INDIAN GREY WOLF

First photographic record of *Canis lupus pallipes* from Papikonda National Park in northern Eastern Ghats, India

Camera trap image of the Indian Grey Wolf *Canis lupus pallipes*

IUCN Red List:
Least Concern
(Boitani, Phillips & Jhala 2018)

Mammalia
[Class of Mammals]

Carnivora
[Order of Carnivorous animals]

Canidae
[Family of Canids]

Canis lupus
[Grey Wolf]
pallipes
[Indian Grey Wolf]

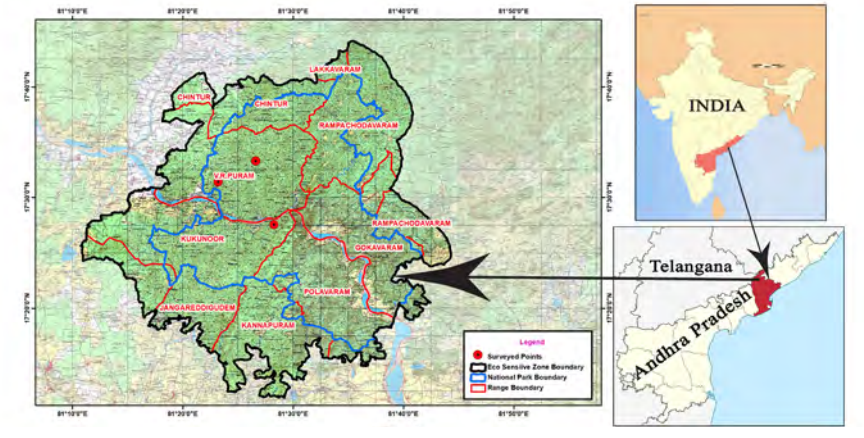
Species described by Linnaeus in 1758

The Grey Wolf, *Canis lupus*, is a globally widespread species with a range from the southwestern Asia to the Indian subcontinent (Boitani et al. 2018). Its range covers the Indian peninsula, where its presence is seen in pockets in the states of Andhra Pradesh, Bihar, Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Uttar Pradesh and West Bengal (Singh & Kumara 2006). Using the information from its distributional subset, its population in the Indian subcontinent is estimated to be between 2,000 and 3,000 individuals (Jhala 2000). This population estimate is derived from the studies in Gujarat, Maharashtra, and Karnataka (Jhala & Giles 1991; Kumar & Rahmani 1997; Singh & Kumara 2006). Although the species is categorized as Least Concern in the IUCN Red List of Threatened Species (Boitani et al. 2018), it

is accorded the highest protection under the Indian Wildlife (Protection) Act, 1972.

A subspecies of the Indian Grey Wolf, *C. l. pallipes*, is found in the Indian peninsular region (Aggarwal et al. 2007). It is distinguished by its fur, which is greyish-red to reddish-white with grey tones. The hairs are grizzled with black on the back, which sports a dark V-shaped patch around the shoulders. Its limbs are paler than the body, and the underparts are completely white (Mivart 1890). This subspecies is speculated to be separated from the main evolutionary branch 8,00,000 years ago (Agarwal & Kumar 2009). Though the Indian Grey Wolf (Sykes, 1831) can be spotted in various habitats such as hills, plains, and pastures, it primarily inhabits in proximity to human-settled agro-pastoral landscapes (Jhala & Giles 1991). It feeds on large ungulates but also predates on smaller prey items; it is opportunistic to prey on livestock and also can forage garbage (Newsome et al. 2016). There are published records of the Indian Grey Wolf from various regions of Andhra Pradesh (Shahi 1982). A recently published study by Aditya & Ganesh (2017) from Papikonda National Park (PNP) of this state recorded 55 species of mammals from 46 genera belonging to 24 families. The study reported Canids such as Indian Wild Dog, Indian Golden Jackal, and Small Indian Fox, but did not report the presence of the Indian Grey Wolf in this region.

