

## Supplemental Materials S1

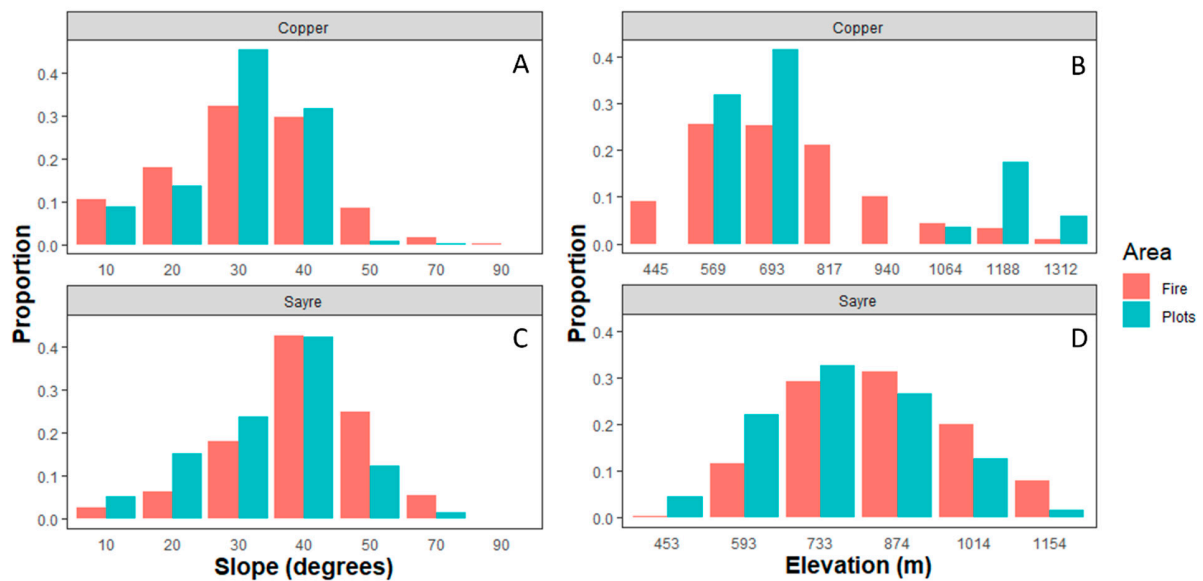


Figure S1. Distribution of elevation (m) and slope (degrees) values within plots (blue) and entire fire scar perimeters (red) for the Copper fire (A and B) and Sayre fire (C and D) within the Angeles National Forest. We attempted to match our ground survey plots with the proportion of various topographic zones within the fire boundaries, however this became increasingly difficult as slopes became steeper than 40 degrees and less safe and accessible.

Table S1. Mean and standard deviation (SD) of diversity metrics for the 12 configurations of Photogrid sampling and the field point-intercept method.

Configuration	$S_{mean}$	$S_{SD}$	$1/D_{mean}$	$1/D_{SD}$	$E_{mean}$	$E_{SD}$
1	12.625	3.074	4.404	1.472	0.361	0.123
2	11.688	2.651	4.361	1.414	0.384	0.131
3	10.688	2.822	4.361	1.369	0.419	0.123
4	11.500	2.394	4.328	1.482	0.381	0.125
5	10.500	2.280	4.264	1.371	0.416	0.147
6	9.688	2.387	4.236	1.340	0.448	0.140
7	10.625	2.729	4.559	1.561	0.452	0.174
8	10.125	2.391	4.486	1.521	0.462	0.173
9	9.125	2.335	4.357	1.364	0.497	0.168
10	9.563	2.190	4.448	1.652	0.475	0.172
11	8.938	2.048	4.385	1.552	0.501	0.165
12	7.938	1.731	4.171	1.458	0.529	0.150
<b>Field point-intercept</b>	<b>13.438</b>	<b>2.308</b>	<b>5.080</b>	<b>1.687</b>	<b>0.375</b>	<b>0.102</b>

Table S2. Results of linear models with % Cover<sub>p-i</sub> as the response variable and % Cover<sub>p</sub> as the predictor variable. Separate models were analyzed for each Photogrid configuration. The pearson correlation coefficient between the two variables is also shown (R).

