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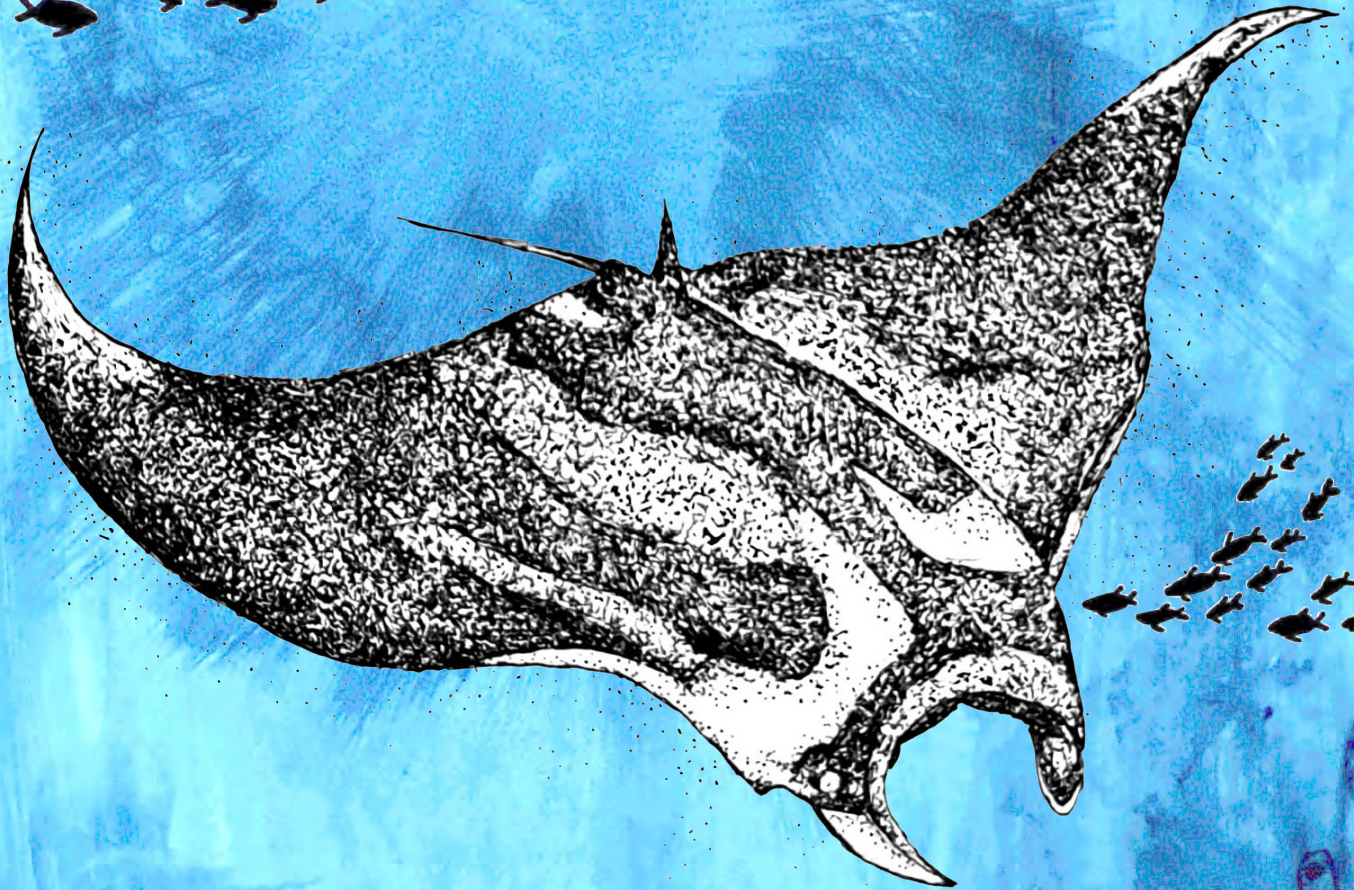
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Cover: Giant Oceanic Manta Ray *Mobula birostris* in ink on acrylic wash by Elakshi Mahika Molur adapted from scientific illustration by Roger Hall.



