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# news





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**Cover Photo:** Leopard cat in Rajaji National Park, India (Photo Akanksha Saxena), see article on p. 21 of this issue.

RAJU VYAS<sup>1\*</sup> AND KARTIK UPADHYAY<sup>2</sup>

# Sightings and distribution of rusty-spotted cat in Gujarat State, India

**Over the last fifteen years (1999 to 2013) we recorded 11 sightings of rusty-spotted cats *Prionailurus rubiginosus* in central and southern Gujarat State, India. Of these, seven sightings were within protected areas, three from reserve forests and one from open scrublands combined with agricultural fields. This habitat is composed of hilly terrain with dry deciduous forest, scrublands, large boulders and agricultural fields, with a moderate human expansion. The most important habitat and forest blocks for the species in Gujarat are the reserve forests which act as corridors between the Jambughoda Wildlife Sanctuary and the Ratanmahal Wildlife Sanctuary. The existing data and sighting records from Gujarat State show that the species distribution in the state is wide and scattered.**

The rusty-spotted cat RSC is one of the smallest cats in the world and is found in India and Sri Lanka (Pocock 1939, Prater 1980). This cat looks like a domestic cat but is distinguished by its smaller size, vertical stripes on its forehead, fawn coat with rusty-brown spots arranged in lines on the back and a long, unmarked tail. It is legally protected as a Schedule I species in the Wildlife Protection Act-1972, India, figures in Appendix I of CITES (Indian population only) and is listed as Vulnerable in the IUCN Red List (Khan & Mukherjee 2008). The distribution of this secretive nocturnal cat was believed to be sparse and little known prior to the Gir forest record (Pathak 1990), following which numerous sighting

reports emerged from various Indian states, with the exception of the northeast. These records, along with the species' pictures offered a new insight to Indian naturalists and wildlife enthusiasts. It contributed to raising awareness of the RSC which is often mistaken for a domestic cat (both being present in the same habitat) and thus overlooked.

However, recent published records show that this species is widely distributed in many Indian states, including Rajasthan (Tehsin 1994, Sharma 2007), Madhya Pradesh (Vasava et al. 2012), Orissa (Behura & Guru 1969), Maharashtra (Abdulali 1945, Patel 2010), Andhra Pradesh (Rao et al. 1999, Behera, 2008), Karnataka (Kumar

& Singh 2005), Uttar Pradesh (Anwar et al. 2010), Uttarakhand (Eco News 2011), Tamil Nadu and Pondicherry (Web-Peploe 1946, Saint-Hilaire 1831), Kerala (Jackson 1998), and Jammu & Kashmir (Chakraborty 1978). In the state of Gujarat the species occurrence reports show that the species has a wide distribution (see Fig.1): Dangs forest and Vansda (=Bansda) National Park (Digveerendrasinh 1964, Digveerendrasinh 1987), Gir National Park & Sanctuary (Pathak 1990), Shoolpaneshwar Wildlife Sanctuary (Chavan et al. 1991) and Ratanmahal Wildlife Sanctuary (Patel 2006a). There were a few sighting records of the species from the reserve forests of Fangia and Kevdi, Chhota-Udepur (Patel & Jackson 2005, Patel 2006b & 2011), Sarjumi, Dahod (Vyas et al. 2007) and Danta, Banaskantha (Singh 2013). Local newspapers and online pictorial evidence show that the species also occurs in the Indroda Nature Park, Gandhinagar (Kaushik 2009), Girnar Wildlife Sanctuary (Shukla 2011) and the Chhari-Dhand area in Kutch (Anon 2013).

## Methodology

From 1999 to 2013 we explored the forest area of southern and central Gujarat (see map of study area in Fig. 2), including scrublands and reserve and protected forest, during several nights in a slow-moving vehicle searching with the help of high-beam torchlight for the presence of nocturnal mammals. Each sighting of an RSC and other details were noted, including the surrounding habitat, activities of animals and photographic evidence.

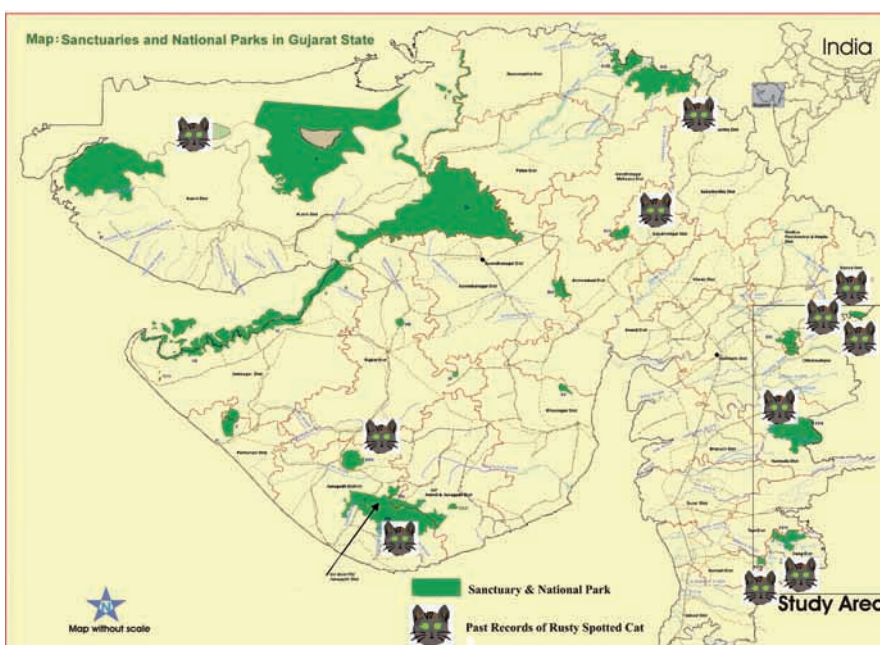
The data collected was compiled and is presented here with the purpose of improving our knowledge of the species and its conservation.

