

Table. Range of variation in landscape structure for Spruce-Fir-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 <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<sup>4</sup></i>												
PLAND	Stand Initiation	0.201	24	0.008	0.040	0.208	0.480	1.081	2.563	4.535	526	69
	Stem Exclusion	0.672	7	0.210	0.619	1.247	1.999	2.916	4.054	5.237	172	
	Understory Reinitiation	8.830	100	1.958	2.737	3.663	4.326	5.343	6.127	7.640	78	
	Shifting Mosaic	0.017	0	1.105	1.364	1.721	2.384	2.829	3.758	4.658	100	
<i>Class Configuration<sup>5</sup></i>												
PD	Stand Initiation	0.077	30	0.018	0.035	0.072	0.103	0.151	0.271	0.406	228	75
	Stem Exclusion	0.034	0	0.155	0.197	0.279	0.326	0.383	0.514	0.596	97	
	Understory Reinitiation	0.205	0	0.514	0.575	0.704	0.820	0.932	1.107	1.474	65	
	Shifting Mosaic	0.002	0	0.328	0.484	0.820	0.929	1.030	1.191	1.392	76	
ED	Stand Initiation	0.569	26	0.049	0.189	0.538	1.105	2.017	4.474	6.997	388	57
	Stem Exclusion	1.027	0	0.782	1.590	2.763	3.878	5.351	6.715	8.503	132	
	Understory Reinitiation	9.621	83	5.166	6.017	7.157	8.148	9.339	10.491	11.449	55	
	Shifting Mosaic	0.032	0	2.773	4.081	4.910	5.646	6.338	7.548	9.434	61	
AREA_MN	Stand Initiation	2.619	25	0.375	0.993	2.594	4.424	7.046	11.551	15.295	239	75
	Stem Exclusion	19.764	100	1.216	2.557	4.088	5.891	7.957	11.046	14.125	144	
	Understory Reinitiation	43.147	100	1.604	2.905	4.176	5.338	7.040	9.243	14.119	119	
	Shifting Mosaic	8.958	100	1.188	1.412	1.839	2.548	3.064	6.302	8.479	192	
AREA_AM	Stand Initiation	70.593	40	1.069	10.099	47.776	94.578	202.790	430.199	723.941	444	57
	Stem Exclusion	77.829	11	23.640	57.486	124.982	176.075	262.139	405.327	651.977	198	
	Understory Reinitiation	341.970	93	86.886	137.273	186.804	231.143	289.684	348.846	379.356	92	
	Shifting Mosaic	24.110	0	43.190	59.196	105.458	135.233	174.739	225.464	473.594	123	
GYRATE_AI	Stand Initiation	334.407	31	41.764	148.989	308.164	427.530	609.364	886.036	1189.631	172	62
	Stem Exclusion	412.902	13	194.086	340.909	476.976	569.879	705.377	860.618	1180.861	91	
	Understory Reinitiation	857.235	100	387.867	496.708	576.924	645.950	728.790	801.161	832.244	47	
	Shifting Mosaic	222.279	0	278.663	327.950	429.773	497.583	557.427	671.851	1045.638	69	
SHAPE_MN	Stand Initiation	1.284	16	1.114	1.224	1.312	1.377	1.428	1.507	1.583	21	82
	Stem Exclusion	1.783	100	1.232	1.297	1.348	1.390	1.435	1.497	1.573	14	

