

APPENDIX SA – Table of two-dimensional Ripley's K-Statistics and Hotspot Tests.

Table S1. Results obtained from the analysis of the K- Ripley 2D estatistic and 2D Hotspots tests, for the general class of wild mammals and for the species *Cerdocyon thous*, *Procyon cancrivorus* and *Euphractus sexcinctus*, considering the temporal scale (the entire sampling period, annually and dry and rainy period) and spatially (BR427, RN118 and RN288).

Roads	Group/ Species	Season/year	K- Ripley test	2D HotSpot test
BR427	Mammals	All	100m	Km7.2 to 7.5, Km8.9 to 9.3, Km19.9 to 20.2, Km29.7 to 30.2, Km33.2 to 33.3
		2014	300m	Km0.8, Km1.8, Km4.3, Km4.5, Km9.2, Km9.7, Km11.2 to 11.3, Km18.6, Km19.9 to 20.2, Km38.5, Km39.2
		2015	100m	Km7.1 to 7.4, Km7.7, Km 7.9, Km20.1 to 20.4, Km31.3 to 31.4, Km32.4 to 32.6, Km33.2 to 33.5, Km35.8 to 36.1, Km37.8
		2016	100m	Km9, Km19.9 to 20, Km 26.4 to 26.7, Km29.9 to 30.2, Km34.5 to 34.7, Km36.7 to 36.9, Km 37.1 to 37.3, Km39.7 to 39.9, Km 42 to 42.2
		2017	22200m	Km7 to 9, Km11.8 to13
		Rainy	2000m	Km7.2 to 9.7, Km10.7 to 11, Km31.4 to 31.8, Km35 to 35.5; Km37.9 to 38.1
	<i>Cerdocyon thous</i>	All	100m	Km6.7, Km7.1 to 7.7, Km8, Km9.7, km13.2, Km16.3, Km28.4, Km33.3, Km35.5
		2014	2000m	Km4.5 to 6.5, Km7.5 to 9.3, Km11.3 to 11.7, Km13 to 13.8, Km 14.5 to 15.3
		2015	100m	Km7 to 7.5, Km8, Km10.3 to 10.6, Km12, km16.4, Km22.7 to 22.8, Km24.8, km25.3, km27.4, km28.3, km28.5, km32.8, km33.2, km37.6, km39.3, km40.9, km41.7, km42.3
		2016	300m	Km7.2 to 7.5, Km14, km16.3, Km24.4 to 24.7, Km30.4, km34.2 to 34.6
		2017	100m	Km6.7, Km7.4, km7.6, km8, km13.2, km16.6, Km18.3, Km28.3, Km31.6, Km35, Km35.4, Km38.5, Km39.5
		Rainy	100m	Km7.3 to 7.6, Km8, Km10.3, km10.5, km27.4, km28.3, km38.3, Km39.3
		Dry	100m	km6.8, Km7.2, km9.6, Km13.3, Km16.4, km17.7, km33.2, km42.2
	<i>Procyon cancrivorus</i>	All	100m	Km2.4, Km4.4, Km7.3, km9.7, Km20.2, Km33.4, km36.2
		Rainy	100m	km1.9, km4.4, km7.3, km9.6, km20.3, km33.4, km34.5, km37.6
	<i>Euphractus sexcinctus</i>	Todos	100m	Km14.9, km30, km34.7, km37
RN118	<i>Cerdocyon thous</i>	All	100m	Km4.3, Km10.3, Km20.5, Km25.3
		2014	26500m	Km0.7 to 2
		2015	9Km	Km4 to 4.1, Km8.8 to 9.3, Km9.4, Km9.6 to10, Km10.9 to 11.1, Km11.2 to 13.3
		2017	100m	Km20.4, Km24.8, 25.2
		Rainy	100m	Km18.2, Km20.4, Km25.2
		Dry	100m	Km2.2, Km4.2, Km10.3, Km24.9, Km25.3, Km28.3
RN288	Mammals	All	100m	Km0.5 to 0.8, Km 2.3 to 2.5, Km2.9 to 3.1, Km4.3 to 4.5, Km24.4 to 24.6, Km26.9 to 27, Km30.9 to 31.2, Km31.6 to 31.9
		2014	2500m	Km0.2 to 2.7
		2017	100m	Km1.1 to 1.3, Km2.9 to 3.2, Km31.7 to 31.8, Km32.4 to 32.6

