Supplemental online material for Christina M. Haffey & David L. Gorchov (2019) The effects of deer and an invasive shrub, *Lonicera maackii*, on forest understory plant composition. Écoscience, DOI: 10.1080/11956860.2019.1582195

Supplemental Table 1 Output from nested, split-plot ANOVAs for stem density (number of stems per m^2), species richness, Shannon Diversity Index, and total basal area (BA) in cm^2 per $200m^2$ half plot, of woody tree seedlings and shrubs 0.3-2m tall. The p value (Pr(>[z])) was obtained by comparing the t value from each test to the t distribution with 16 degrees of freedom.

Woody Tree Seedlings		**Estimate**	**Std. Error**	**t Value**	**Pr(>[z])**
Stem Density	(Intercept)	0.029	0.091	0.318	0.7545
	Deer Exclusion	0.280	0.129	2.172	0.0453
	Honeysuckle Removal	-0.006	0.108	-0.056	0.9563
	Deer*Honeysuckle	-0.222	0.153	-1.455	0.1649
Species Richness	(Intercept)	2.600	1.327	1.960	0.0677
	Deer Exclusion	3.600	1.567	2.298	0.0354
	Honeysuckle Removal	0.200	1.114	0.180	0.8597
	Deer*Honeysuckle	-2.400	1.575	-1.524	0.1470
Shannon Diversity Index	(Intercept)	0.662	0.279	2.374	0.0304
	Deer Exclusion	-0.094	0.328	-0.288	0.7773
	Honeysuckle Removal	-0.19354	0.27058	-0.715	0.4847
	Deer*Honeysuckle	0.153	0.383	0.399	0.6951
Total BA	(Intercept)	3.811	3.141	1.213	0.2426
	Deer Exclusion	5.634	3.408	1.654	0.1177
	Honeysuckle Removal	-0.448	3.009	-0.149	0.8836
	Deer*Honeysuckle	-4.643	4.256	-1.091	0.2914
Woody Shrubs		**Estimate**	**Std. Error**	**t Value**	**Pr(>[z])**
Stem Density	(Intercept)	0.240	0.440	0.546	0.5927
	Deer Exclusion	0.515	0.495	1.041	0.3135
	Honeysuckle Removal	-0.039	0.337	-0.116	0.9092
	Deer*Honeysuckle	0.335	0.476	0.704	0.4917
Species Richness	(Intercept)	3.800	1.063	3.575	0.0025

	Deer Exclusion	2.600	1.360	1.912	0.0740
	Honeysuckle Removal	-0.200	1.010	-0.198	0.8455
	Deer*Honeysuckle	-1.800	1.428	-1.260	0.2256
Shannon Diversity Index	(Intercept)	0.870	0.209	4.161	0.0007
	Deer Exclusion	-0.157	0.296	-0.530	0.6031
	Honeysuckle Removal	-0.107	0.2732	-0.390	0.7015
	Deer*Honeysuckle	0.430	0.386	1.112	0.2824
Total BA	(Intercept)	9.610	20.759	0.463	0.6496
	Deer Exclusion	28.048	25.314	1.108	0.2842
	Honeysuckle Removal	-2.325	17.384	-0.134	0.8953
	Deer*Honeysuckle	11.864	24.584	0.483	0.6359

Supplemental Table 2 Output from nested, split-plot ANOVAs for total, native, and non-native plant species richness of the forest floor layer in spring and summer. The p value (Pr(>[z])) was obtained by comparing the t value from each test to the t distribution with 16 degrees of freedom.

Spring Richness		**Estimate**	**Std. Error**	**t Value**	**Pr(>[z])**
Total	(Intercept)	21.200	1.581	13.408	<0.0001
	Deer Exclusion	-4.600	1.857	-2.477	0.0248
	Honeysuckle Removal	1.000	1.723	0.580	0.5698
	Deer*Honeysuckle	4.800	2.437	1.969	0.0665
Native	(Intercept)	102.600	22.070	4.648	0.0003
	Deer Exclusion	-85.800	27.370	-3.135	0.0064
	Honeysuckle Removal	10.000	16.060	0.623	0.5422
	Deer*Honeysuckle	4.000	22.710	0.176	0.8624
Non-native	(Intercept)	21.200	1.581	13.408	<0.0001
	Deer Exclusion	-5.600	1.857	-2.477	0.0248
	Honeysuckle Removal	1.000	1.723	0.580	0.5698
	Deer*Honeysuckle	4.800	2.437	1.969	0.0665
Summer Richness		**Estimate**	**Std. Error**	**t Value**	**Pr(>[z])**
Total	(Intercept)	18.200	1.739	10.464	<0.0001
	Deer Exclusion	-4.400	2.139	-2.057	0.0564
	Honeysuckle Removal	4.200	2.139	1.963	0.0672
	Deer*Honeysuckle	2.400	3.025	0.793	0.4392
Native	(Intercept)	12.000	1.155	10.386	<0.0001
	Deer Exclusion	-1.800	1.634	-1.102	0.2869
	Honeysuckle Removal	2.800	1.634	1.714	0.1059
	Deer*Honeysuckle	1.600	2.311	0.692	0.4986
Non-native	(Intercept)	2.800	0.480	5.838	<0.0001
	Deer Exclusion	-1.200	0.557	-2.155	0.0467
	Honeysuckle Removal	0.800	0.374	2.138	0.0483
	Deer*Honeysuckle	1.000	0.529	1.890	0.0770

