

SUPPLEMENTAL INFORMATION

**URBAN LAND COVER ASSOCIATED WITH SPACE USE IN
WOODLAND BOX TURTLES (*TERRAPENE CAROLINA CAROLINA*)**

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TABLE S1. Summary statistics of land cover quantified for each female Woodland Box Turtles (*Terrapene carolina Carolina*) at 11 sites in northcentral South Carolina, USA. Land cover metrics are quantified within a circle with three radii centered around the centroid of all the detected locations for each turtle. Forest, the area of forest cover; Impervious, impervious surface cover; Road, density of roads; PC1, the first principal component resulting from a principal component analysis of forest and impervious surface cover.

Site	250 m Radius								500 m Radius								1500 m Radius							
	Forest (ha)		Impervious (ha)		Road (m/m ²)		PC1		Forest (ha)		Impervious (ha)		Road (m/m ²)		PC1		Forest (ha)		Impervious (ha)		Road (m/m ²)		PC1	
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
1	16.64	1.54	0.46	0.80	4.32	7.48	-0.69	0.67	66.39	5.60	1.17	2.01	2.71	4.70	1.53	0.49	479.26	8.89	22.01	2.22	4.28	0.07	1.24	0.04
2	15.65	1.55	0.18	0.25	1.15	3.04	-0.60	0.31	60.13	4.26	2.59	0.79	2.99	1.03	1.06	0.28	496.06	12.70	62.38	5.62	5.43	0.37	0.98	0.14
3	8.74		3.67		11.92		2.37		29.68		16.10		14.67		-1.84		245.19		213.6 7		13.93		-2.19	
4	17.42	0.90	0.61	0.34	0.79	0.92	-0.80	0.33	62.80	1.73	2.83	0.48	4.76	1.10	1.18	0.07	496.40	4.85	33.17	0.59	4.56	0.08	1.25	0.04
5	16.66	0.67	1.11	0.70	1.00	0.78	-0.42	0.41	45.78	3.64	14.77	1.79	5.74	0.47	-0.82	0.36	348.55	2.36	136.6 4	0.26	8.94	0.01	-0.74	0.02
6	17.45	0.95	0.33	0.27	2.34	3.61	-0.93	0.30	56.36	8.54	2.40	1.37	1.18	1.90	0.86	0.58	535.06	30.71	12.19	1.36	1.50	0.11	1.72	0.21
7	7.81	1.92	6.33	0.51	6.74	0.88	3.69	0.38	28.26	2.70	30.47	1.81	9.44	1.01	-3.19	0.31	308.25	10.33	249.5 2	6.84	8.38	0.60	-2.09	0.14
8	9.30	3.12	1.90	0.65	0.90	0.39	1.50	0.53	32.93	3.82	9.64	2.87	2.10	0.43	-1.08	0.46	383.28	18.19	95.28	17.36	3.23	0.32	-0.11	0.29
9	16.24	0.47	0.05	0.06	0.97	0.39	-0.78	0.08	55.75	4.63	2.61	0.49	2.48	1.21	0.81	0.30	372.09	13.67	72.37	8.48	3.04	0.26	0.02	0.17
10	14.83	1.19	0.74	0.44	1.34	1.18	-0.19	0.41	40.12	2.62	8.62	1.75	4.35	1.22	-0.59	0.23	254.92	12.90	187.9 2	8.44	11.71	0.20	-1.88	0.16
11	13.75	0.09	2.45	0.00	7.57	0.27	0.77	0.02	45.93	1.63	13.28	1.85	8.80	0.31	-0.68	0.25	406.89	8.33	65.44	1.87	5.81	0.09	0.33	0.08

TABLE S2. Summary statistics of land cover quantified for each male Woodland Box Turtles (*Terrapene carolina Carolina*) at 11 sites in northcentral South Carolina, USA. Land cover metrics are quantified within a circle with three radii centered around the centroid of all the detected locations for each turtle. Forest, the area of forest cover; Impervious, impervious surface cover; Road, density of roads; PC1, the first principal component resulting from a principal component analysis of forest and impervious surface cover.