<i>Cerdocyon thous</i>	Rainy	3000m	Km0 to 3.3, Km4 to 4.5, Km5.2 to 5.5
	Dry	100m	Km0.4 to 0.6, Km 2.3 to 2.6, Km2.8 to 3.2, Km30.9 to 31.2, Km31.6 to 31.9
	All	100m	Km1.2, Km1.5, Km2.1, Km24.5, Km30.5, Km32.8
	2014	1000m	Km0.5 to 1.1, Km1.2 to 1.5, Km15.5, Km16.3, Km25.3, Km30.8
	2015	100m	Km1.2, Km1.6, Km2.6, Km4.8, Km17.9, Km24.6
	Rainy	100m	Km1.1 to 1.2, Km1.4 to 1.6, Km2.3, Km4.8, Km19.2, Km19.4, Km24.5, Km32.8
	Dry	100m	Km1.1 to 1.6, Km7.3, Km8.2, Km17.9, Km24.5, Km27.7, Km30.6, Km31.8, Km32.5, Km32.8
	All	100m	Km31.7
<i>Procyon cancrivorus</i>	Dry	100m	Km1.3, Km20.2, Km24.5, Km28.5, Km31,7

APPENDIX SB – Table: monthly precipitation (mm) in the study region.

Table S2. Monthly precipitation (in mm) from the meteorological station called "Açude Mundo Novo" of *Empresa de Pesquisa Agropecuária do Rio Grande do Norte (EMPARN)*, Caicó, Seridó - Rio Grande do Norte, Brazil.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
2007	0.0	163.8	92	136.3	30.5	21.2	3	0.0	0.0	0.0	0.0	0.0
2008	60.6	101.7	318.7	178.2	86.5	17.8	3.2	0.0	0.0	0.0	0.0	0.0
2009	38	194.1	241.8	213.4	112.5	40.8	25.6	22.3	0.0	0.0	0.0	33.1
2010	100.1	56.8	75.8	101.4	12.2	85.1	0.0	0.0	0.0	66.9	0.0	0.0
2011	49.9	176.4	53.7	320.5	125.1	37.5	46.2	0.0	0.0	0.0	0.0	0.0
2012	37	70.9	23.4	0.0	3.5	44	0.0	0.0	0.0	0.0	5	5
2013	31	12.5	93.5	171.2	71.3	14.8	14.8	0.0	0.0	0.0	30	30
2014	23.1	87.2	127.3	17.6	105	4.5	2.4	0.0	2.3	0.0	0.0	0.0
2015	0.0	45.7	117.5	119.6	0.0	0.0	19	0.0	0.0	0.0	0.0	0.0
2016	136	34.8	51.5	90.5	13	28	0.0	0.0	0.0	0.0	0.0	12
2017	8	107.5	111	98	33	22	20	0.0	0.0	0.0	0.0	0.0
2018	3	75	134	215.5	34	0.0	0.0	0.0	0.0	0.0	0.0	19
2019	118	82	246.5	131.5	45	12	18.5	0.0	0.0	0.0	0.0	14.1
2020	69.8	147.9	117.8	132	45.6	23	14.5	0.0	0.8	0.0	9	34.2

APPENDIX SC – Table of details of acquired satellite images.

Table S3. Data obtained from satellite images used in the research to develop classified analyzes of land use and occupation. Due to the location of the study area, it was necessary to obtain four satellite images to develop the spatial analysis in each corresponding season and year.

