

## OPEN ACCESS



The Journal of Threatened Taxa is dedicated to building evidence for conservation globally by publishing peer-reviewed articles online every month at a reasonably rapid rate at [www.threatenedtaxa.org](http://www.threatenedtaxa.org). All articles published in JoTT are registered under [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/) unless otherwise mentioned. JoTT allows unrestricted use of articles in any medium, reproduction, and distribution by providing adequate credit to the authors and the source of publication.

# Journal of Threatened Taxa

Building evidence for conservation globally

[www.threatenedtaxa.org](http://www.threatenedtaxa.org)

ISSN 0974-7907 (Online) | ISSN 0974-7893 (Print)

## NOTE

### PHOTOGRAPHIC EVIDENCE OF STRIPED HYENA *HYAENA HYAENA* (MAMMALIA: CARNIVORA: HYAENIDAE) IN RAMNAGAR FOREST DIVISION, UTTARAKHAND, INDIA

Vipul Maurya, Jai Pratap Singh, Kahkashan Naseem, Surender Mehra,  
Parag M. Dhakate, Neha Verma & A.G. Ansari

26 December 2018 | Vol. 10 | No. 15 | Pages: 13017–13019  
10.11609/jott.3555.10.15.13017-13019



For Focus, Scope, Aims, Policies and Guidelines visit <https://threatenedtaxa.org/index.php/JoTT/about/editorialPolicies#custom-0>  
For Article Submission Guidelines visit <https://threatenedtaxa.org/index.php/JoTT/about/submissions#onlineSubmissions>  
For Policies against Scientific Misconduct visit <https://threatenedtaxa.org/index.php/JoTT/about/editorialPolicies#custom-2>  
For reprints contact [info@threatenedtaxa.org](mailto:info@threatenedtaxa.org)

## Partners



المحمد بن زايد  
للمحافظة على  
الكائنات الحية  
The Mohamed bin Zayed  
SPECIES CONSERVATION FUND



Member



Publisher & Host





# PHOTOGRAPHIC EVIDENCE OF STRIPED HYENA *HYAENA HYAENA* (MAMMALIA: CARNIVORA: HYAENIDAE) IN RAMNAGAR FOREST DIVISION, UTTARAKHAND, INDIA

Vipul Maurya<sup>1</sup>, Jai Pratap Singh<sup>2</sup>, Kahkashan Naseem<sup>3</sup>, Surender Mehra<sup>4</sup>, Parag M. Dhakate<sup>5</sup>, Neha Verma<sup>6</sup> & A.G. Ansari<sup>7</sup>

<sup>1</sup>School of Forestry and Environment, Sam Higginbottom Institute of Agriculture, Technology and Sciences, Allahabad, Uttar Pradesh 211007, India

<sup>2</sup>Resham Majri Village, Dehradun, Uttarakhand 248140, India

<sup>3</sup>Divisional Forest Officer, Tarai West Forest Division, Uttarakhand 244715, India

<sup>4</sup>Director, Corbett Tiger Reserve, Ramnagar, Nainital District, Uttarakhand 244715, India

<sup>5</sup>Conservator of Forests, Western Circle, Haldwani, Uttarakhand 263139, India

<sup>6</sup>Divisional Forest Officer, Ramnagar Forest Division, Uttarakhand 244715, India

<sup>7</sup>Conservationist, Village-Mohan, Ramnagar, Nainital, Uttarakhand 244715, India

<sup>1</sup>vipul@wii.gov.in (corresponding author), <sup>2</sup>jps@gmail.com,

<sup>3</sup>kahkashan.naseem@gmail.com, <sup>4</sup>surenmehra@gmail.com,

<sup>5</sup>paragenetics@gmail.com, <sup>6</sup>dforamnagar@rediffmail.com,

<sup>7</sup>agansari@gmail.com

The Striped Hyena *Hyaena hyaena* has a large but inconsistent range extending from eastern Africa through the Middle East to India. The Striped Hyena is classified as Near Threatened on the IUCN Red List because of persecution, depletion of prey, and its habitat being converted to agricultural lands (Arumugam et al. 2008). It is also a known fact that hyenas are scavengers in their

habitat (Kruk 1976; Prater 1980; MacDonald 1984; Boitani & Bartoli 1986; Hofer 1998; Menon & Daniel 2003) but there were accounts of them feeding on insects, reptiles, rodents, birds, vegetables, and livestock (Heptner & Sludsky 1972; Rieger 1981; Mills & Hofer 1998; Lukarevsky 2001; Singh et al. 2010).