	Understory Reinitiation	1.871	100	1.212	1.260	1.304	1.343	1.379	1.424	1.498	12	
	Shifting Mosaic	1.562	99	1.198	1.215	1.241	1.265	1.296	1.410	1.739	15	
SHAPE_AM	Stand Initiation	3.180	43	1.298	2.136	2.746	3.393	4.035	5.540	7.930	100	63
	Stem Exclusion	2.362	0	2.302	2.884	3.484	3.838	4.274	4.987	5.911	55	
	Understory Reinitiation	3.382	12	2.743	3.135	3.551	3.797	4.032	4.368	5.211	32	
	Shifting Mosaic	1.904	0	2.413	2.604	2.963	3.209	3.594	4.215	6.090	50	
CPLAND	Stand Initiation	0.102	23	0.001	0.014	0.113	0.285	0.723	1.880	3.291	656	67
	Stem Exclusion	0.511	11	0.111	0.396	0.854	1.435	2.156	3.068	4.088	186	
	Understory Reinitiation	7.311	100	1.405	2.134	2.894	3.497	4.444	5.104	6.564	85	
	Shifting Mosaic	0.013	0	0.729	0.980	1.307	1.858	2.198	2.986	3.787	108	
CORE_MN	Stand Initiation	1.325	24	0.021	0.306	1.451	2.791	4.813	8.347	11.794	288	76
	Stem Exclusion	15.031	100	0.666	1.482	2.837	4.246	5.880	8.454	11.055	164	
	Understory Reinitiation	35.726	100	1.161	2.206	3.313	4.294	5.790	7.811	12.132	131	
	Shifting Mosaic	6.667	100	0.772	1.009	1.437	1.985	2.397	5.116	6.923	207	
CORE_AM	Stand Initiation	45.934	38	0.212	5.099	32.259	64.493	144.637	322.728	595.053	492	52
	Stem Exclusion	66.679	13	16.801	42.619	98.011	143.852	216.134	344.974	560.745	210	
	Understory Reinitiation	303.491	90	75.143	119.987	168.546	208.656	260.254	318.581	341.210	95	
	Shifting Mosaic	18.966	0	31.989	47.051	90.547	117.483	153.779	203.111	433.652	133	
CAI_MN	Stand Initiation	12.386	25	0.561	5.498	12.333	17.733	22.828	33.167	49.664	156	69
	Stem Exclusion	56.826	100	7.828	10.988	15.153	19.622	24.229	37.876	56.527	137	
	Understory Reinitiation	56.627	97	13.095	18.109	27.326	34.318	40.236	54.373	64.823	106	
	Shifting Mosaic	28.952	3	17.435	35.048	45.425	53.952	61.963	69.346	74.403	64	
CAI_AM	Stand Initiation	50.589	22	4.270	30.619	53.002	62.988	69.244	74.795	81.514	70	15
	Stem Exclusion	76.051	86	52.498	59.209	67.622	71.990	74.893	77.741	80.664	26	
	Understory Reinitiation	82.801	76	68.370	74.852	78.281	81.098	82.715	84.833	87.137	12	
	Shifting Mosaic	74.419	26	64.281	69.816	74.286	77.528	79.572	82.008	84.551	16	
PROX_MN	Stand Initiation	30.949	48	0.187	1.893	11.577	32.277	86.799	188.144	327.260	577	31
	Stem Exclusion	30.148	20	5.046	15.765	35.172	71.327	110.035	163.947	276.709	208	
	Understory Reinitiation	190.715	100	20.736	32.003	55.402	76.787	100.270	143.135	186.469	145	
	Shifting Mosaic	21.113	30	10.668	13.672	19.684	28.214	39.240	63.626	121.540	177	
PROX_AM	Stand Initiation	85.385	63	0.046	1.269	10.632	42.502	142.214	327.410	817.224	767	66
	Stem Exclusion	24.325	9	5.927	16.645	66.231	128.664	220.560	341.861	497.712	253	

	Understory Reinitiation	391.428	99	32.287	68.591	132.744	189.915	234.800	306.640	432.683	125	
	Shifting Mosaic	5.589	0	17.536	28.554	54.209	88.127	133.401	261.380	380.023	264	
CWED	Stand Initiation	0.199	28	0.019	0.070	0.191	0.368	0.643	1.382	2.099	356	75
	Stem Exclusion	0.297	1	0.227	0.452	0.778	1.087	1.483	1.910	2.226	134	
	Understory Reinitiation	2.658	100	0.982	1.237	1.440	1.620	1.838	2.134	2.461	55	
	Shifting Mosaic	0.008	0	0.578	0.666	0.811	0.970	1.134	1.419	1.650	78	
TECI	Stand Initiation	34.906	61	24.987	28.337	31.361	33.758	36.466	40.814	46.033	37	49
	Stem Exclusion	28.865	78	24.681	26.062	27.164	27.982	28.774	29.939	30.948	14	
	Understory Reinitiation	27.513	99	13.956	15.911	18.226	19.887	21.524	24.732	30.121	44	
	Shifting Mosaic	24.066	98	8.953	12.850	15.155	17.485	19.556	22.747	28.978	57	
CLUMPY	Stand Initiation	0.831	26	0.574	0.721	0.830	0.863	0.887	0.907	0.917	22	75
	Stem Exclusion	0.909	100	0.766	0.815	0.861	0.877	0.889	0.901	0.908	10	
	Understory Reinitiation	0.927	100	0.783	0.848	0.869	0.879	0.890	0.897	0.906	6	
	Shifting Mosaic	0.916	100	0.764	0.795	0.820	0.847	0.859	0.882	0.898	10	
IJI	Stand Initiation	37.550	0	33.538	49.328	55.983	58.768	60.887	63.479	65.896	24	50
	Stem Exclusion	57.950	25	45.877	52.895	57.974	60.549	62.555	64.560	66.524	19	
	Understory Reinitiation	62.132	92	49.135	54.387	57.291	59.123	60.578	62.963	64.896	15	
	Shifting Mosaic	46.675	16	36.797	44.525	47.526	50.078	52.417	55.176	58.930	21	

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

<i>Seral-Stage Departure Index</i>	69
<i>Class Configuration Departure Index</i>	61
<i>Cover Type Departure Index</i>	65

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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.