

Table. Range of variation in landscape structure for Warm Dry Mixed-Conifer Forest (49,237 ha) under the simulated HRV disturbance scenario on the 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	0.283	64	0.071	0.131	0.206	0.258	0.307	0.390	0.477	101	80
	Stem Exclusion	1.540	100	0.404	0.493	0.558	0.613	0.668	0.742	0.819	41	
	Understory Reinitiation	3.841	100	0.619	0.731	0.805	0.861	0.925	1.008	1.092	32	
	Shifting Mosaic	0.145	0	0.543	0.799	1.075	1.339	1.634	2.075	2.333	95	
	Fire Maintained Open Canopy	0.000	0	1.654	1.980	2.425	2.723	3.033	3.297	3.695	48	
<i>Class Configuration⁵</i>												
PD	Stand Initiation	0.090	0	0.148	0.256	0.384	0.460	0.564	0.717	0.868	100	100
	Stem Exclusion	0.053	0	0.852	0.949	1.073	1.167	1.261	1.419	1.687	40	
	Understory Reinitiation	0.135	0	0.560	0.792	1.345	1.449	1.556	1.694	1.937	62	
	Shifting Mosaic	0.002	0	0.249	0.376	0.509	0.582	0.654	0.765	0.823	67	
	Fire Maintained Open Canopy	0.000	0	0.446	0.537	0.602	0.649	0.681	0.715	0.735	27	
ED	Stand Initiation	0.782	3	0.468	0.865	1.320	1.641	1.972	2.483	3.018	99	83
	Stem Exclusion	1.975	0	2.902	3.304	3.694	4.024	4.356	4.774	5.364	37	
	Understory Reinitiation	4.866	18	2.727	3.673	5.013	5.409	5.845	6.435	7.281	51	
	Shifting Mosaic	0.168	0	1.579	2.759	3.818	4.632	5.591	6.920	7.676	90	
	Fire Maintained Open Canopy	0.000	0	5.462	6.399	7.436	8.208	8.955	9.660	10.204	40	
AREA_MN	Stand Initiation	3.161	100	0.378	0.434	0.498	0.539	0.590	0.656	0.725	41	100
	Stem Exclusion	29.198	100	0.336	0.414	0.485	0.529	0.570	0.628	0.757	40	
	Understory Reinitiation	28.434	100	0.480	0.525	0.562	0.595	0.633	0.941	1.748	70	
	Shifting Mosaic	64.523	100	1.491	1.777	2.022	2.313	2.572	3.254	3.966	64	
	Fire Maintained Open Canopy	0.000	0	3.051	3.452	3.856	4.194	4.586	5.264	7.058	43	
AREA_AM	Stand Initiation	46.727	100	2.756	3.522	4.671	5.699	7.256	11.711	20.551	144	100
	Stem Exclusion	632.398	100	3.167	4.273	5.491	6.302	7.626	9.747	12.705	87	
	Understory Reinitiation	311.466	100	4.358	5.246	6.058	7.290	9.463	24.913	163.363	270	
	Shifting Mosaic	213.224	100	23.000	27.103	37.321	45.911	56.505	74.064	127.477	102	
	Fire Maintained Open Canopy	0.000	0	45.509	67.748	87.569	101.916	118.972	158.618	227.900	89	
GYRATE_AM	Stand Initiation	334.374	100	67.399	79.713	89.195	98.179	107.724	129.478	168.242	51	100
	Stem Exclusion	1134.552	100	73.193	85.886	95.326	102.265	110.046	124.325	143.008	38	