The species is known to exist around human settlements and to survive by consuming dried bones, carcasses, and fruits (Kruk 1976; Hofer 1998). In India, Striped Hyenas occur in arid and semi-arid ecosystems (Alam et al. 2014) and are also known to occur sympatrically with tigers (Prater 1971; Menon 2003; Harihar et al. 2010).

There is considerable evidence of the presence of hyenas in the Terai region of northern India — the first estimation of their population carried out in a moist mixed deciduous forest in Rajaji National Park indicated the presence of the species in low density, as these areas are highly disturbed. These habitats have a notable population of tigers and are similar to that of Ramnagar Forest Division (Harihar et al. 2010). Hyenas are one of the least studied large scavengers/carnivore species in India due to the dearth of its observed records. For instance, the Striped Hyena was last reported in Ramnagar Division, Uttarakhand, in the late 1970s (Working Plan Ramnagar Forest Division 1977).

This study was carried out in the Ramnagar Forest Division located in Uttarakhand (Fig. 1). The geographic extent of the area is from 78.10'–79.10 °E and 29.56–



ISSN 0974-7907 (Online)  
ISSN 0974-7893 (Print)

OPEN ACCESS



DOI: <https://doi.org/10.11609/jott.3555.10.15.13017-13019> | ZooBank: urn:lsid:zoobank.org:pub:34410CCD-B11B-40E8-A56C-D6DF78EA5867

Editor: Merwyn Fernandes, TRAFFIC, New Delhi, India.

Date of publication: 26 December 2018 (online & print)

Manuscript details: Ms # 3555 | Received 10 June 2017 | Final received 21 August 2018 | Finally accepted 05 November 2018

Citation: Maurya, V., J.P. Singh, K. Naseem, S. Mehra, P.M. Dhakate, N. Verma & A.G. Ansari (2018). Photographic evidence of Striped Hyena *Hyaena hyaena* (Mammalia: Carnivora: Hyaenidae) in Ramnagar forest division, Uttarakhand, India. *Journal of Threatened Taxa* 10(15): 13017–13019; <https://doi.org/10.11609/jott.3555.10.15.13017-13019>

