

Table. Range of variation in landscape structure for Pure 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	0.068	11	0.008	0.045	0.116	0.199	0.359	0.690	0.825	325	38
	Stem Exclusion	0.167	35	0.027	0.065	0.138	0.220	0.357	0.641	0.895	262	
	Understory Reinitiation	0.647	99	0.052	0.087	0.171	0.249	0.368	0.567	0.683	193	
	Shifting Mosaic	0.527	38	0.221	0.349	0.452	0.599	0.741	0.890	1.011	90	
<i>Class Configuration<sup>5</sup></i>												
PD	Stand Initiation	0.021	7	0.010	0.019	0.032	0.042	0.054	0.073	0.097	128	91
	Stem Exclusion	0.020	1	0.016	0.026	0.040	0.051	0.065	0.091	0.153	126	
	Understory Reinitiation	0.030	1	0.028	0.035	0.051	0.062	0.076	0.101	0.166	106	
	Shifting Mosaic	0.020	0	0.070	0.093	0.106	0.118	0.129	0.163	0.209	60	
ED	Stand Initiation	0.189	11	0.038	0.137	0.289	0.453	0.695	1.135	1.353	220	51
	Stem Exclusion	0.323	23	0.083	0.185	0.330	0.488	0.720	1.134	1.312	195	
	Understory Reinitiation	0.887	87	0.168	0.251	0.410	0.570	0.760	1.034	1.246	137	
	Shifting Mosaic	0.694	2	0.502	0.793	0.985	1.158	1.334	1.554	1.646	66	
AREA_MN	Stand Initiation	3.279	24	0.579	1.680	3.308	4.840	6.850	11.239	15.281	197	65
	Stem Exclusion	8.296	89	0.952	1.808	3.159	4.231	5.865	10.134	15.615	197	
	Understory Reinitiation	21.499	100	1.141	1.855	2.916	3.986	5.390	8.086	10.928	156	
	Shifting Mosaic	26.702	100	2.318	2.916	3.610	5.042	6.428	8.060	10.467	102	
AREA_AM	Stand Initiation	28.344	31	1.742	12.172	26.169	39.504	63.943	107.413	133.086	241	46
	Stem Exclusion	26.964	21	6.702	16.742	28.822	44.429	68.512	107.895	134.447	205	
	Understory Reinitiation	98.574	92	9.282	17.199	32.097	52.294	72.929	106.395	129.104	171	
	Shifting Mosaic	137.521	100	26.463	35.830	49.565	65.156	85.701	103.176	117.892	103	
GYRATE_AI	Stand Initiation	243.905	33	63.819	161.181	228.680	283.460	368.283	487.919	534.589	115	45
	Stem Exclusion	230.950	22	115.439	180.392	237.294	299.626	371.497	492.688	532.591	104	
	Understory Reinitiation	464.761	92	128.592	191.515	252.794	331.953	398.172	484.179	575.523	88	
	Shifting Mosaic	557.246	100	230.513	271.691	326.574	377.848	425.371	469.628	531.231	52	
SHAPE_MN	Stand Initiation	1.423	56	1.159	1.273	1.355	1.412	1.469	1.548	1.641	19	72

