



# PALM SQUIRREL

## A status update of *Funambulus palmarum* in Gujarat, India



Three-striped palm squirrel near Manchi Haveli, Pavagadh Hill, Panchmahal District, Gujarat (22°28'3"N & 73°31'26"E; 436m) (Photo: Rahul D. Bhatt)

IUCN Red List: Least Concern  
(Nameer & Molur 2016)

### **Mammalia**

Class of Mammals

### **Rodentia**

Order of rodents or gnawing animals

### **Sciuridae**

Family of tree squirrels

### ***Funambulus palmarum***

[Three-striped Palm Squirrel]

Species described by Linnaeus in 1766

Three-striped Palm Squirrel *Funambulus palmarum* (Linnaeus, 1766), is endemic to South Asia (Molur et al. 2005) and listed as Least Concern in the IUCN Red List (Nameer & Molur 2016). Several niches occupied by *F. palmarum* are often shared with the Northern Palm Squirrel *Funambulus pennantii* (Wroughton, 1905). Literature, photographs as well as visual clues indicate that *F. palmarum* is larger in size (Head-Body Length (HLB): 188-189mm) with rounded ears, blunt muzzle, brownish-grey dorsum and yellowish-white colored stripes. The two additional dorsal stripes separating belly and flanks present in *F. pennantii*. Tail of both the species is bushy but *F. palmarum* has a characteristic reddish



line underside of the tail down the centre (Baqri 2000; Datta & Nandini 2013, 2014).

Presence of *F. palmarum* has been reported from many Indian states, viz., Andhra Pradesh, Chhattisgarh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Rajasthan, Orissa and Tamil Nadu (Molur et al. 2005). In Gujarat, sightings of *F. palmarum* are documented from Vansda National Park (Singh et al. 2000), Jambughoda Wildlife Sanctuary (Padate et al. 2003) and Polo Forest (Sharma 2005). On the other hand, reports from Purna Wildlife Sanctuary (Pandey et

**Global Distribution:**  
Endemic to southern India and Sri Lanka (Molur et al. 2005, Thorington & Hoffmann 2005)



Map of Gujarat (Source: Google Maps) depicting sightings of Three-striped Palm Squirrel

al. 2004a), Shoolpaneshwar Wildlife Sanctuary (Pandey & Raval 2010), Jessore Wildlife Sanctuary (Pandey et al. 2004b) and Wild Ass Sanctuary, Little Rann of Kutch (Singh et al. 1999) are tentative and need further confirmation. Online reports and pictorial evidences provide information on presence of *F. palmarum* in areas of Bharuch (Baqri 2000), Sutrapada (Anon 2006) and Vapi (Anon 2010).

Though, several biodiversity surveys, research papers and online reports have mentioned about occurrence of *F. palmarum* in various parts of Gujarat, the same needs verification (Singh 2013). Hence, the present study was carried out to confirm and validate the occurrence of *F. palmarum* in northern, central and southern districts of Gujarat state.

Visual survey method as per Gurnell et al. (2009) with minor modifications was employed in this study to confirm presence of *F. palmarum* in known habitats. New locations comprising of scrub lands and forested patches of Gujarat were also explored for presence of *F. palmarum*. In each potential habitat, six survey lines of 500 m were walked during early morning (07.00 to 09.30 hrs) and dusk (04.30 to 07.00 hrs) in all the seasons for consecutive three years i.e., from 2014 to 2016. Such surveys were carried out 2–4 times within a 2-weeks period in each potential habitat by taking into account variations in weather conditions and squirrel activity. Occurrence of *F. palmarum* was monitored



**Table: Sightings of Three-striped palm squirrel in Gujarat during 2014-2016**

	Name of Locality	Lat-Long	District	Local status of animal based on present study	Reference(s)
1.	Vansda NP	20°45'49"N & 73°29'9"E; 129m	Navsari	C	Singh et al. 2000, Present study
2.	Purna WLS	20°56'36"N & 73°43'27"E; 473m	Dang	C	Pandey et al. 2004, Present study
3.	Shoolpaneshwar WLS	21°45'38"N & 73°47'41"E; 431m	Narmada	C	Panday & Raval 2010, Present study
4.	Ratanmahal WLS	22°34'35"N & 74°6'50"E; 269m	Dahod	C	Present study
5.	Kevdi EC	22°31'12"N & 73°56'7"E; 194m	Dahod	UC	Present study
6.	Jambughoda WLS	22°21'39"N & 73°39'55"E; 244m	Panchmahal	C	Padate et al. 2003, Present study
7.	Pavagadh Hill	22°27'43"N & 73°31'26"E; 390m	Panchmahal	A	Present study
8.	Areas surrounding Tadiya Lake	22°21'52"N & 73°34'32"E; 85m	Panchmahal	UC	Sharma 2005, Present study
9.	Polo Forest	23°59'56"N & 73°16'45"E; 306m	Sabarkantha	C	Present study

\* A–Abundant; C–Common; EC–Eco Campsite; UC–Un Common; NP–National Park; WLS–Wildlife Sanctuary

by exploring the surrounding area of survey line at each 50 m intervals and time, place, number of individuals and the micro-habitat features were noted.

*F. palmarum* is known to prefer forested areas with dense valleys and foothills in contrast to *F. pennantii* prefers open forests, agricultural fields and close proximity to human habitations (Sharma 2005). In spite of the differences in habitat preference of *F. palmarum* and *F. pennantii*, their distribution range overlaps suggesting that they often share a common niche (Molur et al. 2005). Reports of doubtful sightings or wrong identification may result due to overlapping ranges of *F. palmarum* and *F. pennantii*. Therefore, direct visual evidences are highly valuable to confirm their past distribution records.

In the present study, a healthy population of *F. palmarum* observed in Vansda National Park, Jambughoda Wildlife Sanctuary and Polo Forest, which provide clarity on their distribution and its documentation as a 'locally common species' (Singh et al. 2000; Padate et al. 2003; Sharma 2005) could be justified. Similarly, our study also confirmed presence of *F. palmarum* in Purna and Shoolpaneshwar Wildlife Sanctuaries that was previously reported as 'tentative' by other workers (Pandey et al. 2004a; Pandey & Raval 2010). During our study, presence of *F. palmarum* was also recorded from four new



geographical areas in Gujarat viz., Ratanmahal Wildlife Sanctuary, Kevdi eco campsite, Pavagadh hill and areas surrounding Tadiya Lake that lie within the Panchmahal district of Gujarat. Habitat in these areas comprise of undulating terrain, hills, dry deciduous forest with patches of scrub land and semi-arid landscapes and are comparable to Jambughoda Wildlife Sanctuary. Maximum sightings of *F. palmarum* (28 individuals in a single 500 m survey line) was recorded at Pavagadh hill. A healthy population of *F. palmarum* at Pavagadh hill (a busy tourist place) is attributable to availability of anthropogenic food stuff.



**Three-striped palm squirrel observed at Mithibor village near Ratanmahal Wildlife Sanctuary, Dahod District, Gujarat (22°32'24"N & 74°0'2"E; 237m) (Photo: Kartik Upadhyay)**

Hence, it can be concluded from our study that *F. palmarum* occupies much broader range of habitats in northern, central and southern parts of Gujarat (Table). Saurashtra and Kutch regions of Gujarat were not covered in this study and the same need to be done to establish distribution limits of *F. palmarum* in Gujarat state.

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