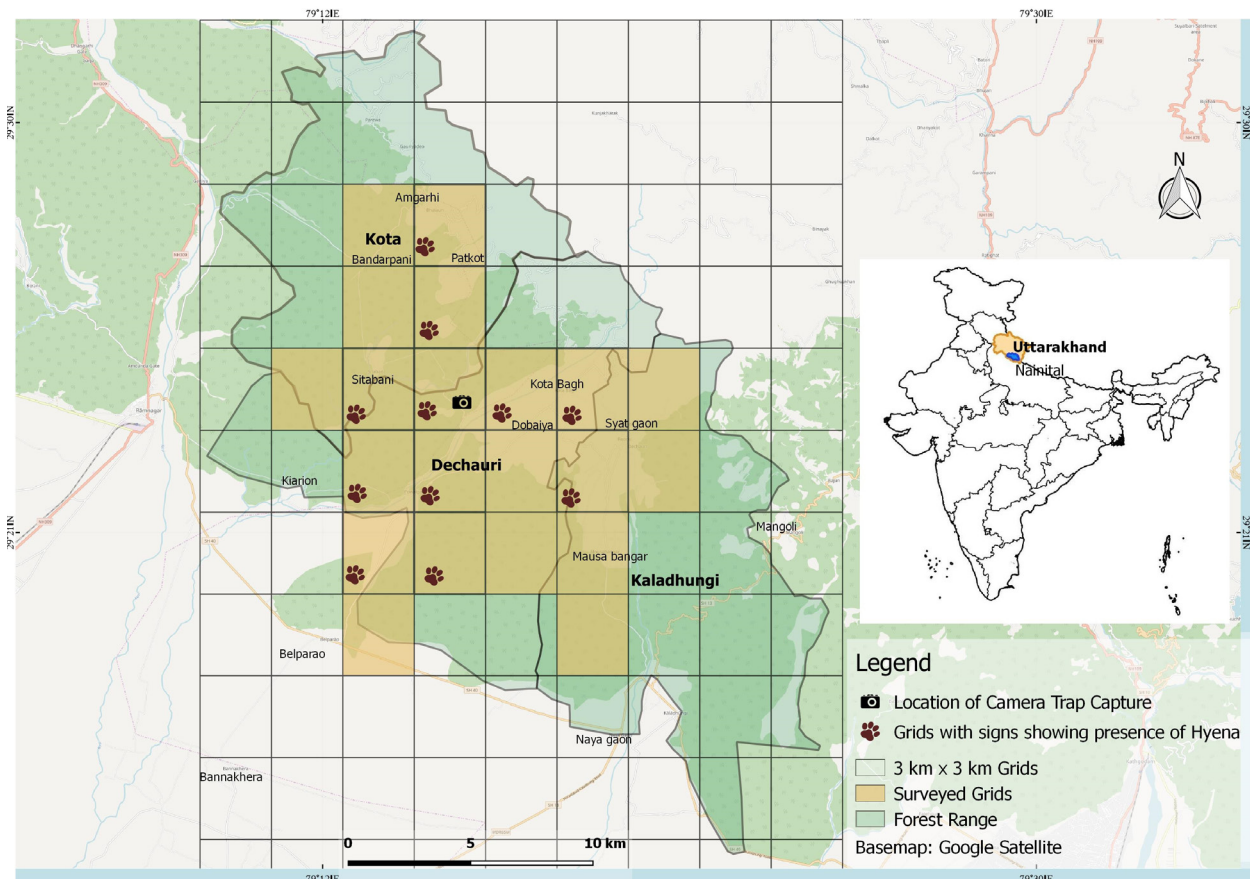
Copyright: © Maurya et al. 2018. Creative Commons Attribution 4.0 International License. JoTT allows unrestricted use of this article in any medium, reproduction and distribution by providing adequate credit to the authors and the source of publication.

Funding: None.

Competing interests: The authors declare no competing interests.

Acknowledgements: We are grateful to the additional principal conservator chief of forests (APCCF), Mr. Paramjit Singh, for his constant guidance and encouragement. We are thankful to the staff of the Ramnagar Forest Division for their valuable support during the field survey. Also, I thank my colleagues Dr. Shankar Kumar and Dr. Chaitanya Verma for providing the necessary information and support.





**Figure 1.** Map showing grids surveyed for the presence of Striped Hyena and locations of camera traps in Ramnagar Forest Division, Uttarakhand

29.55 °N and it covers a total of 48,736.90ha. The Ramnagar Forest Division is a forested landscape on the eastern boundary of the Corbett Tiger Reserve and northwestern boundary of the Terai Central Forest Division and Terai West Forest Division. It falls within the western circle of the Kumaun Forest and constitutes five forest ranges, namely, Kosi, Kota, Dechauri, Fatehpur, and Kaladhungi, which are interconnected by a trail of dense mixed forests from the eastern boundary of the Corbett Tiger Reserve up to Kaladhungi. The area is rich in faunal diversity, namely, tigers, elephants, leopards, ungulates, reptiles, and fish. The study targeted three of the forest ranges, namely, Dechauri, Kaladhungi, and Kota, which were identified on the basis of the presence of Hyena signs during a preliminary survey conducted from March to December 2015. These ranges were further divided into grids of 3kmx3km and transects were laid in each grid. Confirmed signs for the species were recorded from 11 grids; these signs formed the basis for sites of camera traps, which provided photographic evidence of the species.

