

Supplementary Material 1. Observation report about the daily nesting activities of the Southern House Wren. Figures are referring to those in the main text.

25 November - 10 December 2019. In five days of nesting attempts (without remembering the exact days), BAD found nesting material inside the helmet each day at lunchtime. Because he used the motorcycle, he cleaned the helmet by throwing out all material to the ground. In the early of afternoon, he parked the motorcycle in the parking lot and left the helmet on the handlebar. At 17:00 h when he left work, the helmet was filled with nesting materials, indicating that nest building was initiated twice on the same day.

The afternoon of 11 December 2019, ERA observed two wrens on the helmet on three occasions, one carrying an approximately 10 cm long twig into the helmet. By the afternoon, a large amount of nesting material has been deposited (Figure 4), indicating a nesting attempt.

12 December 2019. We started camera trapping at 09:00 h, two hours after the motorcycle and helmet were left in the parking lot. The first video was initiated within five minutes after the camera was turned on, with wrens inspecting the site, which suggests that the birds had been visiting the helmets before (Figure 3b). On 13 December 2019, the birds were captured on video at 07:03 h, three minutes after the helmet became available in the parking lot, with a wren inspecting the helmet (Figure 3b). These data suggest that the interest of the wrens in the helmet started as soon as it appeared at the site.

When we set the camera at 09:00h, we found no nesting material deposited inside the helmet. The first video that showed nesting material being left inside the helmet occurred at 09:49 h, almost three hours after the helmet became available. Considering the number of observed behaviors throughout the day as a rate of nest building activities, the deposition of nesting material was most frequent between 09:56 h and 10:27 h, when no other behavior type was observed (17 visits within this interval, Figure 3b). Throughout the day, the camera captured 55 visits by wrens carrying nesting material and 54 records of 'other nest building behavior'. At the end of the day, a large volume of twigs was deposited inside the helmet (Figure 1c). Although we did not quantify these items, our records indicate that the rate of nest construction was similar to that on 11 December 2019.

13 December 2019. Even though a large volume of twigs was left inside the helmet by the end of the day (Appendix Table A1, video 14), unfortunately the camera malfunctioned and only captured 20 depositions of nesting material in the helmet and 23 records of 'other nest building behavior' (Figure 3b). However, based on the 45 videos on this day and our opportunistic observations, we believe that the rate of nest construction was similar to that on 11 and 12 December 2019. At 09:51 h, we observed no nesting material inside the helmet and the first deposition of nesting material was captured later, at 10:47 h (Figure 3b). Thus, nesting material was left in the helmet several times during the next six hours, which resulted in the large number of twigs observed in the last video (Appendix Table A1, video 14).

Supplementary Material 2. (a) Southern house wren observed in the helmet on 11 December, 2019 at the urban park Museu de Biologia Prof. Mello Leitão, in Santa Teresa, Espírito Santo, Brazil, with a metal band visible on its tarsus. (b, c, d) Scenes from videos of an individual that seemed to be marked with a metal band. Given the low resolution of the camera and the whitish color of the tarsus of the wren, it was not possible to ascertain if this banded individual was in our recorded videos (Appendix Table A1, video 07, 08 and 11).



Supplementary Material 3. We identified 24 different human-made structures used by the Southern House Wren in urban ecosystem, from 86 records of urban nests of deposited in three crowdsourcing citizen science platform for sharing bird records (eBird, iNaturalist and Wiki Aves). In use means the item was not abandoned.

