119.823	358	
	Shifting Mosaic	265.818	100	21.733	27.332	35.341	43.868	54.628	73.083	100.455	104	
Fire Maintained Open Canopy	0.000	0	41.711	57.884	80.140	94.590	113.132	139.763	200.408	87		
GYRATE_AM	Stand Initiation	338.033	100	63.030	72.832	85.511	95.428	108.042	133.905	161.467	64	100

	Stem Exclusion	1098.178	100	72.207	81.613	93.370	100.162	110.672	125.296	139.677	44	
	Understory Reinitiation	685.136	100	83.826	90.755	101.276	110.615	127.490	248.886	510.103	143	
	Shifting Mosaic	949.010	100	222.164	248.062	280.470	314.015	355.260	399.307	451.456	48	
	Fire Maintained Open Canopy	0.000	0	290.115	341.885	419.396	457.042	502.972	574.592	665.586	51	
SHAPE_MN	Stand Initiation	1.347	100	1.183	1.215	1.227	1.238	1.248	1.259	1.273	4	100
	Stem Exclusion	1.768	100	1.193	1.216	1.231	1.241	1.250	1.263	1.282	4	
	Understory Reinitiation	1.629	100	1.235	1.245	1.255	1.263	1.274	1.288	1.300	3	
	Shifting Mosaic	1.934	100	1.209	1.271	1.324	1.364	1.389	1.420	1.456	11	
	Fire Maintained Open Canopy			1.429	1.449	1.479	1.500	1.520	1.541	1.581	6	
SHAPE_AM	Stand Initiation	3.098	100	1.755	1.863	1.963	2.064	2.179	2.386	2.769	25	72
	Stem Exclusion	4.671	100	1.922	2.008	2.079	2.152	2.241	2.395	2.550	18	
	Understory Reinitiation	3.235	97	2.000	2.095	2.211	2.295	2.471	3.154	4.524	46	
	Shifting Mosaic	3.443	36	2.899	3.047	3.344	3.631	3.968	4.400	4.826	37	
	Fire Maintained Open Canopy			3.191	3.848	4.404	4.725	5.076	5.673	6.347	39	
CPLAND	Stand Initiation	0.509	100	0.007	0.020	0.036	0.053	0.070	0.108	0.143	166	100
	Stem Exclusion	1.722	100	0.384	0.490	0.597	0.668	0.740	0.830	0.986	51	
	Understory Reinitiation	3.174	100	0.569	0.641	0.725	0.805	0.915	1.064	1.232	53	
	Shifting Mosaic	0.127	0	0.345	0.536	0.799	1.190	1.502	1.979	2.411	121	
	Fire Maintained Open Canopy	0.000	0	1.316	1.656	2.071	2.400	2.750	3.084	3.323	60	
CORE_MN	Stand Initiation	2.107	100	0.034	0.060	0.080	0.102	0.125	0.169	0.237	106	100
	Stem Exclusion	23.741	100	0.291	0.392	0.458	0.500	0.543	0.625	0.730	47	
	Understory Reinitiation	14.965	100	0.316	0.399	0.441	0.483	0.548	0.973	1.447	119	
	Shifting Mosaic	48.906	100	0.911	1.263	1.609	1.894	2.134	2.556	3.501	68	
	Fire Maintained Open Canopy	0.000	0	1.930	2.512	2.903	3.271	3.621	4.104	5.436	49	
CORE_AM	Stand Initiation	35.804	100	0.492	0.752	1.235	1.756	2.733	5.614	11.329	277	100
	Stem Exclusion	433.345	100	2.691	3.459	4.657	5.552	7.138	10.077	12.145	119	
	Understory Reinitiation	167.289	100	3.127	3.719	4.722	6.172	8.615	25.638	97.720	355	
	Shifting Mosaic	225.502	100	16.351	23.368	29.902	37.765	47.033	63.546	92.092	106	
	Fire Maintained Open Canopy	0.000	0	32.386	47.577	65.107	76.915	91.534	111.544	160.348	83	
CAI_MN	Stand Initiation	28.593	100	1.343	2.020	2.534	2.960	3.448	4.225	5.717	75	80
	Stem Exclusion	82.992	0	83.103	85.462	86.875	87.825	88.590	89.740	90.445	5	
	Understory Reinitiation	36.737	0	52.582	58.684	64.100	67.829	70.967	74.228	77.523	23	
	Shifting Mosaic	62.451	71	42.179	48.139	55.738	59.813	63.053	66.547	70.576	31	
	Fire Maintained Open Canopy	0.000	0	42.161	48.236	54.327	58.599	61.718	66.322	72.372	31	