Here we report the first photographic image of a Striped Hyena in Ramnagar Forest Division, Uttarakhand (Image 1a captured on 12-07-2015 at 10:40hr). During camera trap survey from March to December 2015, a single image of a Striped Hyena was captured on camera. A total of 26 signs (Image 1b representing fresh pug-mark sign captured on 06-07-2015 at 07:15hr) were recorded during the survey at 11 different grids. The overall encounter rate was 1.39/km. The camera point where the image was captured was near Haathi Galiyaar Forest Barrier in Ramnagar Forest Division (29.55°N / 79.25°E) from which the nearest human settlement and water body (Dabka River) are 2km and 1km away, respectively. During the previous surveys conducted for monitoring Tigers, co-predators, prey and their habitats conducted in 2010, 2012, 2014, and 2016, there was no indirect sign/photographic evidence to confirm the presence of hyenas in the area. The only information regarding its presence was mentioned in the Working Plan Ramnagar Forest Division (1977). In the working plans published after 1977, there was no mention of this particular





Image 1. a - Camera trap image of Striped Hyena *Hyaena hyaena* recorded near Haathi Galiyaar Forest Barrier, b - pug mark of hyena found in Ramnagar Forest Division, Uttarakhand

species. The substantial proof of the presence of the Striped Hyena in Ramnagar Forest Division presented in this study can create opportunities for further research on the ecology, behaviour, and population estimation specific for the species in this region.

## References

- Alam, M.S., J.A. Khan, S.P. Kushwaha, R. Agrawal, B.J. Pathak & S. Kumar (2014). Assessment of suitable habitat of Near Threatened Striped Hyena (*Hyaena hyaena* Linnaeus, 1758) using remote sensing and geographic information system. *Asian Journal of Geoinformatics* 14(2): 860–866.
- Arumugam, R., A. Wagner & G. Mills (2008). *Hyaena hyaena*. In: IUCN Red List of Threatened Species, Version 2. <http://www.iucnredlist.org>. Downloaded on 10 september 2017.
- Boitani, L. & S. Bartoli (1986). *The MacDonald Encyclopedia of Mammals*. MacDonald & Co. Ltd., London, 157–164pp.
- Harihar, A., M. Ghosh, M. Fernandes, B. Pandav & S.P. Goyal (2010). Use of photographic capture-recapture sampling to estimate density of Striped Hyena (*Hyaena hyaena*): implications for conservation. *Mammalia* 74(1): 83–87; <https://doi.org/10.1515/mamm.2009.072>
- Heptner, V.G. & A.A. Sludsky (1972). *Mammals of the Soviet Union: Carnivores (Hyenas and Cats)*, Vol. 2, Part 2. Vysshaya Shkola, Moskva, 784pp.
- Hofer H. (1998). Species accounts, pp. 18–38. In: Mills G. & H. Hofer (eds.). *Status Survey and Conservation Action Plan Hyenas*. IUCN/SSC Hyena Specialist Group, Oxford, U.K.
- Kruuk, H. (1976). Feeding and social behavior of the Striped Hyena (*Hyaena vulgaris* Desmarest). *African Journal of Ecology* 14(2): 91–111.
- Lukarevsky, V.S. (2001). *The Leopard, Striped Hyena, and Wolf in Turkmenistan*. Signar, Moscow, 128pp.
- MacDonald, D.W. (Ed.) (1984). *The Encyclopaedia of Mammals*. Greenwich Editions, London, 154–159pp.
- Menon, V. (2003). *Field Guide to Indian Mammals*. Dorling Kindersley & Penguin Books, India, 201pp.
- Mills, G. & H. Hofer (1998). Status Survey and Conservation Action Plan Hyenas. IUCN/SSC Hyena Specialist Group, Oxford, U.K., 109–130pp.
- Prater, S.H. (1971). *The Book of Indian Animals*. Oxford University Press, Oxford, 347pp.
- Prater, S.H. (1980). *The Book of Indian Animals*. Bombay Natural History Society, Bombay & Oxford University Press, London, 324pp.
- Rieger, I. (1981). *Hyaena hyaena*. *Mammal Species* 150: 1–5.
- Singh, P., A.M. Gopalaswamy & K.U. Karanth (2010). Factors influencing densities of Striped Hyenas (*Hyaena hyaena*) in arid regions of India. *Journal of Mammalogy* 91(5): 1152–1159.
- Working Plan Ramnagar Forest Division (1977). Western Circle, Uttar Pradesh.