Site	250 m Radius								500 m Radius								1500 m Radius							
	Forest (ha)		Impervious (ha)		Road (m/m ²)		PC1		Forest (ha)		Impervious (ha)		Road (m/m ²)		PC1		Forest (ha)		Impervious (ha)		Road (m/m ²)		PC1	
	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD	\bar{x}	SD
1	17.72	0.50	0.00	0.00	0.00	0.00	-1.19	0.10	69.18	1.05	0.20	0.25	0.13	0.25	-1.62	0.07	488.06	4.70	21.94	0.47	4.32	0.04	-1.26	0.04
2	16.04	0.98	0.12	0.11	0.52	1.04	-0.82	0.24	60.96	3.87	2.28	1.46	2.61	0.53	-1.04	0.30	497.00	10.08	62.09	4.55	5.49	0.05	-0.94	0.13
3																								
4	17.38	0.95	0.56	0.33	1.30	1.05	-0.89	0.32	62.80	2.69	2.96	0.46	4.85	0.94	-1.09	0.12	495.28	8.87	32.88	0.98	4.51	0.12	-1.21	0.08
5	14.57	2.53	1.58	1.34	0.88	1.51	0.09	1.03	42.28	5.89	15.88	4.51	6.31	0.41	0.91	0.62	346.01	6.09	136.77	0.88	8.94	0.04	1.08	0.06
6	15.31	1.99	0.43	0.49	0.06	0.10	-0.54	0.52	49.80	3.95	3.91	3.68	0.28	0.48	-0.35	0.43	523.32	16.17	11.79	1.68	1.45	0.23	-1.66	0.15
7	7.75	1.04	4.74	2.09	9.17	2.01	2.76	1.05	27.28	2.21	30.49	2.14	10.41	1.02	2.75	0.27	313.13	1.49	242.45	3.33	9.19	0.61	2.41	0.02
8	8.03	0.33	0.88	0.32	0.45	0.11	1.06	0.17	35.01	0.45	6.51	0.93	1.45	0.13	0.59	0.09	405.49	4.07	79.06	2.05	2.58	0.26	0.01	0.05
9	15.76	0.75	0.06	0.08	1.36	0.30	-0.79	0.11	52.73	0.60	2.95	0.37	2.86	0.31	-0.57	0.06	381.75	4.57	68.03	0.67	2.86	0.03	0.10	0.05
10	14.52	0.16	0.76	0.04	0.00	0.00	-0.25	0.01	38.10	0.49	6.82	0.12	2.22	0.17	0.46	0.03	254.37	3.34	179.67	1.75	12.03	0.04	2.29	0.05
11	13.79	0.80	2.32	0.58	6.92	1.37	0.56	0.39	45.34	1.86	13.86	1.84	8.76	0.21	0.61	0.23	409.62	5.84	65.09	1.35	5.78	0.07	-0.17	0.06

TABLE S3. Single predictor linear quantile mixed models (0.75 quantile) of 100% minimum convex polygons for female *Terrapene carolina carolina* in northcentral South Carolina, USA. Predictor variables were measured within different radii around the centroid of each *T. carolina* individual. Sampling site was included as a random effect. Coefficient, standardized coefficients of fixed effects; PC1, first principal component derived from principal component analysis; ER, ratio of weights between given model and next best model (evidence ratio); CI, confidence intervals.

Model	Radius (m)	ΔAIC_C	w	ER	Coefficient	95% CI
Forest (ha)	500	0.00	0.406	1.71	1.64	0.03, 3.25
PC1 of forest and impervious surface	500	1.07	0.238	3.77	1.45	-0.56, 3.46
PC1 of forest and impervious surface	1500	3.72	0.063	1.11	1.75	0.01, 3.48
Forest (ha)	1500	3.92	0.057	1.08	1.62	-0.33, 3.56
Impervious surface (ha)	500	4.07	0.053	1.04	-1.40	-3.52, 0.72
PC1 of forest and impervious surface	250	4.15	0.051	1.03	-0.96	-2.22, 0.31
Impervious surface (ha)	1500	4.22	0.049	1.52	-1.38	-3.23, 0.47
Forest (ha)	250	5.06	0.032	1.23	1.13	0.27, 1.99
Road density (m/m ²)	1500	5.47	0.026	2.47	-0.86	-2.91, 1.19
Impervious surface (ha)	250	7.28	0.011	1.81	-0.92	-2.49, 0.66
Intercept		8.47	0.006	1.36	3.49	-0.34, 7.33
Road density (m/m ²)	500	9.09	0.004	2.04	-0.88	-2.35, 0.60
Road density (m/m ²)	250	10.51	0.002		0.62	-0.74, 1.98

TABLE S4. Single predictor linear quantile mixed models (0.75 quantile) of 100% minimum convex polygons for male *Terrapene carolina carolina* in northcentral South Carolina, USA. Predictor variables were measured within different radii around the centroid of each *T. carolina* individual. Sampling site was included as a random effect. Coefficient, standardized coefficients of fixed effects; PC1, first principal component derived from principal component analysis; ER, ratio of weights between given model and next best model (evidence ratio); CI, confidence intervals.

