

Ratel *Mellivora capensis* in a human-dominated savanna landscape in Kachchh, Gujarat, India

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Abstract

Between January and May 2022, Ratel *Mellivora capensis* was recorded at night at five locations during camera-trapping surveys targeting small carnivores in the Kachchh (Kutch) savanna landscape of Gujarat, India. Informal opportunistic conversations with local villagers revealed that they held negative perceptions about the species – they opined that it is a large and ferocious animal capable of injuring, or even killing, humans. The fact that the Ratel is rarely seen, together with its depiction in the media as aggressive and indomitable, perhaps shape such perceptions. More in-depth research would be required to understand what influences these misperceptions, how widely held they are locally and how they may be impacting Ratels.

Keywords: attitudes toward wildlife, camera-trapping, Honey Badger, human–wildlife conflict, *Hystrix indica*, shared landscapes

In India, much of the known distribution of the Ratel *Mellivora capensis* falls outside protected areas, where it shares space with humans (Jhala et al. 2020). Camera-trapping surveys focused on small carnivores were conducted across an unprotected 800 km² area in Kachchh (formerly called Kutch), Gujarat, India (Fig. 1) in 2022. The landscape (Fig. 2) is composed of flatlands and ravines, and the vegetation is a mosaic of native savannas (open and wooded), invasive plants (mostly *Prosopis juliflora*) and croplands. The area is extensively used by humans, livestock and free-ranging dogs.

The surveys were designed to shed light on the ecological interactions within the area's small carnivore community. The survey area was split into 202 grid cells each measuring 4 km²; every alternate cell was assigned for camera-trapping surveys. Out of these 101 cells, 85 cells were camera-trapped; the remaining 16 were not accessible because they were fenced for agriculture, were being actively mined or for other reasons. Towards the end of the sampling period, 10 cells that were not originally assigned for

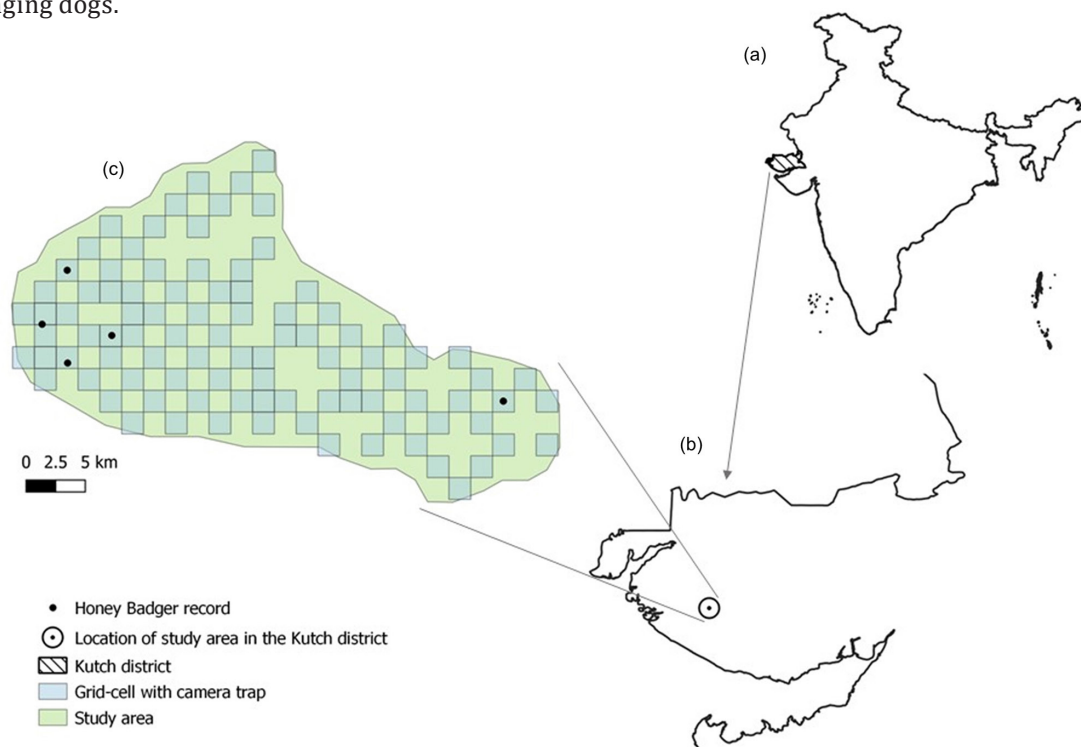


Fig. 1. Fig. 1. Location of (a) Kachchh in India, (b) the survey area in Kachchh and (c) the layout of the 95 grid-cells (each 4 km²) that were surveyed using camera-traps. Dots indicate cells where Ratel *Mellivora capensis* was camera-trapped.



Fig. 2. Habitat (dominated by *Prosopis juliflora*) near a camera-trap station where a Ratel *Mellivora capensis* duo was camera-trapped in mainland Kachchh, India. Photographed in January 2022. (Photo: Divyajyoti Ganguly.)

camera-trapping were also sampled using this method. In total, 95 number of grid cells were surveyed using camera-traps. Single camera-traps were placed close to the centre point of these cells after identifying trails with potential small carnivore tracks or faeces.