OPEN ACCESS



The Journal of Threatened Taxa is dedicated to building evidence for conservation globally by publishing peer-reviewed articles online every month at a reasonably rapid rate at [www.threatenedtaxa.org](http://www.threatenedtaxa.org). All articles published in JoTT are registered under [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/) unless otherwise mentioned. JoTT allows unrestricted use of articles in any medium, reproduction, and distribution by providing adequate credit to the authors and the source of publication.

ISSN 0974-7907 (Online); ISSN 0974-7893 (Print)

December 2018 | Vol. 10 | No. 15 | Pages: 12907–13046

Date of Publication: 26 December 2018 (Online & Print)

DOI: 10.11609/jott.2018.10.15.12907-13046

[www.threatenedtaxa.org](http://www.threatenedtaxa.org)

## Articles

**Dietary preference and feeding patterns of the urban Rhesus Macaque *Macaca mulatta* (Mammalia: Primates: Cercopithecidae) in Asola-Bhatti Wildlife Sanctuary in India**

-- Ishita Ganguly & Netrapal Singh Chauhan, Pp. 12907–12915

**Postembryonic development of the Tri-spine Horseshoe Crab *Tachypleus tridentatus* (Merostomata: Xiphosura) in a nursery habitat in the Philippines**

-- Dorkas Kaiser & Sabine Schoppe, Pp. 12916–12932

## Communications

**Copulatory behavior of the Jaguar *Panthera onca* (Mammalia: Carnivora: Felidae)**

-- Pedro Nacib Jorge-Neto, Cristiane Schilbach Pizzutto, Gediendson Ribeiro de Araujo, Thyara de Deco-Souza, Leanes Cruz da Silva, Jorge Aparecido Salomão Jr. & Hernan Baldassare, Pp. 12933–12939

**Amphibians of the Dibang River Basin, Arunachal Pradesh: an annotated checklist with distribution records**

-- Jayanta K. Roy, Ramie H. Begum & M. Firoz Ahmed, Pp. 12940–12952

**Taxonomic studies on the gaudy grasshoppers (Orthoptera: Pyrgomorphoidea: Pyrgomorphidae) from the northeastern states of India**

-- M. Imran Khan, M. Kamil Usmani, Shahnaila Usmani & Hira Naz, Pp. 12953–12968

**Odonata (Insecta) diversity of Kuldiha Wildlife Sanctuary and its adjoining areas, Odisha, eastern India**

-- Subrat Debata & Kedar Kumar Swain, Pp. 12969–12978

## Short Communications

**On the diversity of the vertebrate fauna (excluding fishes) of Panchet Hill (Garh Panchkot), Purulia, West Bengal, India**

-- Sanjib Chattopadhyay, Somenath Dey & Utpal Singha Roy, 12979–12985

**First record of the rare Furry Lobster *Palinurellus wieneckii* (De Man, 1881) (Decapoda: Palinuridae) from the Arabian Sea**

-- K.K. Idreesbabu, C.P. Rajool Shanis & S. Sureshkumar, Pp. 12986–12989

**Description of life stages of dung beetle *Scaptodera rhammistus* (Fabricius, 1775) (Coleoptera: Scarabaeidae: Scarabaeinae) with notes on nesting and biology**

-- Suvarna S. Khadakar, Ashish D. Tiple & Arun M. Khurad, Pp. 12990–12994

**An updated list of Odonata of southwestern Bangladesh**

-- M. Sajjad Hossain Tuhin & M. Kawsar Khan, Pp. 12995–13001

**On the reproductive biology of *Salacia fruticosa* Wall. ex M.A. Lawson**

-- an endemic medicinal plant of the Western Ghats, India

-- K. Subin, P.A. Jose & T.V. Sarath, Pp. 13002–13005

## Partners



Member



Publisher & Host

