



# Notes on the Natural History of Wallace’s Racer, *Wallaceophis gujaratensis* (Colubridae), in Gujarat, India

Raju Vyas<sup>1</sup> and Faruk Chauhan<sup>2</sup>

<sup>1</sup>1–Sashwat Apartment, BPC-Haveli Road, Nr. Splatter Studio, Alakapuri, Vadodara–390007, Gujarat, India (razoovyas@hotmail.com [corresponding author])

<sup>2</sup>Laxmipara, Dudhrej Road, Surendranagar–363 001, Gujarat, India (fdchauhan@gmail.com)

Wallace’s Racer (*Wallaceophis gujaratensis*) (Fig. 1) was recently described as a Gujarat endemic (Mirza et al. 2016). Sightings have been recorded from a few localities in the state (Vyas et al. 2019; Maheta et al. 2020), and the distribution of the species appears to be confined to Saurashtra and central Gujarat (Patel and Vyas 2019). However, information on natural history is limited to some descriptive anecdotes in Vyas et al. (2019). Herein we present some new and valuable information on the natural history of this species, with comments on natural history based on direct observations and unpublished data from an ongoing study on the breeding biology of nocturnal birds of prey.

As part of a seven-year study on the breeding biology of the Indian Eagle-Owl (*Bubo bengalensis*), we tracked a small population of Indian Eagle-Owls near Wadhwan, Surendranagar District, Gujarat, India. A few active regularly

monitored pairs bred on the cliffs of abandoned stone quarries (22°41’12.72”N; 71°39’54.52”E) (Chauhan 2013). In March 2013, a parent returned to the nest with a dead snake to feed the chicks (Fig. 2). The half-eaten snake measured approximately 25 cm in length. About 30 minutes later, the same dead snake was torn apart by the parent pair and was fed bit-by-bit to the chicks. Based on external characteristics of the snake evident in the series of photographs documenting the event, it was confirmed to be a Wallace’s Racer.

The Short-toed Snake Eagle (*Circaetus gallicus*) also is a natural predator of *Wallaceophis gujaratensis* (Mori et al. 2017; Vyas et al. 2019) (Fig. 3). Whereas Short-toed Snake Eagles are diurnally active and known to forage only during daylight hours, Indian Eagle-Owls are nocturnal and limit their hunting activities to nighttime and low-light conditions. Consequently, a diurnal snake being killed and consumed by



Fig. 1. A Wallace’s Racer (*Wallaceophis gujaratensis*) from Halol, Panchmahal District, Gujarat, India. Photograph by Raju Vyas.



**Fig. 2.** A partially eaten Wallace’s Racer (*Wallaceophis gujaratensis*) and one-week-old Indian Eagle-Owl (*Bubo bengalensis*) chicks. Photograph by Faruk Chauhan.



**Fig. 3.** A Short-toed Snake Eagle (*Circaetus gallicus*) feeding a large Wallace’s Racer (*Wallaceophis gujaratensis*) to its seven-week-old chicks. Photograph by Devratsinh Mori.

the hatchlings of nocturnal bird species would appear to be an unusual occurrence.

During the last three years, we have found nine road-killed Wallace’s Racers in Surendranagar District, Gujarat (Table 1; Figs. 4–6). All were encountered either during the late evening or early morning hours. These road-kill data and the capture of a snake by an Indian Eagle-Owl suggest that these snakes do not limit activity to daytime periods but remain active during crepuscular periods.

The numbers of road-killed snakes would indicate that vehicular traffic is a threat to the species. Nevertheless, the presence of *Wallaceophis gujaratensis* in habitats that vary from arid, thorny scrublands to agricultural fields and newly developed suburban fringes across eleven districts of Gujarat — Ahmedabad (Bopal, Khengariya, Viramgam), Amreli (Amreli city, Saladi), Aravalli (Bayad), Bhavnagar (New Port, Sagwadi), Jamnagar (Bhanvad), Panchmahal (Halol), Patan (outskirts of

**Table 1.** Road-killed Wallace’s Racers (*Wallaceophis gujaratensis*) from Surendranagar District, Gujarat, India. SH = State Highway; NH = National Highway.

