

Monitoring the use of a canopy bridge and underpasses by arboreal mammals on a Brazilian coastal road

Ingridi Camboim Franceschi^{a,b,*}, Bibiana Terra Dasoler^{a,b}, Talita Menger^{a,b}, Andreas Kindel^{a,b}, Franciane Almeida da Silva^c, Júlio Cezar Gonçalves Leonardo^c, Ricardo Miranda Braga^c and Fernanda Zimmermann Teixeira^{a,b}

^aPrograma de Pós-Graduação em Ecologia, Departamento de Ecologia, Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, 90660900, Brazil

^bNúcleo de Ecologia de Rodovias e Ferrovias (NERF), Departamento de Ecologia, Universidade Federal do Rio Grande do Sul, Porto Alegre, RS, Brazil

^cSociedade Sinhá Laurinha, Vila Velha, ES, Brazil

*Corresponding author; e-mail: ingridicfranceschi@hotmail.com

ORCID iDs: Franceschi: 0000-0002-9429-127X; Dasoler: 0000-0001-7466-6719; Kindel: 0000-0002-6358-1450; Zimmermann Teixeira: 0000-0002-5634-5142

Supplementary material

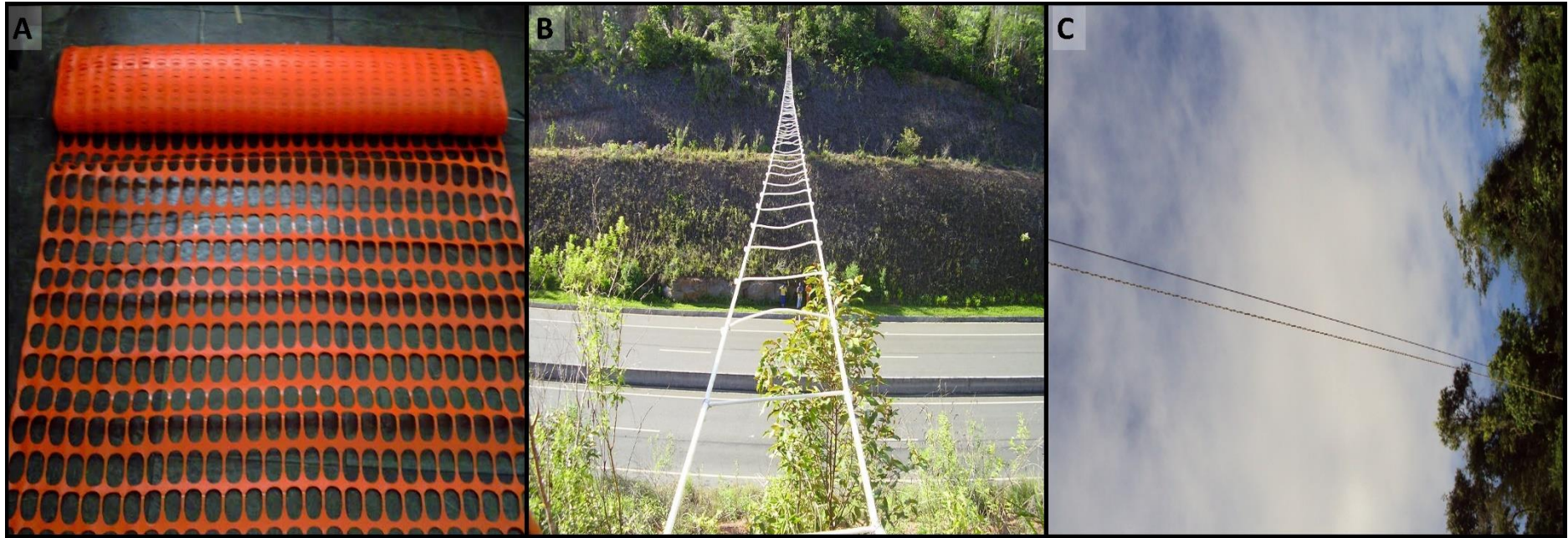


Figure S1. Illustrations of the first three canopy bridge designs installed on Highway ES-060 and removed due to their instability and low safety. (A) Example of the debris safety nets used to build the first canopy bridge design, (B) ladder-shaped rope bridges installed, and (C) interlaced ropes design.

Table S1. Characteristics of each underpass in each mitigation cluster on Highway ES-060. For each mitigation cluster we informed the type, number, dimensions, and exact location of each encompassing underpass (and accompanying fences when applicable), also whether they were surveyed with sand beds or not (and survey duration) and the number of crossing records for each species. The symbol ø means diameter and it is used for the circular underpasses. The column length refers to the length under the road for the underpasses and to the length of the fence along the highway for the fences.