	Understory Reinitiation	829.159	100	87.741	96.313	102.943	111.225	123.183	212.701	530.045	105	
	Shifting Mosaic	867.081	100	210.664	246.975	284.935	313.447	347.217	388.408	475.809	45	
	Fire Maintained Open Canopy	0.000	0	320.638	376.033	418.285	459.730	501.462	569.166	613.832	42	
SHAPE_MN	Stand Initiation	1.343	100	1.189	1.212	1.226	1.234	1.242	1.252	1.267	3	100
	Stem Exclusion	1.847	100	1.195	1.213	1.228	1.238	1.246	1.255	1.264	3	
	Understory Reinitiation	1.812	100	1.233	1.242	1.251	1.258	1.264	1.276	1.303	3	
	Shifting Mosaic	2.259	100	1.264	1.304	1.340	1.363	1.385	1.410	1.426	8	
	Fire Maintained Open Canopy			1.436	1.473	1.495	1.509	1.523	1.540	1.562	4	
SHAPE_AM	Stand Initiation	3.056	100	1.803	1.907	2.009	2.082	2.163	2.340	2.544	21	73
	Stem Exclusion	4.199	100	1.967	2.037	2.116	2.171	2.225	2.336	2.421	14	
	Understory Reinitiation	3.395	98	2.030	2.140	2.229	2.294	2.405	2.799	4.486	29	
	Shifting Mosaic	3.635	54	2.751	3.084	3.410	3.609	3.850	4.246	4.594	32	
	Fire Maintained Open Canopy			3.613	4.074	4.408	4.798	5.083	5.574	6.233	31	
CPLAND	Stand Initiation	0.192	100	0.011	0.021	0.036	0.046	0.059	0.082	0.103	132	100
	Stem Exclusion	1.365	100	0.368	0.445	0.505	0.556	0.608	0.676	0.755	41	
	Understory Reinitiation	3.193	100	0.466	0.547	0.603	0.654	0.703	0.788	0.866	37	
	Shifting Mosaic	0.114	0	0.403	0.590	0.793	1.025	1.228	1.609	1.813	99	
	Fire Maintained Open Canopy	0.000	0	1.252	1.500	1.808	2.003	2.205	2.434	2.715	47	
CORE_MN	Stand Initiation	2.142	100	0.039	0.060	0.085	0.101	0.121	0.151	0.188	90	100
	Stem Exclusion	25.886	100	0.304	0.375	0.442	0.480	0.517	0.572	0.691	41	
	Understory Reinitiation	23.636	100	0.350	0.391	0.421	0.448	0.494	0.733	1.342	76	
	Shifting Mosaic	50.783	100	1.058	1.299	1.526	1.747	1.987	2.458	3.235	66	
	Fire Maintained Open Canopy	0.000	0	2.261	2.524	2.830	3.099	3.397	3.948	5.173	46	
CORE_AM	Stand Initiation	35.364	100	0.674	1.043	1.576	2.104	2.928	5.681	11.214	220	100
	Stem Exclusion	594.869	100	2.937	4.020	5.151	5.965	7.283	9.175	12.041	86	
	Understory Reinitiation	283.100	100	3.574	4.224	5.085	6.151	8.168	21.310	134.167	278	
	Shifting Mosaic	168.756	100	18.552	22.316	31.258	38.108	48.970	64.156	114.763	110	
	Fire Maintained Open Canopy	0.000	0	33.345	55.173	70.903	83.223	97.054	128.805	189.997	88	
CAI_MN	Stand Initiation	28.397	100	1.379	1.970	2.570	2.987	3.343	3.921	4.631	65	100
	Stem Exclusion	78.058	0	82.449	84.402	85.394	86.003	86.766	87.760	89.353	4	
	Understory Reinitiation	50.712	0	54.747	58.934	62.817	65.317	67.745	71.294	73.922	19	
	Shifting Mosaic	66.556	100	42.428	47.935	51.854	54.532	57.333	61.205	64.619	24	
	Fire Maintained Open Canopy	0.000	0	43.754	48.201	52.213	55.350	58.274	62.768	66.108	26	