	Date	Locality	Total Length (cm)
1	5 July 2018	Sidhsar-Sayala Road, SH-21 (22°35’8.08”N; 71°28’44.86”E)	55
2	17 July 2018	Wadhavan-Kharva, Village Road (22°30’11.43”N; 71°29’0.97”E)	40
3	5 October 2018	Muli-Sayala Road, SH-21 (22°39’19.12”N; 71°39’17.81”E)	35
4	31 July 2019	Muli-Sayala Road, SH-21 (22°33’48.09”N; 71°28’52.22”E)	55
5	19 August 2019	Sidhsar-Sayala Road, SH-21 (22°33’26.17”N; 71°28’54.31”E)	50
6	2 July 2020	Muli-Sayala Road, SH-21 (22°36’59.42”N; 71°27’56.46”E)	65
7	2 July 2020	Muli-Sayala Road, SH-24 (22°37’42.07”N; 71°27’38.65”E)	56
8	31 July 2020	Muli-Surendranagar, NH-8A (22°40’0.42”N; 71°30’10.28”E)	45
9	1 October 2020	Bhaduka, Surendranagar NH-8A (22°32’49.72”N; 71°23’44.50”E)	60



**Fig. 4.** Road-killed Wallace’s Racers (*Wallaceophis gujaratensis*) from Surendranagar District, Gujarat, India (numbers correspond to those in Table 1): Sidhsar-Sayala Road (1); Wadhwan-Kharva Road (2); Muli-Sayala State Highway 21 (3 & 4); Sidhsar-Sayala State Highway 21 (5); Muli-Sayala State Highway 21 (6 & 7); Muli-Surendranagar National Highway 8A (8); Bhaduka-Surendranagar National Highway 8A (9). Photographs by Faruk Chauhan.

Patan City), Porbandar (Madhopur Ghed), Mehsana (Timba), Surendranagar (Bhaduka, Chotila, Kharva, Muli, Molad, Sayla, Sidhasar, Wadhvan), and Vadodara (Khatumba) — suggests that the species has successfully adapted to varying human-mediated alterations of its habitat.

**Acknowledgements**

We thank the State Forest Department, Gujarat, especially the Conservator of Forest and Deputy Conservator of Forest (Wildlife), Surendranagar, for support and encouragement. We also thank Khushboo Vyas for proofreading and improving the English draft and Devvratsinh Mori for providing the photograph in Fig. 3.

**Literature Cited**

Chauhan, F. 2013. A regular large clutch of the Indian Eagle Owl *Bubo bengalensis* from Gujarat: First record. *Ela Journal* 2(2): 4–6.

Patel, H. and R. Vyas. 2019. Reptiles of Gujarat, India: Updated checklist, distribution and conservation status. *Herpetology Notes* 12: 765–777.

Maheta, J., V. Varma, S. Patel, and A. Zala. 2020. Range extension of Wallace’s Striped Racer, *Wallaceophis gujaratensis* (Squamata: Colubridae), in north-central Gujarat, India. *Reptiles & Amphibians* 27: 83.

Mirza, Z.A., R. Vyas, H. Patel, J. Maheta, and R. Sanap. 2016. A new Miocene-divergent lineage of Old World racer snake from India. *PLoS ONE* 11: e0148380. <https://doi.org/10.1371/journal.pone.0148380>.

Mori, D., R. Vyas, and K. Upadhyay. 2017. Breeding biology of the Short-toed Snake Eagle *Circaetus gallicus*. *Indian Birds* 12: 149–156.

Vyas, R., D. Mori, K. Upadhyay, and H. Patel. 2019. Notes on Wallace’s Racer *Wallaceophis gujaratensis* (Serpentes, Colubridae): a recently described species endemic to Gujarat, India. *Herpetological Bulletin* 148: 29–31. <https://doi.org/10.33256/hb148.2931>.