Human-made structure	Example/source	Number of records of birds using this type of structure	Number of records with breeding success in this type of structure
Decorative ceramic artifact for gardens	https://www.wikiaves.com.br/278623	1	1
Abandoned metal bucket	https://www.wikiaves.com.br/2907170	1	1
Cavity of a lamp used for interior lighting	https://www.wikiaves.com.br/404368		
Hole in pole of street lighting	https://www.wikiaves.com.br/3124446	6	2
Hole in a wall	https://www.wikiaves.com.br/1904968	9	3
Hole in indoor or outdoor ceiling	https://www.wikiaves.com.br/743323	4	3
Mailbox (in use)	https://www.wikiaves.com.br/3299328	1	1
Electrical box	https://www.wikiaves.com.br/2157975	2	1
Metal/PVC pipe	https://www.wikiaves.com.br/2806157	1	
Hole in a pole supporting a parabolic antenna	https://www.wikiaves.com.br/3185591	1	1
Cavity in cover of electric or telephone cable (outdoors)	https://www.wikiaves.com.br/3516204	1	1
Cavity in a wood table	https://www.wikiaves.com.br/1566799	1	
Straw hat (in use)	https://www.wikiaves.com.br/1974674	1	
Inside the fork of a bicycle (in use)	https://www.wikiaves.com.br/599983	1	1
In a closed sun umbrella	https://www.wikiaves.com.br/519244	1	
Artificial nest made of bamboo	https://www.wikiaves.com.br/1520036	3	1
Artificial nest made of dried gourd	https://www.wikiaves.com.br/288649	6	5
Artificial nest – little house made of wood	https://www.wikiaves.com.br/1172454	14	11
Artificial nest made of coconut	https://www.wikiaves.com.br/2391680	1	1
Artificial nest made of Brazil nut	https://www.wikiaves.com.br/1392527	1	1
Artificial nest made of ceramic or clay	https://www.wikiaves.com.br/3227832	3	2
Shoes or boots	https://www.wikiaves.com.br/1113483	6	5
Plant pot	https://www.wikiaves.com.br/1527205	2	1
Abandoned metal/plastic container	https://www.wikiaves.com.br/4081992	1	1

Supplementary Material 4. Southern House Wren nests that were built in unstable human-made structures and at places that seemed unsafe. Data are from Wiki Aves (crowdsourcing citizen science platform). According to the authors of the pictures, fledglings were present in four of the seven nests, suggesting successful breeding.

Human-made structure	Source	Evidence of potentially successful breeding
Straw hat (in use)	https://www.wikiaves.com.br/1974674	
Between the fork of a bicycle (in use)	https://www.wikiaves.com.br/599983	Yes
In a closed sun umbrella	https://www.wikiaves.com.br/519244	
Shoe/ sneaker/ boot	https://www.wikiaves.com.br/155086	Yes
Shoe/ sneaker/ boot	https://www.wikiaves.com.br/1583355	Yes
Shoe/ sneaker/ boot	https://www.wikiaves.com.br/1705317	
Shoe/ sneaker/ boot	https://www.wikiaves.com.br/2364178	Yes

Supplementary Material 5. Characteristics of Southern House Wren nests built in suitable and unsuitable human-made structures in urban and rural landscapes, obtained from Wiki Aves, eBird, and iNaturalist for Brazil in 2003-2020. It was not possible to identify the stability and safety of all nest records on human-made structures, therefore the percentage of use and breeding success are based only on classified nests, excluding records of empty nests without comments about nest use or breeding. Rural records are showed to highlight that there were similar rates of nesting reports from urban and rural landscapes.

Landscape	Number of nests reported	Number of nests on human-made structures	stable + safe (suitable)			unstable + unsafe (unsuitable)		
			n	Nest use	Signs of successful breeding	n	Nest use	Signs of successful breeding
Urban	100	86	71	54 (76%)	34 (47.8%)	7	7 (100%)	4 (57.1%)
Rural	105	87	70	55 (78.5%)	39 (55.7%)	7	7 (100%)	6 (85.7%)

Appendix Table A1. Fifteen camera trap videos that exemplify behavior types of Southern House Wrens when they were building a nest in a helmet. Behavior types are described in the main text of manuscript. Videos are available on YouTube, an open and popular video sharing website, in order to reach a broader audience.

YouTube video	Link
Video 01	https://youtu.be/Og-ryegmUn0
Video 02	https://youtu.be/dUNRsm5zNtY
Video 03	https://youtu.be/31XA7SmOkD0
Video 04	https://youtu.be/64NbYYeZ9mw
Video 05	https://youtu.be/VSitmff_luw
Video 06	https://youtu.be/_7RwPCBA7hU
Video 07	https://youtu.be/CJp0FueTfrU
Video 08	https://youtu.be/oMqiQSDumJs
Video 09	https://youtu.be/rJFBFmmnGro
Video 10	https://youtu.be/g8elcpX6ydQ
Video 11	https://youtu.be/5b-Qwn4SwD4
Video 12	https://youtu.be/LgyDo10gCRw