

Blood on the Track: A Case of Mugger (Crocodylus palustris) Mortality in Jawai, Rajasthan, India

Ravi Kumar Sharma, Ashish Kumar Jangid, and Abhijit Das

Wildlife Institute of India, Dehradun, Uttarakhand–248001, India (kumarravi.sharma823@gmail.com [corresponding author], ashishjangid22@gmail.com, abhijit@wii.gov.in)

The Mugger, *Crocodylus palustris* (Lesson 1831), is widely distributed in India, Pakistan, Nepal, Bangladesh, Sri Lanka, and Iran (Choudhury and de Silva 2013). The species inhabits lakes, pools, rivers, and artificial bodies of water (da Silva and Lenin 2010; Choudhury and de Silva 2013). It is listed as Vulnerable on the IUCN Red List largely because infrastructural development is negatively affecting populations throughout its range (Choudhury and de Silva 2013).

Linear infrastructure such as roads and railways are known to have both direct and indirect effects on wildlife populations (Jackson 2000), and direct mortality by rail on large animals has been documented (e.g., Dodd et al. 1989; Mobaraki and Abtin 2007; Wilson 2011; Roy and Sukumar 2017). In India, 38 incidents involving crocodile mortality on roads (24 cases) and railways (14 cases) were reported between 2005 and 2018 in Gujarat (Vyas 2014; Vyas and Vasava 2019).



Fig. 1. The separated remains of a Mugger (*Crocodylus palustris*) on the railway track near the Raghunathpura Dam, Rajasthan, India. Photographs by Ravi Kumar Sharma.

On 26 March 2017, we encountered a dead Mugger (Fig. 1) on the railway track passing through the proposed Jawai Leopard Community Conservation Reserve, Rajasthan, in northwestern India (25.04748°N, 73.13236°E). We found the carcass in two pieces. The anterior portion of the body with the head was 3 m from the rest of the body. The total length of the dead animal was approximately 2 m. The incident occurred almost 220 m from the nearest water at the Raghunathpura Dam (Fig. 2), where Muggers have been



Fig. 2. Map showing the site where a Mugger (*Crocodylus palustris*) was found dead on a railway track (marked by a red dot). The green arrow indicates the probable movement of the Mugger from nearest freshwater location (approx. 220 m).

reported previously. This is the first record of freshwater crocodile mortality by train in Rajasthan.

Photographs of the dead individual have been deposited in the Lee Kong Chian Natural History Museum, National University of Singapore [ZRC(IMG) 2.331a; ZRC(IMG) 2.331b; ZRC(IMG) 2.331c].

Acknowledgements

The current incident was recorded during a M.Sc. study. We thank the Rajasthan Forest Department and Wildlife Institute of India, Dehradun, for permission to conduct this research. We also thank local forest staff and Prof. Qamar Qureshi for their help during the study.

Literature Cited

- Choudhury, B.C. and A. de Silva. 2013. Crocodylus palustris. The IUCN Red List of Threatened Species 2013: e.T5667A3046723. https://dx.doi.org/10.2305/IUCN.UK.2013-2.RLTS.T5667A3046723.en.
- da Silva, A. and J. Lenin. 2010. Mugger Crocodile *Crocodylus palustris*, pp. 94–98. In: S.C. Manolis and C. Stevenson (eds.), *Crocodiles: Status Survey and Conservation Action Plan. Third Edition*. IUCN SSC Crocodile Specialist Group, Darwin, Australia.
- Dodd, C.K., K.M. Enge, and J.N. Stuart. 1989. Reptiles on highways in north-central Alabama, USA. *Journal of Herpetology* 23: 197–200. https://doi.org/10.2307/1564036.
- Jackson, S.D. 2000. Overview of transportation impacts on wildlife movement and populations, pp. 7–20. In: T.A. Messmer and B. West (eds.), Wildlife and Highways: Seeking Solutions to an Ecological and Socio-economic Dilemma. The Wildlife Society, Bethesda, Maryland, USA.
- Mobaraki, A. and E. Abtin. 2007. Movement behavior of muggers: a potential threat. *Crocodile Specialist Group Newsletter* 26(1): 4.
- Roy, M. and R. Sukumar. 2017. Railways and wildlife: A case study of train-elephant collisions in northern West Bengal, India, pp. 157–177. In: L. Bordade-Água, R. Barrientos, P. Beja, and H.M. Pereira (eds.), Railway Ecology. Springer International Publishing AG, Cham, Switzerland.
- Vyas, R. 2014. Roads and Railway: Cause for mortality of Muggers (*Crocodylus palustris*), Gujarat State, India. *Russian Journal of Herpetology* 21: 237–240. https://doi.org/10.30906/1026-2296-2014-21-3-237-240.
- Vyas, R. and A. Vasava. 2019. Mugger crocodile (Crocodylus palustris) mortality due to roads and railways in Gujarat, India. Herpetological Conservation and Biology 14: 615–626.