First photographic record of the Indian Giant Flying Squirrel *Petaurista philippensis* Elliot, 1839 (Mammalia: Rodentia: Sciuridae) in Badrama Wildlife Sanctuary, Odisha, India

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The Indian Giant Flying Squirrel (IGFS) *Petaurista philippensis* is solitary, nocturnal, and arboreal, and has a wide distribution in China, India, Laos, Myanmar, Sri Lanka, Taiwan, Thailand, and Vietnam. It inhabits dry deciduous and evergreen forests, usually at elevations from 500–2,000 m and has been recorded in plantations (Walston et al. 2016). Currently, 44 species of flying squirrels belonging to 15 genera are recognized world over, with the majority (14 of the 15 genera and 42 of the 44 species) occurring in Eurasia, especially southeastern Asia (Thorington & Hoffmann 2005). So far 14 species of flying squirrels are being reported from India (Koli et al. 2013a; Sharma et al. 2013; Koli 2015; Krishna et al. 2016), and mainly found in the Himalayan and the northeastern regions, while the Western Ghats holds only two species (*Petaurista philippensis* and *Petinomys fuscocapillus*) (Sharma et al. 2013). The distribution of IGFS is restricted and scattered. It has been identified from Gujarat (Nisha & Dharaiya 2016), Andhra Pradesh

(Sreekar et al. 2012), Karnataka (Nandini 2000; Kumara & Singh 2004, 2006), Kerala & Tamil Nadu (Rajamani 2000; Umapathy & Kumar 2000; Nandini 2001), Maharashtra (Nandini 2001), Madhya Pradesh & southern Rajasthan (Tehsin 1980; Chundawat et al. 2002; Sharma 2007; Koli 2012; Koli et al. 2013b), and West Bengal, Bihar, & Goa (Ashraf et al. 1993; Srinivasulu et al. 2004; Molur et al. 2005). In the global context, this species is of 'Least Concern' (Walston et al. 2016). However, a few studies on *P. philippensis* indicate its decreasing status in India due to hunting (Nandini 2000a,b), anthropogenic disturbances, habitat destruction, and agricultural encroachment (Kumara & Singh 2004, 2006). Here we report first photographic record of Indian Giant Flying Squirrel in Badrama Wildlife Sanctuary, Odisha, eastern India.

The Badrama Wildlife Sanctuary extends over an area of 304.03 km² from 21.4971°N to 84.2912°E; (Figure 1), is situated in Sambalpur District of Odisha State. The mean

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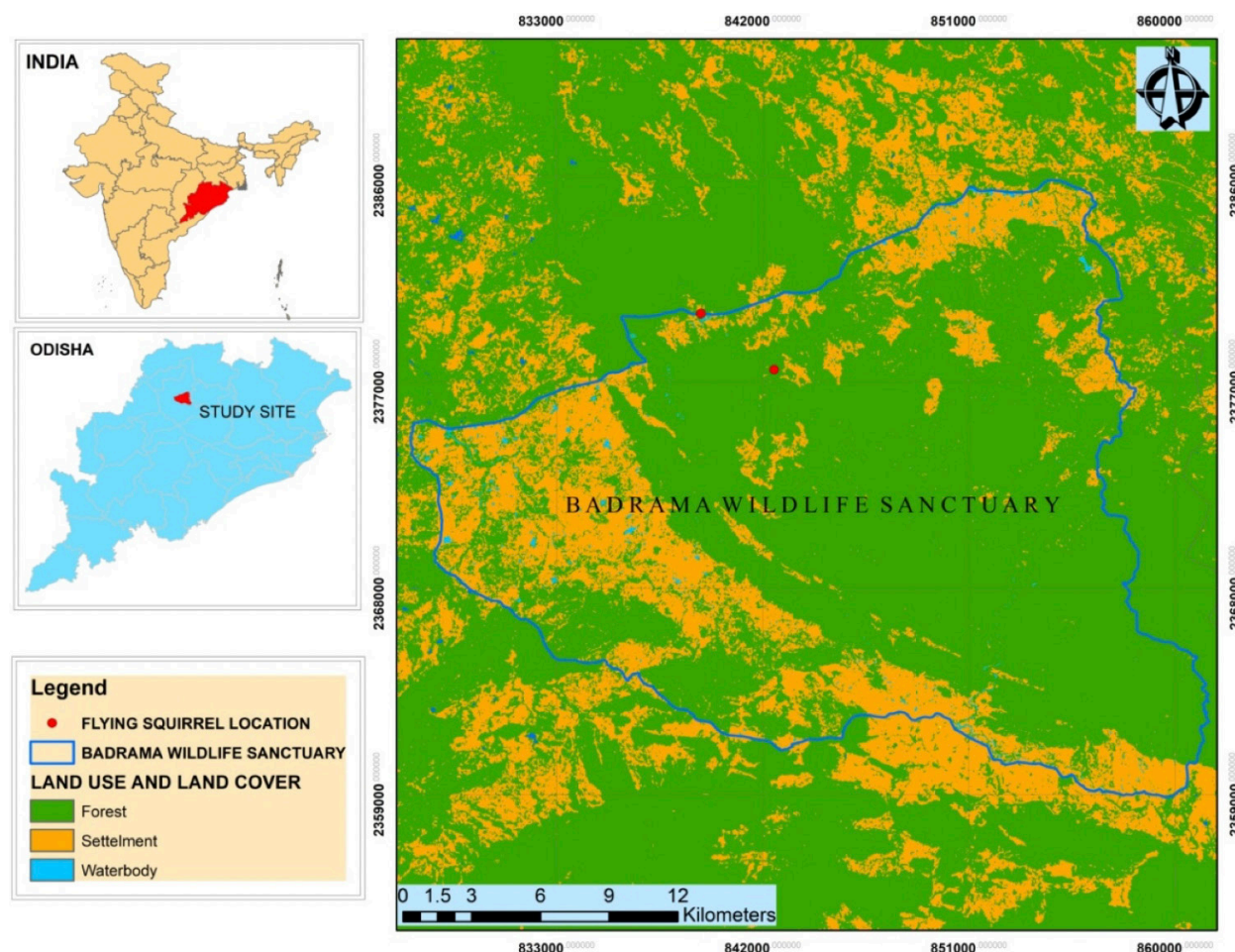