Configuration	Intercept ( $\beta_0$ )				Slope ( $\beta_1$ )				R
	estimate	std.error	statistic	p.value	estimate	std.error	statistic	p.value	
1	0.306	0.340	0.901	0.368	0.965	0.028	34.556	2.150E-97	0.909
2	0.264	0.333	0.792	0.429	0.972	0.027	35.563	5.390E-100	0.913
3	0.284	0.334	0.852	0.395	0.968	0.027	35.321	2.260E-99	0.912
4	0.251	0.354	0.710	0.479	0.975	0.029	33.552	9.500E-95	0.904
5	0.276	0.354	0.778	0.438	0.972	0.029	33.396	2.480E-94	0.903
6	0.273	0.360	0.759	0.448	0.970	0.030	32.819	8.740E-93	0.901
7	0.473	0.353	1.339	0.182	0.935	0.029	32.271	2.670E-91	0.898
8	0.412	0.349	1.182	0.238	0.946	0.029	33.023	2.470E-93	0.902
9	0.314	0.353	0.892	0.373	0.959	0.029	33.119	1.360E-93	0.902
10	0.374	0.370	1.011	0.313	0.953	0.030	31.385	7.230E-89	0.893
11	0.439	0.377	1.165	0.245	0.945	0.031	30.545	1.600E-86	0.888
12	0.255	0.393	0.648	0.518	0.971	0.032	30.051	4.020E-85	0.885

Table S3. Results of linear models with 1/D<sub>p-i</sub> as the response variable and 1/D<sub>p</sub> as the predictor variable. Separate models were analyzed for each Photogrid configuration. The pearson correlation coefficient between the two variables is also shown (R).

Configuration	Intercept ( $\beta_0$ )				Slope ( $\beta_1$ )				R
	estimate	std.error	statistic	p.value	estimate	std.error	statistic	p.value	
1	0.265	0.444	0.596	0.561	0.815	0.083	9.789	1.22E-07	0.934
2	0.365	0.413	0.883	0.392	0.787	0.077	10.154	7.72E-08	0.938
3	0.508	0.411	1.235	0.237	0.759	0.077	9.844	1.14E-07	0.935
4	0.175	0.459	0.381	0.709	0.817	0.086	9.502	1.75E-07	0.930
5	0.441	0.438	1.007	0.331	0.752	0.082	9.161	2.73E-07	0.926
6	0.529	0.447	1.184	0.256	0.730	0.084	8.706	5.05E-07	0.919
7	0.412	0.620	0.664	0.517	0.816	0.116	7.022	6.04E-06	0.883
8	0.403	0.581	0.693	0.500	0.804	0.109	7.378	3.46E-06	0.892
9	0.528	0.418	1.264	0.227	0.754	0.078	9.620	1.51E-07	0.932
10	-0.035	0.604	-0.059	0.954	0.883	0.113	7.795	1.85E-06	0.902
11	0.242	0.607	0.399	0.696	0.815	0.114	7.173	4.76E-06	0.887
12	0.111	0.467	0.238	0.815	0.799	0.088	9.129	2.85E-07	0.925

Table S4. Results of linear models with  $S_{p-i}$  as the response variable and  $S_p$  as the predictor variable. Separate models were analyzed for each Photogrid configuration. The pearson correlation coefficient between the two variables is also shown (R).