MITIGATION STRUCTURE	NUMBER INSTALLED	WIDTH (m) / DIAMETER (m)	HEIGHT (m)	LENGTH (m)	LOCATION (km)	SURVEY (months)	RECORDS		
							<i>Callithrix geoffroyi</i>	<i>Coendou insidiosus</i>	<i>Didelphis aurita</i>
km 45 Mitigation Cluster									
Single concrete box	2	2.5	2.5	26	45.3	41	39	197	495
				33	45.7	41	29	103	438
Single concrete culvert	2	ø 1.50	-	36.5	45.6	41	-	6	54
				38	46.2	No	-	-	-
Double concrete culvert	1	ø 1.50	-	51	44.8	No	-	-	-
Triple concrete culvert	2	ø 1.20	-	36	44.2	No	-	-	-
				39	45.4	41	-	4	91
Bridge over the Perocão River	1	3.5	22.5	21	46.4	No	-	-	-
Fences on the right roadside (Southwards)									
Welded wire mesh									
<i>15 cm vertical wire spacing and bottom 6''; 10 cm and top 3''; 20 cm horizontal wire spacing</i>	-	-	1.2	188	-	-		-	
Chain link wire	-	-	1.2	460	-	-		-	

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							<i>Callithrix geoffroyi</i>	<i>Coendou insidiosus</i>	<i>Didelphis aurita</i>
<i>3'' mesh and 14-gauge fence</i>									
Fences on the left roadside (Southwards)									
Welded wire mesh									
<i>15 cm vertical wire spacing and bottom 6'': 10 cm and top 3'': 20 cm horizontal wire spacing</i>	-	-	1.2	969	-	-		-	
Chain link wire									
<i>3'' mesh and 14-gauge fence</i>	-	-	1.2	464	-	-		-	
km 50 Mitigation Cluster									
Single concrete culvert	2	ø 1.50	-	116.9	50	41	-	5	109
Fences on the right roadside (Southwards)									
Welded wire mesh									
<i>15 cm vertical wire spacing and bottom 6'': 10 cm and top 3'': 20 cm horizontal wire spacing</i>	-	-	1.2	400	-	-		-	
Chain link wire									
<i>3'' mesh and 14-gauge fence</i>	-	-	1.2	400	-	-		-	
Fences on the left roadside (Southwards)									
Welded wire mesh									
<i>15 cm vertical wire spacing and bottom 6'': 10 cm and top 3'': 20 cm horizontal wire spacing</i>	-	-	1.2	400	-	-		-	

MITIGATION STRUCTURE	NUMBER INSTALLED	WIDTH (m) / DIAMETER (m)	HEIGHT (m)	LENGTH (m)	LOCATION (km)	SURVEY (months)	RECORDS		
							<i>Callithrix geoffroyi</i>	<i>Coendou insidiosus</i>	<i>Didelphis aurita</i>
Chain link wire 3'' mesh and 14-gauge fence	-	-	1.2	400	-	-	-	-	-
km 59 Mitigation Cluster									
Single concrete culvert	1	ø 1.50	-	53	59.7	41	-	76	428
Double concrete culvert	1	ø 1.50 and 1.20	-	62	59.9	No	-	-	-
		ø 1.50 and 1.00	-	59	60.2	41	-	6	105
Fences on the right side (Southwards)									
Welded wire mesh <i>15 cm vertical wire spacing and bottom 6'': 10 cm and top 3'': 20 cm horizontal wire spacing</i>	-	-	1.2	800	-	-	-	-	-
Fences on the left side (Southwards)									
Welded wire mesh <i>3'' mesh and 14-gauge fence</i>	-	-	1.2	800	-	-	-	-	-



Figure S2. Representation of all types of underpasses installed on three mitigation clusters on Highway ES-060. (A) Single concrete box at km 45, (B) Single concrete culvert at km 45, (C) Double concrete culvert at km 59, (D) Triple concrete culvert at km 45.

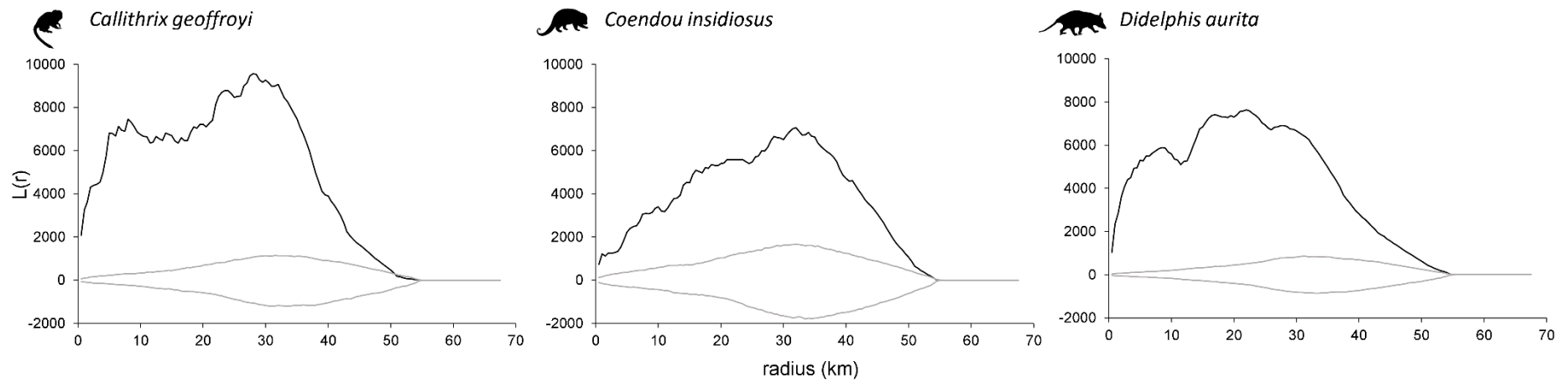


Figure S3. Roadkill aggregation intensity (L statistics) at various scales from the 2D Ripley's K analysis performed for the three arboreal mammal species recorded on Highway ES-060 using the Siriema v.2 software. Scales for which the L(r) function (black line) exceeds the upper confidence limit (gray lines; 95%) indicate the occurrence of significant roadkill aggregations.