DATE	SEASON	DATA SET ID	PLATFORM
2014/05/19	RAINY	LC08_L1TP_215064_20140519_20200911_02_T1	USGS
2014/05/19	RAINY	LC08_L1TP_215065_20140519_20200911_02_T1	USGS
2014/05/26	RAINY	LC08_L1TP_216064_20140526_20200911_02_T1	USGS
2014/05/26	RAINY	LC08_L1TP_216065_20140526_20200911_02_T1	USGS
2014/08/14	DRY	LC08_L1TP_216064_20140526_20200814_02_T1	USGS
2014/08/14	DRY	LC08_L1TP_216065_20140526_20200814_02_T1	USGS
2014/08/23	DRY	LC08_L1TP_215064_20140823_20200911_02_T1	USGS
2014/08/23	DRY	LC08_L1TP_215065_20140823_20200911_02_T1	USGS
2015/05/06	RAINY	LC08_L1TP_215064_20150506_20200909_02_T1	USGS
2015/05/06	RAINY	LC08_L1TP_215065_20150506_20200909_02_T1	USGS
2015/05/13	RAINY	LC08_L1TP_216064_20150513_20200909_02_T1	USGS
2015/05/13	RAINY	LC08_L1TP_216065_20150513_20200909_02_T1	USGS
2015/11/14	DRY	LC08_L1TP_215064_20151114_20200908_02_T1	USGS
2015/11/14	DRY	LC08_L1TP_215065_20151114_20200908_02_T1	USGS
2015/11/21	DRY	LC08_L1TP_216064_20151121_20200908_02_T1	USGS
2015/11/21	DRY	LC08_L1TP_216065_20151121_20200908_02_T1	USGS
2016/05/08	RAINY	LC08_L1TP_215064_20160508_20200907_02_T1	USGS
2016/05/08	RAINY	LC08_L1TP_215065_20160508_20200907_02_T1	USGS
2016/05/15	RAINY	LC08_L1TP_216064_20160515_20200907_02_T1	USGS
2016/05/15	RAINY	LC08_L1TP_216065_20160515_20200907_02_T1	USGS
2016/09/20	DRY	LC08_L1TP_216064_20160920_20200906_02_T1	USGS
2016/09/20	DRY	LC08_L1TP_216065_20160920_20200906_02_T1	USGS
2016/09/29	DRY	LC08_L1TP_215064_20160929_20200906_02_T1	USGS
2016/09/29	DRY	LC08_L1TP_215064_20160929_20200906_02_T1	USGS
2017/05/02	RAINY	LC08_L1TP_215064_20170511_20200904_02_T1	USGS
2017/05/02	RAINY	LC08_L1TP_215065_20170511_20200904_02_T1	USGS
2017/05/11	RAINY	LC08_L1TP_216064_20170502_20200904_02_T1	USGS
2017/05/11	RAINY	LC08_L1TP_216065_20170502_20200904_02_T1	USGS
2017/11/19	DRY	LC08_L1TP_215064_20171119_20200902_02_T1	USGS
2017/11/19	DRY	LC08_L1TP_215065_20171119_20200902_02_T1	USGS
2017/11/26	DRY	LC08_L1TP_216064_20171126_20200902_02_T1	USGS
2017/11/26	DRY	LC08_L1TP_216065_20171126_20200902_02_T1	USGS

APPENDIX SD – Summary of model selection statistics from GLMMs

Table S4. Summary of model selection statistics from GLMMs selected by species according to Akaike criteria as a function of landscape features. $\Delta AICc$ represents the AIC distance; df represents degrees of freedom; β : Regression coefficient; wAICc represents how much the model explain de variables related to all other models.