Global Distribution of *C. lupus* :
Native: Afghanistan, Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bhutan, Bosnia and Herzegovina, Bulgaria, Canada, China, Croatia, Czechia, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Greenland, Hungary, India, Iran, Iraq, Israel, Italy, Jordan, Kazakhstan, Korea, Kyrgyzstan, Latvia, Libya, Lithuania, Luxembourg, Macedonia, the former Yugoslav Republic of, Mexico, Moldova, Mongolia, Montenegro, Myanmar, Nepal, Netherlands, Norway, Oman, Pakistan, Poland, Portugal, Romania, Russian Federation, Saudi Arabia, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Syrian Arab Republic, Tajikistan, Turkey, Turkmenistan, Ukraine, United Arab Emirates, United States, Uzbekistan, Yemen.
Possibly extinct: Bangladesh
Regionally extinct: Ireland, Japan, United Kingdom (Boitani, Phillips & Jhala 2018)



Location Map of Papikonda National Park showing capture locations of Indian Grey Wolf

We report the presence of the Indian Grey Wolf from PNP. PNP is located between 18.491–19.181N and 79.541–83.233E, and primarily hold southern tropical mixed moist deciduous forests, along with patches of semi-evergreen and dry

Table: Vegetation and species at locations, where the Indian Grey Wolf was captured in Papikonda National Park, Andhra Pradesh

Vegetation	Captures	Date	Captured time	Prey species captured	Cattle	Free-ranging dogs
Dry deciduous forest	4	10.xi.2018	16.56h	Rhesus Macaque, Wild Pig	6	1
Moist deciduous forest	2	12.xii.2018	10.44h	Porcupine, Mouse Deer		1
Dry deciduous forest	1	24.xi.2018	10.44h	Sambar	-	-

deciduous forest (Champion & Seth 1968; Rao 2000; Reddy et al. 2010; Aditya & Ganesh 2017). During December months of 2018, non-invasive biodiversity monitoring following the camera trapping protocol (National Tiger Conservation Authority & Wildlife Institute of India, 2018) was conducted using the Cudde back c1 model, panther, cudde back attack model in PNP. Cameras were placed in 2km^2 grids, in 112 trapping locations, on 5,824 trap nights. From the 27,926 images, three captures of Indian Grey Wolf were identified. These captures were from three different locations that were at an average distance of ~8 km from each other. One of the photographs captured two individuals, while the other two captured single individuals.

Camera trap image of the Indian Grey Wolf *Canis lupus pallipes*

As per Singh & Kumara (2006), domestic livestock is one of the biggest food sources of this species. Numerous captures of cattle and other prey species at capture locations (Table) suggest good prey availability in PNP for wolves. As the species was not recorded in the 2017 study, we cannot ascertain whether PNP harbours wolf population in low density or these are vagrant individuals from nearby populations. Considering the fact that wolves are generalists and are found thriving outside protected

areas (Jhala & Giles 1991), it is possible for individuals from nearby populations to range in this region. The presence of and competition from other predators, however, might be a limiting factor for their distribution. Wolves can travel substantial distances traversing diverse landscapes when leaving their birth-packs to seek mates and territories of their own (Mech & Boitani 2003). The capture images of free-ranging dogs in the same locations where the wolves were captured also raise concern about their interactions with each other, which might produce a potential threat to the survival of the wolves. Studies show that hybridization between dogs and wolves (Hindrikson et al. 2012) lead to the sprawl of diseases; canine parvovirus, canine hepatitis, canine distemper virus, and rabies are potential threats to wolves from free-ranging dogs in India (Hennelly et al. 2015). As wolves primarily inhabit in proximity to human-dominated landscapes, the reason for their presence in PNP, which was not earlier recorded, needs to be studied further. As wolf populations in India remain understudied, dedicated systematic studies are required to shed light on these issues in and around PNP.

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