

## Distribution update

### Recent records of Indian wolves from Bharuch and Surat districts, Gujarat, India

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#### Abstract

The Indian wolf (*Canis lupus pallipes*) is widely distributed in India, but is listed as data deficient in Gujarat. No proper study has been conducted on their current status, distribution, or threat assessment in the state. As per the current distribution, they are recorded from Northern and Central Gujarat. We present recent records of Indian wolves from Bharuch and Surat districts. We assume it to be southernmost distribution of the Indian wolf in Gujarat.

#### Article

Genetic research suggest that Asian wolves are divided into two different clades based on mtDNA; the Tibetan wolf clade and the Indian wolf clade (Sharma et al. 2004, Ersmark et al. 2016). India is home to both subspecies, Tibetan wolf (*Canis lupus chanco*) and Indian wolf (*C. l. pallipes*) (Kumar and Rahmani 1997, Sharma et al. 2004, Aggarwal et al. 2007, Menon 2014, Boitani et al. 2018). The Indian wolf clade is distributed in India and Pakistan (Khosravi et al. 2012, Ersmark et al. 2016, Hamid et al. 2019). It is considered endangered in India and features on Schedule 1 of the Indian Wildlife (Protection) Act, 1972. It had once one of the largest natural ranges of any land mammal in India (Sheldon 1992). Now, it is distributed in isolated pockets of the Indian peninsular region (Jhala 2003). In Gujarat, it is found in Little Rann of Kutch, Bhavnagar, Rajkot, Amreli, and Junagadh (Shahi 1982). Though, it is also reported from Greater Rann of Kutch, Surendranagar, Ahmedabad, and Narmada district (Devvratsinh Mori, personal communication). Little Rann of Kutch and Blackbuck National Park, Bhavnagar, has a stable population of wolves, but there is not much information available on their distribution in southern parts of Gujarat. Here we report recent sightings from Surat and Bharuch districts.

Surat is one of the biggest cities in Gujarat and known as a hub of textile and diamond industries. It is a large city beside the Tapi River with an area of 5,057 km<sup>2</sup>. On the other side, Bharuch is a developing city which lies beside the Narmada River and the area is 6,509 km<sup>2</sup>. Both districts hold diverse fauna and flora, and comprise a variety of habitat such as mangroves, wetlands, grasslands, scrublands, forests, and agricultural fields.

In 2009, the Nature Club Surat (NCS) rescued a wolf from the Adajan area of the Surat district (Figure 1). It was found wandering in human settlements, but no information was available on how the wolf reached the Surat city premises. Later, NCS volunteers rescued it safely and handed it over to the forest department where it was later released in the Blackbuck National Park, Bhavnagar. Since 2018, Krunal Trivedi has reported wolves from certain isolated parts of Surat and Bharuch districts through direct sighting and indirect evidence (Table 1).

We assume that this is the southernmost record of the Indian grey wolf in Gujarat (Figure 2). There is a possibility of their presence in other districts of South-Gujarat, hence, further study is necessary to understand the occupancy of the species. Hansot, Ankleshwar, Valia, Mangrol, and Umarpada are the Talukas (administrative subdistricts) of Surat and Bharuch districts which currently hold a wolf population. Most sightings are reported from Mangrol, Hansot, and Ankleshwar Taluka.

In February 2019, we found the carcass of a dead wolf near a water body outside Bharan village, Bharuch district (Figure 3). We had sighted two individuals at the same place in December 2018 (Figure 4), however, we noted that the dead wolf was not the same as the individual(s) we sighted in December 2018. The body was decomposed and thus it was not possible to identify the cause of death. The body was later buried in the presence of a veterinarian and forest department officials.



Figure 1. Indian wolf rescued from Surat City by Nature Club Surat in 2009.

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Table 1. Indian wolf (*C. l. pallipes*) sightings in Surat and Bharuch districts, India.

Sr. No	Year	Area	No. of individuals sighted	GPS location	Notes
1	2009	Adajan, Surat	1	21°12'28.69"N 72°47'32.16"E	Rescued from city premises
2	2018	Bharan, Bharuch	2	21°30'50.56"N 73° 2'15.88"E	Direct sighting of two wolves near a lake
3	2019	Bharan, Bharuch	1	21°30'55.68"N 73° 2'34.00"E	A decomposed carcass was found near a lake
4	2018	Dhamdod, Surat	1	21°30'18.33"N 73° 1'31.56"E	Direct sighting of single wolf in scrubland
5	2019	Hansot	1	21°36'48.88"N 72°47'21.48"E	Direct sighting of one wolf in open arid area

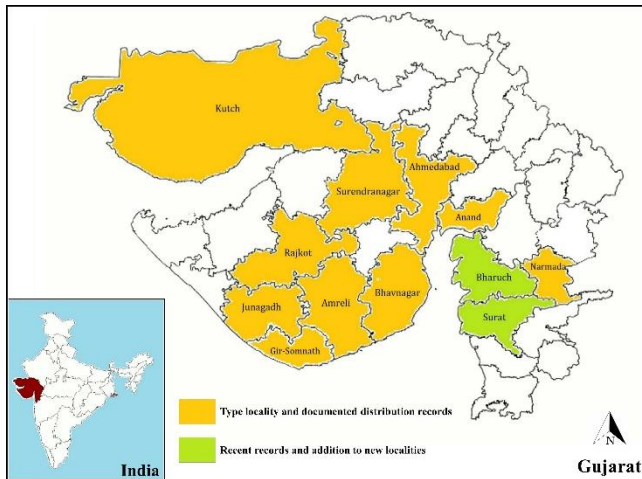


Figure 2. Distribution of Indian wolf in Gujarat, India.



Figure 3. Carcass of Indian wolf found at Bharan village, Bharuch district.



Figure 4. Indian wolf sighted at Bharan village, Bharuch district.

During fieldwork, based on direct sighting and indirect signs, wolves were mainly reported in remote and isolated scrublands, grasslands, and sometimes near agricultural fields in Surat and Bharuch districts. These areas are rich in flora and fauna, wild animals like leopards (*Panthera pardus fusca*), Indian crested porcupines (*Hystrix indica*), golden jackals (*Canis aureus*), small Indian civets (*Viverricula indica*) are reported from the area. As well as bird species like greater spotted eagles (*Clanga clanga*), short-toed snake eagles (*Circaetus gallicus*), short eared owls (*Asio flammeus*), imperial eagles (*Aquila heliaca*), crested larks (*Galerida cristata*), and Oriental scops owls (*Otus sunia*).

In the last decade, appropriate habitats have shrunk due to human interventions and we estimate that less than 4% of potential wolf habitat is left within both districts. Considering the average territory size of 150 ( $\pm 15$  SE) km<sup>2</sup> for a breeding pack, we assume that only two or three packs could be surviving in these remaining areas (Jhala et al. 2013). Pastoralism, urbanization, and habitat encroachment and destruction are some of the major threats to the wolf population. However, no proper study has been conducted in the area to understand the wolf population and its potential threats. We recommend the establishment of a project in the area to understand the actual population status, distribution, and potential threats to the Indian wolf population in this region.

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## Biographical sketch

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