Supplemental Table 3 Output from nested, split-plot ANOVAs for bare ground cover, total plant cover, and cover of native and non-native species, as well as of the different growth forms of the forest floor layer in spring. The p value (Pr(>[z])) was obtained by comparing the t value from each test to the t distribution with 16 degrees of freedom.

Spring Cover		Estimate	Std. Error	t Value	Pr(>[z])
bare ground	(Intercept)	5.700	1.226	4.648	0.0003
	Deer Exclusion	-4.767	1.521	-3.135	0.0064
	Honeysuckle Removal	0.556	0.892	0.623	0.5422
	Deer*Honeysuckle	0.222	1.262	0.176	0.8624
total	(Intercept)	24.822	6.800	3.650	0.0022
	Deer Exclusion	-2.322	9.617	-0.241	0.8123
	Honeysuckle Removal	13.778	6.057	2.275	0.0370
	Deer*Honeysuckle	8.256	8.566	0.964	0.3495
natives	(Intercept)	16.778	4.267	3.842	0.0014
	Deer Exclusion	0.033	5.796	0.006	0.9955
	Honeysuckle Removal	6.644	5.654	1.175	0.2571
	Deer*Honeysuckle	16.044	7.996	2.007	0.0620
non-natives	(Intercept)	4.989	4.985	1.001	0.3318
	Deer Exclusion	0.133	7.050	0.019	0.9851
	Honeysuckle Removal	8.544	5.314	1.608	0.1274
	Deer*Honeysuckle	-10.100	7.515	-1.344	0.1977
trees	(Intercept)	3.500	1.407	2.488	0.0242
	Deer Exclusion	-0.467	1.471	-0.317	0.7552
	Honeysuckle Removal	-0.211	1.471	-0.144	0.8877
	Deer*Honeysuckle	5.411	2.080	2.601	0.0193
shrubs	(Intercept)	1.367	1.485	0.920	0.3712
	Deer Exclusion	3.156	2.074	1.522	0.1476
	Honeysuckle Removal	-0.267	2.074	-0.129	0.8993
	Deer*Honeysuckle	-2.844	2.933	-0.970	0.3465
vines	(Intercept)	0.889	1.180	0.754	0.4621
	Deer Exclusion	-0.111	1.308	-0.085	0.9334
	Honeysuckle Removal	2.356	1.308	1.801	0.0906
	Deer*Honeysuckle	1.311	1.850	0.709	0.4887
ferns	(Intercept)	0.100	0.276	0.363	0.7215
	Deer Exclusion	-0.033	0.364	-0.092	0.9282
	Honeysuckle Removal	0.533	0.364	1.464	0.1625
	Deer*Honeysuckle	-0.056	0.515	-0.108	0.9154
graminoids	(Intercept)	1.789	0.656	2.728	0.0149
	Deer Exclusion	-1.411	0.886	-1.593	0.1306
	Honeysuckle Removal	0.122	0.711	0.172	0.8657

	Deer*Honeysuckle	0.900	1.006	0.895	0.3841
annuals	(Intercept)	4.256	4.530	0.939	0.3615
	Deer Exclusion	-3.433	6.407	-0.536	0.5994
	Honeysuckle Removal	4.811	4.698	1.024	0.3210
	Deer*Honeysuckle	-4.567	6.644	-0.687	0.5017
spring perennials	(Intercept)	3.633	1812.000	2.005	0.0622
	Deer Exclusion	-0.100	2.563	-0.039	0.9694
	Honeysuckle Removal	2.956	2.563	1.153	0.2657
	Deer*Honeysuckle	5.211	3.624	1.438	0.1698
summer perennials	(Intercept)	6.867	5.955	1.153	0.2658
	Deer Exclusion	1.989	7.551	0.263	0.7956
	Honeysuckle Removal	1.756	6.653	0.264	0.7952
	Deer*Honeysuckle	4.233	9.409	0.450	0.6588
biennials	(Intercept)	31.000	19.240	1.611	0.1266
	Deer Exclusion	-22.800	25.900	-0.880	0.3917
	Honeysuckle Removal	20.800	18.850	1.104	0.2860
	Deer*Honeysuckle	20.400	26.650	-0.765	0.4552
moss	(Intercept)	0.700	0.395	1.771	0.0956
	Deer Exclusion	-0.700	0.559	-1.252	0.2285
	Honeysuckle Removal	0.456	0.377	1.209	0.2443
	Deer*Honeysuckle	-0.456	0.533	-0.855	0.4053

Supplemental Table 4 Output from nested, split-plot ANOVAs for bare ground cover, total plant cover, and cover of native and non-native species, as well as of the different growth forms of the forest floor layer in summer. The p value (Pr(>[z])) was obtained by comparing the t value from each test to the t distribution with 16 degrees of freedom.

