

Table. Range of variation in landscape structure for Spruce-Fir 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 <sup>1</sup>		Percentiles of Simulated Distribution						HRV Departure		
		Metric Value	Percentile of HRV	0	5	25	50	75	95	100	CV <sup>2</sup>	Index <sup>3</sup>
<i>Seral Stage Composition</i> <sup>4</sup>												
PLAND	Stand Initiation	1.297	2	1.054	1.554	2.487	3.275	4.792	7.271	9.274	175	91
	Stem Exclusion	7.023	93	1.522	2.400	3.496	4.687	5.771	7.414	9.680	107	
	Understory Reinitiation	12.585	100	2.162	2.864	4.020	5.701	7.190	9.741	12.502	121	
	Shifting Mosaic	0.229	0	2.479	3.909	5.130	6.676	8.338	9.792	11.421	88	
<i>Class Configuration</i> <sup>5</sup>												
PD	Stand Initiation	0.101	0	0.325	0.429	0.515	0.589	0.676	0.844	1.000	70	100
	Stem Exclusion	0.075	0	0.503	0.953	1.286	1.630	2.235	3.744	5.161	171	
	Understory Reinitiation	0.116	0	1.103	1.316	1.631	1.927	2.242	2.918	3.594	83	
	Shifting Mosaic	0.002	0	0.796	1.194	1.742	1.945	2.195	2.627	3.008	74	
ED	Stand Initiation	2.003	0	2.771	3.614	5.208	6.527	8.316	11.773	14.938	125	96
	Stem Exclusion	6.018	0	5.424	7.224	9.765	12.115	14.217	18.865	26.056	96	
	Understory Reinitiation	9.718	4	7.150	9.898	12.338	15.493	19.634	24.852	27.999	97	
	Shifting Mosaic	0.244	0	7.360	10.047	11.931	13.398	14.580	17.233	19.679	54	
AREA_MN	Stand Initiation	12.794	99	2.010	3.276	4.455	5.577	7.375	10.588	13.847	131	99
	Stem Exclusion	93.889	100	0.628	0.898	1.795	2.829	3.977	6.324	10.275	192	
	Understory Reinitiation	108.262	100	0.993	1.422	2.031	2.880	4.025	5.848	8.791	154	
	Shifting Mosaic	117.938	100	1.483	1.836	2.439	3.339	4.775	6.926	11.482	152	
AREA_AM	Stand Initiation	82.694	1	48.876	115.906	239.215	339.592	551.550	1152.413	1939.335	305	72
	Stem Exclusion	1900.969	100	39.574	108.513	197.868	310.626	487.599	931.859	1779.937	265	
	Understory Reinitiation	1456.337	98	73.939	140.942	231.830	373.726	635.243	1202.552	1819.283	284	
	Shifting Mosaic	454.682	31	184.515	288.852	417.802	665.595	963.854	1201.289	1926.291	137	
GYRATE_AI	Stand Initiation	367.009	1	295.813	479.813	680.966	807.755	1052.704	1436.011	2184.571	118	74
	Stem Exclusion	1959.721	100	245.389	432.489	606.301	765.564	957.671	1304.244	2044.884	114	
	Understory Reinitiation	1931.064	100	339.889	473.058	662.813	828.300	1081.233	1526.643	1856.915	127	
	Shifting Mosaic	1272.634	65	567.400	731.587	921.229	1168.543	1348.824	1697.209	1906.480	83	
SHAPE_MN	Stand Initiation	1.559	100	1.281	1.317	1.346	1.371	1.392	1.420	1.466	7	100