Model	Radius (m)	ΔAIC_C	w	ER	Coefficient	95% CI
Intercept		0.00	0.210	1.37	1.00	0.64, 1.35
Impervious surface (ha)	250	0.62	0.154	1.44	-0.24	-0.75, 0.26
PC1 of forest and impervious surface	250	1.35	0.107	1.11	-0.04	-0.42, 0.34
Forest (ha)	250	1.54	0.097	1.48	0.05	-0.33, 0.44
Forest (ha)	500	2.33	0.066	1.01	0.01	-0.40, 0.41
PC1 of forest and impervious surface	500	2.34	0.065	1.01	-0.01	-0.50, 0.49
PC1 of forest and impervious surface	1500	2.35	0.065	1.00	-0.01	-0.42, 0.41
Impervious surface (ha)	1500	2.36	0.065	1.00	-0.01	-0.46, 0.44
Impervious surface (ha)	500	2.36	0.065	1.28	-0.01	-0.59, 0.57
Road density (m/m ²)	500	2.86	0.050	1.68	0.10	-0.14, 0.34
Road density (m/m ²)	1500	3.89	0.030	1.90	0.09	-0.38, 0.56
Road density (m/m ²)	250	5.17	0.016	1.61	0.03	-0.55, 0.61
Forest (ha)	1500	6.13	0.010		0.09	-0.56, 0.73

TABLE S5. Single predictor linear quantile mixed models (0.75 quantile) of average pairwise distance among all radio tracking detection locations for female *Terrapene carolina carolina* in northcentral South Carolina, USA. Predictor variables were measured within different radii around the centroid of each *T. carolina* individual. Sampling site was included as a random effect. Coefficient, standardized coefficients of fixed effects; PC1, first principal component derived from principal component analysis; ER, ratio of weights between given model and next best model (evidence ratio); CI, confidence intervals.

Model	Radius (m)	ΔAIC_c	w	ER	Coefficient	95% CI
Forest (ha)	500	0.00	0.400	1.03	54.31	29.50, 79.11
PC1 of forest and impervious surface	500	0.06	0.388	5.42	46.35	15.75, 76.95
Impervious surface (ha)	500	3.44	0.072	2.09	-36.58	-82.98, 9.81
Forest (ha)	1500	4.91	0.034	1.11	37.89	-2.83, 78.61
PC1 of forest and impervious surface	1500	5.13	0.031	1.55	39.25	5.00, 73.50
PC1 of forest and impervious surface	250	6.00	0.020	1.02	-35.16	-67.36, -2.97
Impervious surface (ha)	250	6.04	0.020	1.13	-33.56	-79.70, 12.57
Impervious surface (ha)	1500	6.28	0.017	1.82	-40.63	-69.19, -12.06
Forest (ha)	250	7.48	0.010	2.50	34.71	14.31, 55.12
Intercept		9.32	0.004	1.22	132.33	88.96, 175.70
Road density (m/m ²)	500	9.71	0.003	2.46	-27.75	-66.97, 11.47
Road density (m/m ²)	1500	11.52	0.001	1.07	-19.13	-55.61, 17.35
Road density (m/m ²)	250	11.66	0.001	2.28		-32.77, 37.33

TABLE S6. Single predictor linear quantile mixed models (0.75 quantile) of average pairwise distance among all radio tracking detection locations for male *Terrapene carolina carolina* in northcentral South Carolina, USA. Predictor variables were measured within different radii around the centroid of each *T. carolina* individual. Sampling site was included as a random effect. Coefficient, standardized coefficients of fixed effects; PC1, first principal component derived from principal component analysis; ER, ratio of weights between given model and next best model (evidence ratio); CI, confidence intervals.

Model	Radius (m)	ΔAIC_c	w	ER	Coefficient	95% CI
Impervious surface (ha)	1500	0.00	0.248	1.88	15.46	-12.12, 43.04
Impervious surface (ha)	500	1.26	0.132	1.15	15.94	-18.95, 50.82
Intercept		1.53	0.116	1.49	99.22	82.02, 116.41
PC1 of forest and impervious surface	500	2.33	0.077	1.02	10.09	-12.66, 32.84
PC1 of forest and impervious surface	1500	2.36	0.076	1.04	9.30	-17.75, 36.34
Road density (m/m ²)	250	2.44	0.073	1.26	10.16	-26.00, 46.33
Road density (m/m ²)	500	2.90	0.058	1.23	7.98	-14.52, 30.49
Road density (m/m ²)	1500	3.31	0.048	1.07	8.96	-17.57, 35.49
Forest (ha)	250	3.44	0.044	1.07	-7.46	-29.39, 14.48
Forest (ha)	500	3.58	0.041	1.29	-8.34	-28.91, 12.23
Forest (ha)	1500	4.08	0.032	1.01	-8.57	-34.30, 17.16
PC1 of forest and impervious surface	250	4.11	0.032	1.50	5.90	-17.26, 29.05
Impervious surface (ha)	250	4.92	0.021		3.95	-24.40, 32.29