Summer Cover		Estimate	Std. Error	t Value	Pr(>[z])
bare ground	(Intercept)	132.200	37.150	3.558	0.0026
	Deer Exclusion	-96.200	52.270	-1.841	0.0843
	Honeysuckle Removal	-2.600	37.900	-0.069	0.9462
	Deer*Honeysuckle	-3.800	53.590	-0.071	0.9444
total	(Intercept)	339.200	105.100	3.226	0.0053
	Deer Exclusion	-1.800	124.000	-0.015	0.9886
	Honeysuckle Removal	171.600	103.400	1.660	0.1165
	Deer*Honeysuckle	104.600	146.200	0.715	0.4847
natives	(Intercept)	255.400	94.730	2.696	0.0159
	Deer Exclusion	-3.200	115.540	-0.028	0.9782
	Honeysuckle Removal	159.400	113.100	1.409	0.1779
	Deer*Honeysuckle	97.400	159.950	0.609	0.5511
non-natives	(Intercept)	43.400	24.840	1.747	0.0998
	Deer Exclusion	28.400	35.130	0.808	0.4307
	Honeysuckle Removal	3.200	35.130	0.091	0.9286
	Deer*Honeysuckle	3.800	49.680	0.076	0.9400
trees	(Intercept)	57.000	30.890	1.845	0.0836
	Deer Exclusion	-1.800	26.070	-0.069	0.9458
	Honeysuckle Removal	25.600	26.070	0.982	0.3408
	Deer*Honeysuckle	37.800	36.870	1.025	0.3205
shrubs	(Intercept)	22.800	25.140	0.907	0.3780
	Deer Exclusion	49.400	34.310	1.440	0.1692
	Honeysuckle Removal	-7.600	33.440	-0.227	0.8231
	Deer*Honeysuckle	-30.200	47.290	-0.639	0.5321
vines	(Intercept)	30.800	16.680	1.847	0.0834
	Deer Exclusion	-20.200	20.250	-0.997	0.3334
	Honeysuckle Removal	15.200	20.250	0.750	0.4639
	Deer*Honeysuckle	65.000	28.640	2.269	0.0374
ferns	(Intercept)	3.600	2.107	1.708	0.1069
	Deer Exclusion	-3.600	2.980	-1.208	0.2446
	Honeysuckle Removal	-1.000	2.980	-0.336	0.7415
	Deer*Honeysuckle	4.200	4.214	0.997	0.3338
graminoids	(Intercept)	24.600	8.842	2.782	0.0133
	Deer Exclusion	-17.200	12.504	-1.375	0.1879
	Honeysuckle Removal	25.400	11.906	2.133	0.0487

	Deer*Honeysuckle	-11.800	16.838	-0.701	0.4935
annuals	(Intercept)	52.200	17.410	2.998	0.0085
	Deer Exclusion	-48.600	21.190	-2.294	0.0357
	Honeysuckle Removal	0.800	21.190	0.038	0.9704
	Deer*Honeysuckle	8.600	29.970	0.287	0.7778
spring perennials	(Intercept)	20.200	12.970	1.557	0.1391
	Deer Exclusion	-11.000	13.610	-0.808	0.4309
	Honeysuckle Removal	-10.000	13.610	-0.735	0.4732
	Deer*Honeysuckle	56.600	19.250	2.940	0.0096
summer perennials	(Intercept)	84.200	94.720	0.889	0.3872
	Deer Exclusion	79.400	118.730	0.669	0.5132
	Honeysuckle Removal	103.400	89.640	1.153	0.2657
	Deer*Honeysuckle	-31.200	126.770	-0.246	0.8087
biennials	(Intercept)	20.600	7.398	2.784	0.0133
	Deer Exclusion	-16.800	10.111	-1.662	0.1161
	Honeysuckle Removal	3.000	8.702	0.345	0.7348
	Deer*Honeysuckle	9.600	12.307	0.780	0.4467
moss	(Intercept)	15.400	5.994	2.569	0.0206
	Deer Exclusion	-10.600	8.477	-1.250	0.2291
	Honeysuckle Removal	-3.800	8.477	-0.448	0.6600
	Deer*Honeysuckle	4.600	11.988	0.384	0.7062