CAI_AM	Stand Initiation	67.285	100	8.806	13.127	15.565	18.187	20.617	24.321	28.048	62	71
	Stem Exclusion	90.379	1	89.759	91.026	91.711	92.193	92.655	93.149	93.559	2	
	Understory Reinitiation	80.277	72	66.926	71.463	75.566	78.287	80.455	83.300	85.361	15	
	Shifting Mosaic	82.444	90	61.440	70.742	76.395	78.939	81.136	83.284	86.944	16	
	Fire Maintained Open Canopy	0.000	0	65.258	70.410	73.785	75.974	78.140	80.468	84.117	13	
PROX_MN	Stand Initiation	40.510	100	0.446	1.032	1.684	2.106	2.691	3.413	4.375	113	100
	Stem Exclusion	213.121	100	2.435	2.734	3.315	3.765	4.251	4.958	6.298	59	
	Understory Reinitiation	108.258	100	3.545	4.213	4.845	5.666	7.154	19.389	47.980	268	
	Shifting Mosaic	10.666	0	12.013	20.620	30.971	39.047	51.669	66.956	83.933	119	
	Fire Maintained Open Canopy	0.000	0	35.665	58.445	87.254	110.799	143.513	184.631	236.537	114	
PROX_AM	Stand Initiation	61.458	100	0.469	1.120	1.972	2.592	3.479	5.355	12.053	163	100
	Stem Exclusion	50.167	100	2.788	3.410	4.370	5.100	6.062	8.321	10.577	96	
	Understory Reinitiation	118.428	100	4.182	5.262	6.360	7.823	10.372	43.671	121.129	491	
	Shifting Mosaic	7.457	0	17.490	25.891	41.738	54.025	75.218	109.669	214.515	155	
	Fire Maintained Open Canopy	0.000	0	33.744	61.716	117.319	167.197	220.247	297.156	448.259	141	
CWED	Stand Initiation	0.582	37	0.180	0.340	0.511	0.663	0.876	1.187	1.551	128	80
	Stem Exclusion	0.549	0	0.579	0.743	0.892	0.976	1.069	1.171	1.313	44	
	Understory Reinitiation	1.319	100	0.378	0.451	0.508	0.552	0.610	0.707	0.828	46	
	Shifting Mosaic	0.041	0	0.199	0.323	0.495	0.713	0.876	1.164	1.493	118	
	Fire Maintained Open Canopy	0.000	0	0.767	1.038	1.333	1.562	1.821	2.145	2.471	71	
TECI	Stand Initiation	27.524	0	35.567	35.945	36.483	36.829	37.166	37.652	38.205	5	100
	Stem Exclusion	21.080	100	20.368	20.450	20.551	20.631	20.703	20.835	21.072	2	
	Understory Reinitiation	24.046	100	6.970	7.565	8.149	8.681	9.372	11.731	14.788	48	
	Shifting Mosaic	25.994	100	9.261	11.162	12.442	13.647	15.039	17.279	22.576	45	
	Fire Maintained Open Canopy			12.339	14.283	15.547	16.582	17.699	19.648	21.744	32	
CLUMPY	Stand Initiation	0.828	100	0.493	0.553	0.584	0.605	0.626	0.650	0.683	16	100
	Stem Exclusion	0.916	100	0.471	0.542	0.576	0.593	0.609	0.635	0.651	16	
	Understory Reinitiation	0.912	100	0.546	0.570	0.596	0.607	0.628	0.737	0.785	28	
	Shifting Mosaic	0.947	100	0.740	0.761	0.775	0.786	0.796	0.817	0.843	7	
	Fire Maintained Open Canopy			0.773	0.792	0.802	0.809	0.815	0.827	0.853	4	
IJI	Stand Initiation	42.298	21	36.594	39.020	42.764	46.050	48.445	50.422	52.257	25	54
	Stem Exclusion	70.179	100	36.817	41.957	44.348	46.138	47.576	49.072	51.465	15	
	Understory Reinitiation	68.289	100	41.034	44.894	47.203	48.352	49.508	54.666	61.523	20	

Shifting Mosaic	63.106	41	56.850	60.221	62.184	63.502	64.997	68.401	71.460	13
Fire Maintained Open Canopy			56.670	59.525	60.958	61.864	62.732	64.618	66.733	8
Summary Indices⁶:										
<i>Seral-Stage Departure Index</i>										100
<i>Class Configuration Departure Index</i>										90
<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 = 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.