	Stem Exclusion	1.987	100	1.107	1.179	1.250	1.291	1.330	1.382	1.480	16	
	Understory Reinitiation	1.981	100	1.254	1.281	1.312	1.341	1.380	1.466	1.580	14	
	Shifting Mosaic	2.437	100	1.213	1.225	1.241	1.254	1.277	1.333	1.594	9	
SHAPE_AM	Stand Initiation	2.273	0	2.780	3.686	4.397	4.928	5.754	7.284	8.540	73	26
	Stem Exclusion	6.271	76	3.428	3.916	4.685	5.400	6.246	8.126	18.840	78	
	Understory Reinitiation	5.476	28	3.151	4.332	5.277	6.406	7.972	10.936	18.748	103	
	Shifting Mosaic	5.344	44	3.690	3.988	4.910	5.501	6.154	7.669	9.989	67	
CPLAND	Stand Initiation	0.995	6	0.653	0.972	1.732	2.286	3.585	5.655	7.488	205	86
	Stem Exclusion	6.154	92	1.349	2.147	3.087	4.187	5.211	6.604	8.464	106	
	Understory Reinitiation	10.297	100	1.593	2.177	3.055	4.463	5.735	7.891	9.884	128	
	Shifting Mosaic	0.181	0	1.820	3.019	3.921	5.132	6.413	7.758	9.184	92	
CORE_MN	Stand Initiation	9.817	99	1.106	2.131	2.989	3.947	5.523	8.141	11.472	152	99
	Stem Exclusion	82.268	100	0.546	0.799	1.581	2.520	3.517	5.632	9.086	192	
	Understory Reinitiation	88.579	100	0.726	1.068	1.504	2.238	3.189	4.766	6.950	165	
	Shifting Mosaic	93.260	100	1.053	1.360	1.894	2.601	3.714	5.501	9.312	159	
CORE_AM	Stand Initiation	70.425	3	34.986	86.187	185.004	271.571	445.099	969.233	1650.322	325	70
	Stem Exclusion	1704.423	100	34.982	101.840	182.287	286.129	449.631	834.092	1614.863	256	
	Understory Reinitiation	1225.506	98	61.687	116.205	200.200	313.291	548.252	996.279	1517.547	281	
	Shifting Mosaic	377.463	31	153.379	232.650	343.912	552.798	795.104	1024.244	1569.509	143	
CAI_MN	Stand Initiation	49.587	100	8.051	10.172	13.436	17.150	20.593	27.495	39.217	101	41
	Stem Exclusion	74.329	30	64.121	70.516	73.585	76.960	80.089	83.391	87.876	17	
	Understory Reinitiation	56.958	70	30.871	38.170	46.557	52.669	58.011	63.790	70.471	49	
	Shifting Mosaic	66.127	91	26.402	39.863	51.567	58.179	62.699	67.949	70.806	48	
CAI_AM	Stand Initiation	76.729	86	54.750	62.570	67.222	70.545	74.293	78.625	82.851	23	43
	Stem Exclusion	87.622	12	85.094	86.869	88.253	89.185	89.977	90.954	92.513	5	
	Understory Reinitiation	81.819	90	68.797	72.995	76.207	78.671	80.348	82.476	83.601	12	
	Shifting Mosaic	79.076	79	67.970	72.969	75.863	77.748	78.867	80.504	82.203	10	
PROX_MN	Stand Initiation	12.386	0	12.380	24.068	59.633	105.842	212.600	399.170	1014.916	354	99
	Stem Exclusion	891.348	100	12.765	22.378	51.116	92.039	153.661	373.364	729.298	381	
	Understory Reinitiation	678.244	99	19.898	30.907	70.421	128.554	226.060	408.693	744.933	294	
	Shifting Mosaic	12.915	0	37.312	59.152	90.378	139.298	205.604	387.222	565.102	236	
PROX_AM	Stand Initiation	28.301	4	8.883	31.554	90.589	154.400	319.644	1048.894	2292.109	659	59

	Stem Exclusion	547.645	87	22.713	61.469	117.295	220.721	376.484	902.093	3678.481	381	
	Understory Reinitiation	697.970	75	42.508	77.341	210.858	393.844	696.125	1290.830	2637.735	308	
	Shifting Mosaic	18.061	0	88.587	135.578	294.187	512.581	641.641	848.844	1642.225	139	
CWED	Stand Initiation	0.642	0	0.904	1.214	1.713	2.099	2.654	3.656	4.736	116	63
	Stem Exclusion	1.937	12	1.301	1.659	2.260	2.815	3.277	4.311	5.906	94	
	Understory Reinitiation	3.558	66	1.216	1.927	2.565	3.181	3.865	5.182	5.908	102	
	Shifting Mosaic	0.077	0	1.692	1.919	2.699	3.125	3.555	3.996	4.204	66	
TECI	Stand Initiation	31.635	31	27.478	29.614	31.386	32.293	33.083	34.256	35.076	14	75
	Stem Exclusion	31.914	100	21.124	21.690	22.384	22.905	23.629	24.823	26.339	14	
	Understory Reinitiation	36.124	100	13.233	16.678	18.763	20.325	21.924	23.887	26.540	35	
	Shifting Mosaic	31.581	100	14.189	16.540	20.499	23.090	25.433	28.419	30.819	51	
CLUMPY	Stand Initiation	0.905	99	0.802	0.846	0.863	0.876	0.889	0.900	0.914	6	99
	Stem Exclusion	0.944	100	0.576	0.696	0.799	0.839	0.859	0.881	0.903	22	
	Understory Reinitiation	0.945	100	0.645	0.731	0.782	0.815	0.840	0.865	0.887	16	
	Shifting Mosaic	0.942	100	0.776	0.810	0.843	0.864	0.883	0.901	0.913	11	
IJI	Stand Initiation	55.150	24	48.046	51.914	55.219	57.075	58.696	61.334	64.098	17	51
	Stem Exclusion	61.911	100	25.782	32.175	41.328	48.416	51.234	54.873	57.340	47	
	Understory Reinitiation	61.630	100	28.347	37.449	43.826	46.407	48.819	51.246	54.106	30	
	Shifting Mosaic	49.922	37	39.742	42.993	48.426	51.255	53.533	56.546	59.788	26	

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**Summary Indices<sup>6</sup>:**

<i>Seral-Stage Departure Index</i>	91
<i>Class Configuration Departure Index</i>	75
<i>Cover Type Departure Index</i>	83

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<sup>1</sup>Some 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.

<sup>2</sup>CV = coefficient of variation in the simulated distribution, computed as the difference between the 5 and 95<sup>th</sup> percentiles divided by the median and multiplied by 100 to convert to a percentage. n/d = not defined (division by zero).

<sup>3</sup>HRV 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<sup>th</sup> percentile range of variation, where a 0 represents no departure (i.e., within the 25-75<sup>th</sup> percentiles of variation) and 100 represents complete departure (i.e., outside the 0-100<sup>th</sup> percentiles of variation).

<sup>4</sup>Landscape 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.

<sup>5</sup>Landscape 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.

<sup>6</sup>Seral-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.