Configuration	Intercept ( $\beta_0$ )				Slope ( $\beta_1$ )				R
	estimate	std.error	statistic	p.value	estimate	std.error	statistic	p.value	
1	5.628	4.462	1.261	0.228	0.521	0.328	1.590	0.134	0.391
2	5.941	3.880	1.531	0.148	0.428	0.285	1.501	0.155	0.372
3	6.453	4.300	1.501	0.156	0.315	0.316	0.998	0.335	0.258
4	3.179	3.029	1.049	0.312	0.619	0.222	2.784	0.015	0.597
5	3.188	3.001	1.062	0.306	0.544	0.220	2.470	0.027	0.551
6	3.772	3.406	1.108	0.287	0.440	0.250	1.761	0.100	0.426
7	4.636	3.987	1.163	0.264	0.446	0.293	1.523	0.150	0.377
8	4.725	3.475	1.360	0.195	0.402	0.255	1.575	0.138	0.388
9	6.414	3.608	1.778	0.097	0.202	0.265	0.762	0.459	0.199
10	3.668	3.062	1.198	0.251	0.439	0.225	1.951	0.071	0.462
11	5.334	3.079	1.732	0.105	0.268	0.226	1.186	0.255	0.302
12	5.847	2.670	2.190	0.046	0.156	0.196	0.794	0.441	0.208

Table S5. Results of linear models with  $E_{p-i}$  as the response variable and  $E_p$  as the predictor variable. Separate models were analyzed for each Photogrid configuration. The pearson correlation coefficient between the two variables is also shown (R).

Configuration	Intercept ( $\beta_0$ )				Slope ( $\beta_1$ )				R
	estimate	std.error	statistic	p.value	estimate	std.error	statistic	p.value	
1	-0.031	0.063	-0.494	0.629	1.046	0.163	6.405	1.640E-05	0.863
2	-0.042	0.062	-0.676	0.510	1.137	0.161	7.067	5.620E-06	0.884
3	0.019	0.059	0.320	0.754	1.068	0.152	7.018	6.070E-06	0.882
4	-0.026	0.059	-0.442	0.665	1.087	0.151	7.177	4.730E-06	0.887
5	-0.044	0.078	-0.561	0.584	1.226	0.201	6.093	2.780E-05	0.852
6	0.000	0.070	0.004	0.997	1.196	0.180	6.648	1.100E-05	0.871
7	-0.035	0.114	-0.309	0.762	1.300	0.294	4.415	5.871E-04	0.763
8	-0.045	0.106	-0.426	0.676	1.353	0.273	4.948	2.141E-04	0.798
9	0.028	0.111	0.251	0.806	1.253	0.287	4.363	6.497E-04	0.759
10	-0.037	0.103	-0.359	0.725	1.367	0.266	5.142	1.497E-04	0.809
11	0.051	0.113	0.448	0.661	1.200	0.292	4.113	1.054E-03	0.740
12	0.122	0.102	1.186	0.256	1.086	0.264	4.107	1.067E-03	0.739