	Stem Exclusion	1.508	97	1.166	1.228	1.319	1.368	1.417	1.496	1.617	20	
	Understory Reinitiation	1.733	100	1.180	1.235	1.299	1.337	1.383	1.461	1.544	17	
	Shifting Mosaic	1.730	100	1.221	1.267	1.309	1.344	1.381	1.416	1.492	11	
SHAPE_AM	Stand Initiation	2.315	47	1.439	1.925	2.135	2.347	2.653	3.024	3.678	47	48
	Stem Exclusion	1.857	3	1.746	1.916	2.168	2.355	2.636	2.951	3.707	44	
	Understory Reinitiation	2.295	40	1.649	1.946	2.150	2.372	2.653	3.008	3.733	45	
	Shifting Mosaic	3.035	100	1.900	2.101	2.308	2.417	2.577	2.824	3.031	30	
CPLAND	Stand Initiation	0.051	17	0.002	0.022	0.071	0.131	0.245	0.526	0.667	385	32
	Stem Exclusion	0.122	31	0.021	0.048	0.106	0.177	0.293	0.530	0.741	273	
	Understory Reinitiation	0.545	99	0.038	0.067	0.134	0.198	0.298	0.464	0.574	201	
	Shifting Mosaic	0.424	36	0.174	0.278	0.361	0.484	0.608	0.746	0.860	97	
CORE_MN	Stand Initiation	2.437	34	0.087	0.834	2.065	3.221	4.974	8.583	12.011	241	61
	Stem Exclusion	6.065	86	0.658	1.382	2.513	3.410	4.853	8.402	12.931	206	
	Understory Reinitiation	18.110	100	0.855	1.350	2.248	3.143	4.431	6.644	9.388	168	
	Shifting Mosaic	21.486	100	1.826	2.326	2.884	4.061	5.302	6.744	8.727	109	
CORE_AM	Stand Initiation	23.913	38	0.364	7.451	18.826	30.529	50.692	90.508	111.619	272	49
	Stem Exclusion	21.601	19	4.900	13.493	24.025	38.656	58.543	96.422	121.999	215	
	Understory Reinitiation	89.119	93	7.625	13.468	26.499	44.198	63.139	95.487	122.941	186	
	Shifting Mosaic	107.181	100	22.650	28.584	41.965	56.028	74.155	90.916	96.346	111	
CAI_MN	Stand Initiation	36.367	89	5.512	13.021	19.079	24.623	31.828	39.527	51.550	108	32
	Stem Exclusion	48.653	8	39.464	46.425	53.797	58.927	64.222	70.427	77.851	41	
	Understory Reinitiation	69.008	77	14.992	33.215	50.553	61.001	68.524	75.809	82.816	70	
	Shifting Mosaic	54.946	29	27.183	36.153	52.562	62.014	67.333	75.754	82.835	64	
CAI_AM	Stand Initiation	74.300	80	15.084	47.928	61.519	67.744	73.241	77.463	83.272	44	37
	Stem Exclusion	73.098	4	60.477	73.939	78.196	80.866	82.800	85.651	87.153	14	
	Understory Reinitiation	84.239	85	56.173	69.729	76.287	80.120	82.530	86.742	90.896	21	
	Shifting Mosaic	80.465	34	62.292	75.289	79.429	82.260	83.898	85.581	88.894	13	
PROX_MN	Stand Initiation	6.746	20	0.479	3.043	7.606	13.004	22.956	42.778	66.119	306	5
	Stem Exclusion	6.882	27	1.304	3.243	6.608	10.097	20.783	34.178	62.679	306	
	Understory Reinitiation	5.846	31	1.058	2.414	5.331	10.156	17.527	30.868	50.726	280	
	Shifting Mosaic	16.477	42	3.335	7.833	13.465	19.078	25.147	34.302	50.384	139	
PROX_AM	Stand Initiation	9.544	39	0.106	1.030	5.311	15.529	29.422	93.937	148.004	598	0

	Stem Exclusion	14.945	56	0.326	0.967	4.321	11.721	28.617	79.989	130.997	674	
	Understory Reinitiation	7.498	40	0.284	1.004	4.357	9.981	25.461	83.051	128.066	822	
	Shifting Mosaic	34.475	69	1.987	4.912	13.091	24.331	37.912	62.288	96.282	236	
CWED	Stand Initiation	0.041	5	0.014	0.043	0.089	0.135	0.204	0.320	0.417	205	39
	Stem Exclusion	0.088	32	0.019	0.044	0.078	0.113	0.158	0.252	0.300	183	
	Understory Reinitiation	0.225	90	0.031	0.052	0.085	0.122	0.179	0.251	0.299	162	
	Shifting Mosaic	0.222	22	0.125	0.182	0.228	0.270	0.330	0.376	0.440	72	
TECI	Stand Initiation	21.850	0	22.056	25.434	27.965	30.108	32.049	34.605	39.934	30	79
	Stem Exclusion	27.250	100	18.597	20.299	21.470	22.548	23.373	25.071	27.974	21	
	Understory Reinitiation	25.119	80	15.005	17.547	20.029	22.287	24.546	27.953	35.427	47	
	Shifting Mosaic	31.926	99	17.688	19.699	21.988	23.629	25.358	28.144	34.286	36	
CLUMPY	Stand Initiation	0.840	19	0.609	0.783	0.846	0.868	0.887	0.906	0.918	14	63
	Stem Exclusion	0.888	82	0.736	0.811	0.851	0.867	0.884	0.904	0.917	11	
	Understory Reinitiation	0.918	100	0.767	0.811	0.851	0.870	0.885	0.900	0.912	10	
	Shifting Mosaic	0.923	100	0.840	0.856	0.867	0.881	0.893	0.900	0.904	5	
IJI	Stand Initiation	59.276	9	40.279	57.161	63.997	66.546	68.653	71.311	74.335	21	57
	Stem Exclusion	61.819	18	51.557	57.978	62.747	64.983	66.765	68.748	72.845	17	
	Understory Reinitiation	60.151	16	53.462	58.256	61.266	63.402	65.327	68.244	70.497	16	
	Shifting Mosaic	53.727	0	60.444	63.055	65.187	66.709	68.100	70.073	72.417	11	

---

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

<i>Seral-Stage Departure Index</i>	38
<i>Class Configuration Departure Index</i>	48
<i>Cover Type Departure Index</i>	43

---

<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.