Mammals						
Model	Buffer	AICc	$\Delta AICc$	df	wAICc	
model_den_veget_urb_inf_per_int = glmer(N_ ROADKILL~den_veget * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	1268.1	0.0	9	0.9984	
model_wetland_urb_inf_per_int = glmer(N_ ROADKILL~ wetland * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	1281.3	13.2	9	0.0014	
model_water_urb_inf_per_int = glmer(N_ ROADKILL~ water * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	1287.3	19.1	9	<0.001	
model_wetland_urb_inf_per_int = glmer(N_ ROADKILL~ wetland * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	1288.4	20.3	9	<0.001	
model_wetland_urb_inf_per = glmer(N_ ROADKILL~ wetland + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	1290.0	21.8	8	<0.001	
model_wetland_urb_inf_per = glmer(N_ ROADKILL~ wetland + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	1290.7	22.6	8	<0.001	
model_spa_veget_urb_inf_per_int = glmer(N_ ROADKILL~spa_veget * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	1291.3	23.2	9	<0.001	
model_den_veget_urb_inf_per = glmer(N_ ROADKILL~den_veget + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	1292.7	24.8	8	<0.001	
model_farming_urb_inf_per_int = glmer(N_ ROADKILL~farming * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	1293.1	25.0	9	<0.001	
model_farming_urb_inf_per = glmer(N_ ROADKILL~farming + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	1294.0	25.9	8	<0.001	
<i>C. thous</i>						
Model	Buffer	AICc	$\Delta AICc$	df	wAICc	
model_den_veget_urb_inf_per_int = glmer(N_ ROADKILL~den_veget * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1km	2669.5	0.0	9	0.7813	
model_farming_urb_inf_per = glmer(N_ ROADKILL~farming + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1km	2672.7	3.2	8	0.1580	
model_farming_urb_inf_per_int = glmer(N_ ROADKILL~farming * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1km	2674.7	5.2	9	0.0573	
model_exp_soil_urb_inf_per_int = glmer(N_ ROADKILL~exp_soil * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1km	2682.6	13.1	9	0.0011	
model_exp_soil_urb_inf_per = glmer(N_ ROADKILL~exp_soil + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1km	2684.4	14.9	8	<0.001	
model_spa_veget_urb_inf_per = glmer(N_ ROADKILL~spa_veget + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1km	2685.0	15.5	8	<0.001	
model_wetland_urb_inf_per_int = glmer(N_ ROADKILL~ wetland * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1km	2685.2	15.7	9	<0.001	
model_den_veget_urb_inf_per = glmer(N_ ROADKILL~den_veget + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1km	2686.1	16.6	8	<0.001	
model_spa_veget_urb_inf_per_int = glmer(N_ ROADKILL~spa_veget * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1km	2686.1	16.6	9	<0.001	
model_wetland_urb_inf_per = glmer(N_ ROADKILL~ wetland + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1km	2686.2	16.7	8	<0.001	
<i>P. cancrivorus</i>						
Model	Buffer	AICc	$\Delta AICc$	df	wAICc	
model_exp_soil_urb_inf_per = glmer(N_ ROADKILL~exp_soil + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	551.8	0.0	8	0.5792	
model_exp_soil_urb_inf_per_int = glmer(N_ ROADKILL~exp_soil * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	553.0	1.2	9	0.3166	
model_water_exp_soil_per_int = glmer(N_ ROADKILL~water * exp_soil + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	556.6	4.8	9	0.0513	
model_exp_soil_urb_inf_per = glmer(N_ ROADKILL~exp_soil + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	559.3	7.5	8	0.0133	
model_wetland_urb_inf_per = glmer(N_ ROADKILL~ wetland + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	560.1	8.3	8	0.0089	

model_wetland_urb_inf_per_int = glmer(N_ ROADKILL~ wetland * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	560.8	9.0	9	0.0066
model_exp_soil_urb_inf_per_int = glmer(N_ ROADKILL~exp_soil * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	561.2	9.4	9	0.0053
model_water_urb_inf_per = glmer(N_ ROADKILL~ water + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	561.7	9.9	8	0.0041
model_spa_veget_urb_inf_per = glmer(N_ ROADKILL~spa_veget + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	562.0	10.2	8	0.0036
model_den_veget_urb_inf_per = glmer(N_ ROADKILL~den_veget + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	5 km	562.5	10.7	8	0.0028

E. sexcinctus

Model	Buffer	AICc	ΔAICc	df	wAICc
model_spa_veget_urb_inf_per = glmer(N_ ROADKILL~spa_veget + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	479.7	0.0	8	0.5092
model_spa_veget_urb_inf_per_int = glmer(N_ ROADKILL~spa_veget * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	480.0	0.4	9	0.4200
model_farming_urb_inf_per = glmer(N_ ROADKILL~farming + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	486.1	6.4	8	0.0203
model_wetland_urb_inf_per_int = glmer(N_ ROADKILL~ wetland * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	486.9	7.3	9	0.0135
model_farming_urb_inf_per_int = glmer(N_ ROADKILL~farming * urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	488.1	8.5	9	0.0073
model_wetland_urb_inf_per = glmer(N_ ROADKILL~ wetland + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	488.3	8.7	8	0.0067
model_urb_inf = glmer(N_ ROADKILL~ urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	489.0	9.3	7	0.0048
model_urb_inf_per = glmer(N_ ROADKILL~ urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	489.0	9.3	7	0.0048
model_water_urb_inf_per = glmer(N_ ROADKILL~ water + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	489.5	9.9	8	0.0037
model_den_veget_urb_inf_per = glmer(N_ ROADKILL~den_veget + urb_inf + period + UC + (1 year) + (1 road/km), family = 'poisson')	1 km	490.4	10.8	8	0.0023