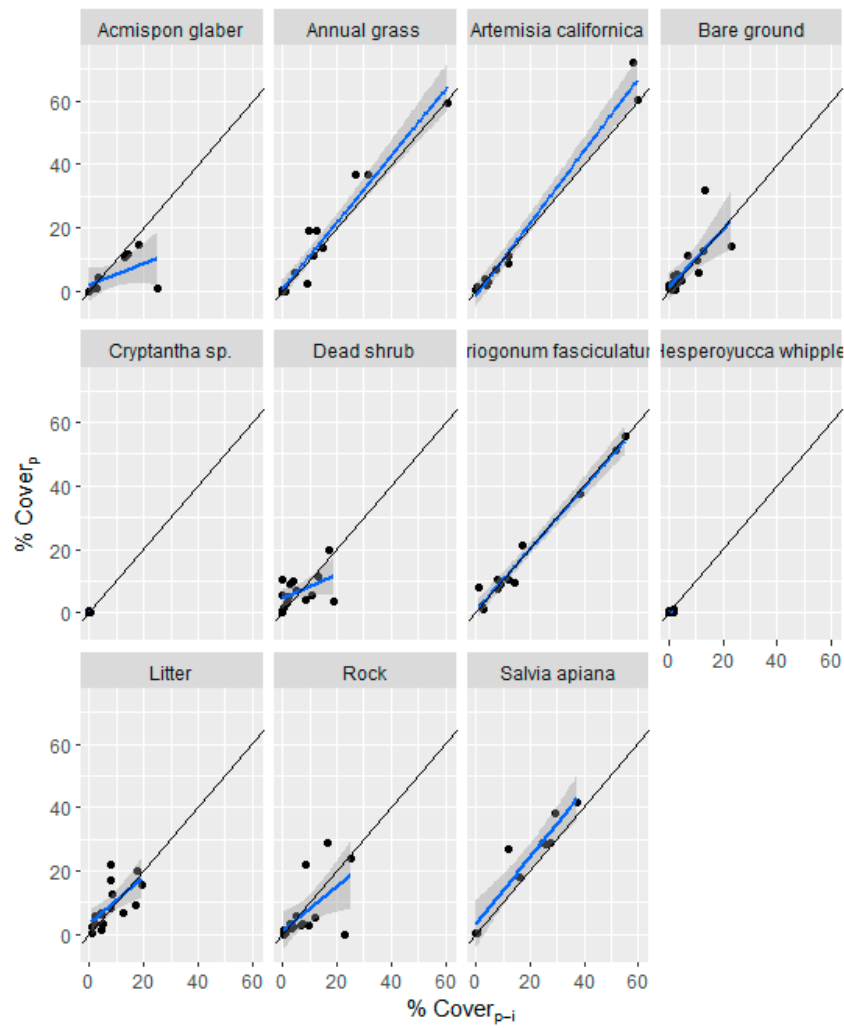


Figure S2. Linear regressions between  $\% \text{Cover}_p$  and  $\% \text{Cover}_{p-i}$  for 10 species occurring in 9 or more of the 16 plots surveyed in 2019. Regression lines are shown in blue with grey confidence intervals. The one-to-one line is shown in black.

Table S6. Linear model results for % Cover<sub>p</sub> predicted by % Cover<sub>p-i</sub> for 10 species and ground cover classes occurring in 9 or more of the 16 plots surveyed in 2019. R is the pearson correlation coefficient. Num plots is the number of plots a species was recorded. % Cover<sub>p-i</sub> is the mean (standard deviation) of percent cover across all plots where it was recorded.

Species/ Ground Cover	Intercept ( $\beta_0$ )				Slope ( $\beta_i$ )				R	Num. Plots	% Cover <sub>p-i</sub> Mean (SD)
	estimate	std. error	T	p- value	estimate	std. error	T	p-value			
Annual grass	0.81	1.33	0.61	0.55	1.05	0.07	15.48	3.35E-10	0.97	16	11 (16.4)
<i>Eriogonum fasciculatum</i>	0.68	1.28	0.53	0.61	0.98	0.05	19.73	2.45E-09	0.99	12	18 (19.1)
<i>Artemisia californica</i>	-1.39	1.57	-0.88	0.40	1.14	0.06	19.62	4.74E-08	0.99	10	16 (22.8)
<i>Salvia apiana</i>	3.13	3.14	1.00	0.35	1.06	0.14	7.72	0.0001	0.95	9	19 (13.1)
Bare ground	1.19	2.05	0.58	0.57	0.92	0.24	3.86	0.0017	0.72	16	6 (6.4)
Litter	3.21	2.14	1.50	0.16	0.74	0.22	3.30	0.0053	0.66	16	8 (6.0)
Rock	1.02	2.85	0.36	0.73	0.70	0.26	2.66	0.0188	0.58	16	8 (7.8)
Dead shrub	4.36	1.48	2.95	0.01	0.38	0.18	2.07	0.0570	0.48	16	5 (6.3)
<i>Acmispon glaber</i>	1.88	2.24	0.84	0.42	0.33	0.19	1.73	0.1213	0.52	10	8 (8.6)
<i>Cryptantha sp.</i>	0.17	0.08	2.15	0.07	-0.54	0.53	-1.01	0.3454	-0.36	9	0.07 (0.14)
<i>Hesperoyucca whipplei</i>	0.24	0.19	1.26	0.24	0.10	0.15	0.63	0.5478	0.22	10	1 (0.75)