## Observations

The authors' sighting records of the species from central and south Gujarat obtained between 1999 to 2013 are presented in Table 1 and illustrated by Figs. 3-5, SOM F1-F5.

## Discussion

The existing data and the present sighting records from Gujarat State show that the distribution of species in the state is wide and scattered (Fig. 1). Sighting of the species has been reported from different types of habitat within the state, including Chhari-Dhand, right from drier parts of Kutch (dominant invasive plant being mesquite, genus



**Fig. 1.** Map of Gujarat showing the various locations of past and present sightings of rusty-spotted cats.

*Prosopis*), to the moist deciduous forests of Dangs and Vansda forests, as well as in the dry deciduous forests of Gir and Girnar Wildlife Sanctuary, and some other reserve forests. Their distribution extends to the open scrublands bordering agricultural fields. Thus it can be noted that this species occupies more diverse habitats than previously thought.

The species sightings from Jambughoda Wildlife Sanctuary, Shivjipura and Chorvana in the past and present indicate good numbers of RSC in Fangia, Kevadi and Chota-Udepur (Patel & Jackson 2005, Patel 2006a 2006b, 2011), suggesting that the Jambughoda Wildlife Sanctuary is an important habitat for the species. Overall this area is composed of hilly terrain with dry deciduous forest including scrublands, large boulders and agricultural fields along with moderate human expansion, providing a good habitat for the species. Moreover, these large forests tracts act as corridors between the Jambughoda Wildlife Sanctuary and Ratanmahal Wildlife Sanctuary.

In southern Gujarat the Vansda National Park and Purna Wildlife Sanctuary, along with fragmented reserve forest between the two protected areas, are important for the species. Past and present sighting reports (Digveerendrasinh 1964, 1987), together with the habitat study by Worah et al. (1989), suggest that these could be potential habitats for the species.

We conclude by stating that the best potential habitats for the species in the state are the large forest blocks in central Gujarat, including Jambughoda Wildlife Sanctuary and Ratanmahal Wildlife Sanctuary and their surrounding reserve forests. A second important potential habitat of the species is located in southern Gujarat in the Vansda National Park and Purna Wildlife Sanctuary and the surrounding reserve forests.

Records and data from past publications and the current study indicate a direct negative impact of roads on the species based on the accidents observed (Abdulali 1945, Digveerendrasinh 1987, Pathak 1990, Tehsin 1994, Rao et al. 1999, Patel 2006a, Sharma 2007, Pillay 2008). RSC populations found in and around cultivated areas (Patel 2006a, 2011, Vasava et al. 2012), especially the kittens found in sugarcane fields (Athreya 2010), show that this species maybe adapting to an alternative habitat, moving from forests and forest edges to agricultural landscapes either by choice or by



**Fig. 3.** A rusty-spotted cat on a large boulder near Shivjipura village, a locality on the edge of Jambughoda Wildlife Sanctuary (No 9 in Fig. 2; photo K. Upadhyay).

force. Agricultural fields are landscapes that undergo rapid changes, and ecological threats caused by the use of high amounts of pesticides can endanger the survival of RSC populations in such habitats. An example of an indirect threat to the species is the single report of a RSC fur coat for sale (van Gruisen & Sinclair 1992). This suggests a potential danger and requires a monitoring of the pet and fur trade.

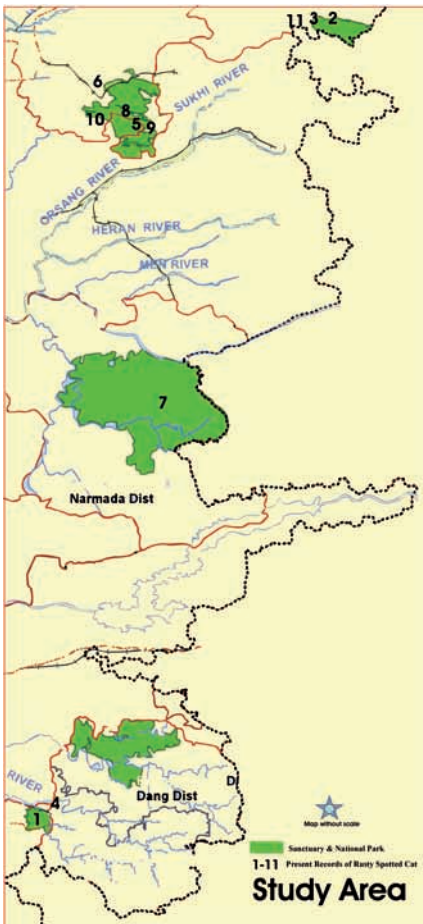
However, while the species is neither rare nor common it may become rarer as a result of the present rate of habitat loss and alteration due to the exploitation of natural resources.