Between January and May 2022, the camera-traps were kept active in blocks of approximately 20 cells at a time for 10–14 days. Prior to this sampling, an additional five camera-traps were set up opportunistically in locations where there was a high probability of detecting small carnivores, such as dry riverbeds, potential den sites and trails.

Ratel was recorded 10 times at five camera-trap stations (Figs. 1, 3; Table 1). All the records were

during nocturnal hours. In four of the five grid cells, the captures were of single animals; a Ratel duo visited one camera-trap station on multiple occasions.

During the sampling period, a potential Ratel latrine was identified and a faecal sample was collected for analysis. Amplification of a region of the cytochrome b gene of the mitochondrial DNA verified that it was from a Ratel. Although a thorough dietary assessment of the collected sample was not conducted, a visual inspection showed many Indian Crested Porcupine *Hystrix indica* quills.

Opportunistic conversations with local villagers within and around the survey area indicated that they generally held a negative perception of the



Fig. 3. A camera-trap record of a male Ratel *Mellivora capensis* obtained during the survey on 6 May 2022 in Kachchh, India. (Photo: Divyajyoti Ganguly/Wildlife Programme, National Centre for Biological Sciences–TIFR.)



Ratel, despite having rarely, or never, encountered one in the wild. Among the local names for the Ratel are *gunar* and *gorkhudiya*, the latter meaning ‘grave digger’. Several of the local names across its range translate to this (Pocock 1941). A few villagers described the Ratel as a large, ferocious animal, capable of attacking and killing humans. Some villagers claimed to have heard of instances of Ratels taking away unattended children from villages. Villagers also recalled one instance of a Ratel being killed after it strayed into a village.

Placed under Schedule I of India’s Wild Life Protection Act (MoEFCC 1972), the Ratel is afforded the highest conservation protection in the country. While it persists outside India’s protected area network, and in areas that are under various kinds of human use, the extent of habitat loss and degradation to which it can adapt remains unclear. This is particularly relevant because the savanna habitats where we recorded the species are frequently converted to croplands, subjected to stone quarrying and mining, and are used for wind and/or solar energy farms (Watve et al. 2021).

Ratels share space with humans in these habitats. Human perception towards animals is shaped by several factors, such as animal behaviour, socio-cultural influences, economic condition, personal values and historical events (Dickman 2010, Bruskotter & Wilson 2014). Elusive species, such as carnivores, are often perceived to be dangerous, because of hearsay and folklore, fear of the unknown, misconceptions and lack of awareness, and accidental negative interactions (Johansson et al. 2016). Ratels are known to be bold and ‘fearless’. However, they do not pose any danger to humans unless disturbed (Pocock 1941). To the best of our knowledge, there are no reliable re-

cords of Ratels attacking or harming humans in the survey area, although there are some instances recorded in other parts of the species’ range (Pocock 1941, Buname et al. 2016). For example, a Ratel entered a temple in Girnar, Gujarat, one morning and bit four people (Times of India 2014); the highly atypical behaviour of the animal suggests that it might have been ill.

The depiction of Ratel in popular media is dominated by its ability to tackle much larger animals, which may foster an exaggerated risk perception among the local people. This could lead to preventative killing, as in the case that villagers recounted for us. Future studies should further investigate people’s negative perceptions of the Ratel, including how widespread they are, what influences them, and how they may be impacting the Ratel population. If negative attitudes toward Ratels are resulting in practical harm to them, research and outreach – primarily to quell prevalent misconceptions – could facilitate the persistence of this animal in Kachchh and across other shared landscapes.

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Table 1. Details of Ratel *Mellivora capensis* records during the camera-trapping survey of small carnivores, from January through May 2022 in Kachchh, Gujarat, India. (The data will be shared upon reasonable request to the authors.)

Date (dd-mm-yy)	Time (hh:mm:ss)	Remarks
Feb. ^{a, b}	– ^a	<i>Prosopis juliflora</i> -dominated habitat; two Ratel were recorded together
Feb. ^{a, b}	– ^a	<i>Prosopis juliflora</i> -dominated habitat
18-02-22	03:11:12	Open savanna habitat
18-03-22	03:06:24	<i>Prosopis juliflora</i> -dominated habitat
13-04-22 ^c	00:22:01	Wooded savanna habitat
15-04-22 ^c	04:47:03	Wooded savanna habitat
06-05-22	21:17:39	<i>Prosopis juliflora</i> -dominated habitat
08-05-22 ^b	23:42:00	<i>Prosopis juliflora</i> -dominated habitat; two Ratel were recorded together
09-05-22 ^b	01:43:00	<i>Prosopis juliflora</i> -dominated habitat
10-05-22 ^b	03:53:00	<i>Prosopis juliflora</i> -dominated habitat; Two Ratel were recorded together

^a Date and time not recorded because of a technical malfunction. ^b Same location. ^c Same location.



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