Figure 1. Location map of Badrama Wildlife Sanctuary, Odisha, India, with Indian Giant Flying Squirrel locations at the observation site.

temperatures of winter range 5–20 °C and in summers range from 30–45 °C. There are three distinct seasons, i.e., summer (March–June), monsoon (July–October), and winter (November–February). The rainfall varies 1,000–1,800 mm. Grazing livestock and collection of forest products are the major activities of the people in the sanctuary. The sanctuary is dominated by northern tropical dry deciduous forests, dry peninsular Sal forests, and northern dry mixed deciduous forests (Champion & Seth 1968). The dominant trees of the sanctuary include *Terminalia tomentosa*, *Anogeissus latifolia*, *Pterocarpus marsupium*, *Diospyros melanoxylon*, *Adina cordifolia*, *Terminalia chebula*, *T. bellirica*, *Lagerstroemia parviflora*, *Buchanania lanzan*, *Lannea coromandelica*, and *Dalbergia latifolia* (Kumar 2018). The common climbers in these forests are *Bauhinia vahlii* and *Smilax* species, while *Combretum decandrum* occurs in valleys and ravines (Kumar 2018).

In addition to IGFS, important mammals found in the sanctuary are Elephant *Elephas maximus*, Gaur *Bos*

gaurus, Sambar *Rusa unicolor*, Barking Deer *Muntiacus muntjak*, Wild Boar *Sus scrofa*, Four-horned Antelope *Tertracerus quadricornis*, Leopard *Panthera pardus*, Rusty-spotted Cat *Prionailurus rubiginosus*, Jungle Cat *Felis chaus*, Indian Grey Wolf *Canis lupus*, Striped Hyena *Hyaena hyaena*, Golden Jackal *Canis aureus*, Indian Fox *Vulpes bengalensis*, Sloth Bear *Melursus ursinus*, Indian Giant Squirrel *Ratufa indica*, Hanuman Langur *Semnopithecus entellus* (Palei et al. 2022).

On 20 October 2021, while traveling in a vehicle at 1800 h from Kutab forest road to Kutab village, we saw an animal with coffee-brown to gray grizzled with white and ears having reddish-brown margins. The tail was brown grey with the tips being darker and the animal was climbing on Sal tree (21.490027°N 84.474555° E) (Figure 1). When we reached near the tree, the animal had almost climbed the top canopy of the tree, and jumped from the top branch and opened its patagium and glided in the air. The animal sighted was an IGFS. The squirrel glided almost 20 m in the air, and landed on



Image 1. a–d—Indian Giant Flying Squirrel on Sal tree *Shorea robusta* in Badrama Wildlife Sanctuary. © Phalguni Sarathi Mallik.



Image 2. e–h—Indian Giant Flying Squirrel on Tamarind tree *Tamarindus indica* in Badrama Wildlife Sanctuary. © Bhakta Padarbinda Rath.

another Sal tree and started climbing towards the top canopy of the tree. During this, we could successfully photograph the squirrel (Image 1). In frequent intervals the squirrel glided from the Sal tree to the Mahua tree. We also recorded and photographed the squirrel feeding on the seeds of *Tamarindus indica* at 21.467888° N 84.304638° E, which is close to the forest rest house near Badrama Wildlife Range (Image 2).

There has been no record of IGFS from not just the Badrama Wildlife Sanctuary but from the entire Odisha State. This is the first photographic evidence of the species from the sanctuary.

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