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**Fig. 4.** An adult rusty-spotted cat on a large boulder near Shivjipura village, Jambughoda Wildlife Sanctuary. Note the difference in the ears of this cat compared with the one of the cat in the previous figure (No 9 in Fig. 2; photo M. Patel).



**Fig. 2.** Map of the study area showing the various locations and sightings of rusty-spotted cats. Numbers correspond with Table 1 and are also mentioned in the caption to the figures.



**Fig. 5.** A male rusty-spotted cat with an injured eye found on the road near Chorvana village, Chhota-Udepur. The injury might have been the result of a road accident or a fight with another male (No 10 in Fig.2; photo R. Vyas).

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**Table 1.** Location, date and time of sighting records of rusty-spotted cats from central and south Gujarat (1999-2013)

Date	Time	Location (as in Fig. 2)	long/lat	Age	Vegetation
25.08.1999	Evening 20:30 h	1-Forest path near Sadad-devi, Vansda NP	20° 46'56.13"N 73° 28'57.17"E	Adult	Dense moist mixed deciduous forest pocket with dominant plant species teak <i>Tectona grandis</i> , bamboo clumps <i>Dendrocalamus strictus</i> and sadad <i>Terminalia arjuna</i> .
21.12.1999	Night 23:40 h	2- On a large mahwa tree <i>Madhuca indica</i> , Kanjeta forest	22°34'32.21"N 74° 06'54.46"E	Adult	Dense mixed dry deciduous forest with large trees and few pockets of bamboo along with large boulders.
16.08.2000	Night 00:20 h	3- On a large boulder at Udal & mahwa forests, Ratanmahal Wildlife	22°34'47.63"N 74° 3'52.64"E	Adult	Very sparse vegetation, scattered large trees of mahwa, spread out on a small hilly terrain with few tribal huts.
25.10.2000	Night 21:22 h	4- Crossing the road, entering the reserved forest of Vati, Dangs	20°48'19.29"N 73°29'29.11"E	Adult	Forested corridor between Vansda National Park and Purna Wildlife Sanctuary
30.04.2007	Evening 19:10 h	5- Crossing the forest trail, Jambughoda Wildlife Sanctuary	22°21'35.50"N 73°42'49.65"E	Adult	Dense forest pocket of dominantly large mahwa trees, bamboo clumps and spread out agricultural fields
17.10.2008	unknown	6- State highway no. 150, near Champaner (SOM F1)	22°28'58.69"N 73°31'15.70"E	Dead Adult	Reserve forest
22.12.2008	Night 21:30 h	7- Inguwadi forest block, Shoolpaneswar Wildlife Sanctuary. Observed foraging in the undergrowth	--	Adult	Dense teak mixed forest with abundant undergrowth of bamboo clumps.
10.03.2009	Unknown	8- In the crevices of the caves of Bhat, Jambughoda Wildlife Sanctuary (SOM F2)	22°24'15.67"N 73°37'0.17"E	Adult	Unknown
29.09.2010	Night 22:10 h	9- On a large boulder at the edge of Jambughoda Wildlife Sanctuary (Fig. 3)	22°26'27.87"N 73°46'53.09"E	Adult	Small hill with large boulders and open rocky scrublands along with few large trees and few agricultural fields.
04.08..2012	Night 00:40 h	9- On a large boulder at the edge of Jambughoda Wildlife Sanctuary (Fig. 4, SOM F3)	Close to above location site	Adult	Small hill with large boulders and open rocky scrublands along with few large trees and few agricultural fields.
09.10.2010	unknown	10- Village road on the South West corner of Jambughoda Wildlife Sanctuary (Fig. 6 SOM F4, F5)	22°23'36.23"N 73°34'55.60"E	Three dead kittens	Hilly terrain with mixed deciduous forest vegetation dominated by flame of the forest <i>Butea monosperma</i> , <i>Wrightia</i> sp. and lantana <i>Lantana camera</i>
03.02.2013	Night 01:15 h	11- Sighted on the edge of State Highway no. 62, close to Kevadi forest (Fig. 8)	22°24'56.21"N 73°58'22.69"E	Adult	Found scavenging road-killed animals; it was observed to be an adult male with a damaged right eye. The cat's left eye was functioning while the right eye was bluish in color.

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- Supporting Online Material SOM Figures F1-F5 are available at [www.catsg.org](http://www.catsg.org)
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