CAI_AM	Stand Initiation	67.770	100	9.931	13.542	16.835	18.451	20.504	23.489	26.241	54	87
	Stem Exclusion	88.657	0	89.075	89.828	90.483	90.912	91.237	91.725	92.663	2	
	Understory Reinitiation	83.124	100	67.107	71.596	73.923	76.038	77.666	80.418	82.421	12	
	Shifting Mosaic	78.705	83	64.564	70.388	73.642	76.038	78.137	80.707	83.506	14	
	Fire Maintained Open Canopy	0.000	0	66.375	69.443	72.027	74.051	75.646	78.279	80.331	12	
PROX_MN	Stand Initiation	39.764	100	0.599	1.323	1.790	2.195	2.606	3.291	5.048	90	100
	Stem Exclusion	116.454	100	2.680	2.954	3.344	3.722	4.049	4.544	5.177	43	
	Understory Reinitiation	106.147	100	3.642	4.217	4.863	5.421	6.299	11.121	45.669	127	
	Shifting Mosaic	5.318	0	15.519	21.057	30.825	37.991	47.983	61.396	93.815	106	
	Fire Maintained Open Canopy	0.000	0	42.019	68.128	90.359	114.652	135.354	169.958	214.257	89	
PROX_AM	Stand Initiation	59.774	100	0.910	1.460	2.290	2.887	3.724	5.495	15.137	140	100
	Stem Exclusion	34.986	100	3.324	3.955	4.732	5.320	6.038	7.230	10.321	62	
	Understory Reinitiation	214.646	100	4.341	5.500	6.835	8.017	9.737	30.808	113.078	316	
	Shifting Mosaic	3.004	0	19.577	30.920	46.416	58.435	74.894	99.584	150.634	118	
	Fire Maintained Open Canopy	0.000	0	53.565	82.332	130.829	169.018	199.822	262.179	345.457	106	
CWED	Stand Initiation	0.215	1	0.172	0.318	0.485	0.602	0.721	0.906	1.115	98	99
	Stem Exclusion	0.458	0	0.602	0.688	0.770	0.838	0.907	0.991	1.106	36	
	Understory Reinitiation	1.121	100	0.344	0.410	0.456	0.495	0.532	0.592	0.656	37	
	Shifting Mosaic	0.051	0	0.258	0.430	0.560	0.695	0.850	1.013	1.216	84	
	Fire Maintained Open Canopy	0.000	0	0.824	1.031	1.269	1.452	1.631	1.836	2.059	55	
TECI	Stand Initiation	27.501	0	35.496	36.039	36.350	36.644	36.924	37.304	37.800	3	100
	Stem Exclusion	22.981	100	20.467	20.629	20.712	20.779	20.848	20.957	21.079	2	
	Understory Reinitiation	22.858	100	7.717	8.216	8.732	9.133	9.658	11.441	14.844	35	
	Shifting Mosaic	30.049	100	10.978	12.711	14.038	15.141	16.170	18.029	21.795	35	
	Fire Maintained Open Canopy			14.116	15.503	16.689	17.592	18.463	20.181	22.793	27	
CLUMPY	Stand Initiation	0.831	100	0.503	0.549	0.582	0.600	0.618	0.640	0.664	15	100
	Stem Exclusion	0.920	100	0.487	0.538	0.572	0.589	0.603	0.623	0.656	14	
	Understory Reinitiation	0.918	100	0.551	0.573	0.591	0.601	0.616	0.710	0.783	23	
	Shifting Mosaic	0.933	100	0.745	0.758	0.772	0.779	0.788	0.821	0.840	8	
	Fire Maintained Open Canopy			0.781	0.790	0.800	0.805	0.811	0.832	0.850	5	
IJI	Stand Initiation	42.903	14	35.078	40.597	44.600	46.781	48.909	50.610	52.299	21	77
	Stem Exclusion	74.503	100	41.809	43.671	45.734	47.023	48.026	49.260	50.671	12	
	Understory Reinitiation	73.620	100	46.463	47.043	48.329	49.307	50.231	55.438	66.579	17	
	Shifting Mosaic	70.551	91	60.058	62.981	64.631	66.121	68.047	71.628	74.652	13	

Summary Indices⁶:

<i>Seral-Stage Departure Index</i>	80
<i>Class Configuration Departure Index</i>	96
<i>Cover Type Departure Index</i>	88

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 95 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 25-75 percentile range of variation, where a 0 represents no departure (i.e., within the 25-75 percentiles of variation) and 100 represents complete departure (i.e., outside the 0-100 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.

