



King Cobras, *Ophiophagus hannah* (Cantor 1836), in a Sub-Himalayan Grassland Ecosystem: A Note on their Conservation Significance

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King Cobras (*Ophiophagus hannah*), the world's largest venomous snakes that can reach lengths to 5.85 m, are active mostly during the day and feed primarily on other snakes (Das et al. 2008). This species is unique among snakes as it constructs nests reaching heights to about 60 cm (Shankar et al. 2013; Titus and Pereira 2013). King Cobras mate early in the rainy season and females lay clutches of 20–40 eggs, which hatch after about 110 days (Titus and Pereira 2013). These snakes occupy diverse habitats that include lowland wet tropical forests, coastal rainforests, tropical and subtropical wet montane forests, dry forests, swamps, marshes, mesic open scrublands, plantations, cultivated areas, alluvial and terai grasslands, mangrove swamps, open country, disturbed areas, and areas near human habitations (Narayan and Rosalind 1989; David and Vogel 1996). Widely distributed in southern Asia and throughout much of India (Uetz et al. 2025), in Assam the species has been recorded in

Dibrugarh, Tezpur, Margherita, and the North Cachar Hill District, the Garbhanga Reserved Forest (RF), along the Kulsi River in Kamrup District (Das et al. 2008), and Bansbari, Kasimdaha, and the Kuribel Grassland in Manas National Park (Narayan and Rosalind 1989). King Cobras currently are listed as Vulnerable (VU) on the IUCN Red List (Stuart et al. 2012) and, in India, are protected under Schedule II of the Wildlife (Protection) Act of 1972 (Ministry of Law and Justice 2022).

Habitats in Manas National Park are of five main types: woodland, savannah grasslands, alluvial grasslands, bodies of water, and areas covered by river sand (Ghosh et al. 2014; Fig. 1). Savannah grasslands are characterized by tall grasses, such as *Saccharum narenga*, *Imperata cylindrica*, *Phragmites karka*, *Arundo donax*, *Saccharum spontaneum*, *Themeda arundinacea*, *Saccharum procerum*, and *Vetiveria zizanioides*, interspersed with trees like *Bombax ceiba* and *Dillenia pentagyna*.

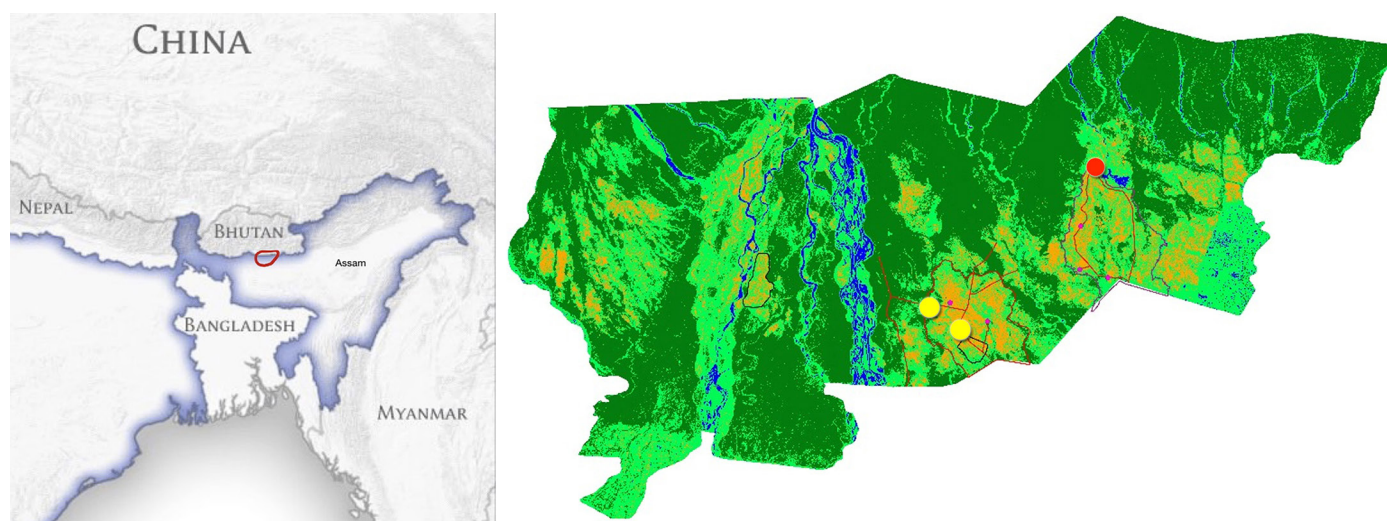


Figure 1. Map of Manas National Park, Assam, India, showing locations where King Cobras (*Ophiophagus hannah*) have been recorded. Yellow dots mark sites noted by Narayan and Rosalind (1989) and the red dot indicates the location of the new record in this report. Dark green denotes woodlands, light green savannah grasslands, light brown alluvial grasslands, and blue indicates bodies of water around some of which are areas encroached upon by sand.

Substantial changes in habitats occurred between 2000 and 2020 (Banerjee et al. 2022): in 2000, grassland covered 11.66 km² (79.17%), grassland woodland mosaic covered 3.03 km² (20.57%), and woodland covered 0.036 km² (0.24%), but by 2020, grasslands were reduced to 7.29 km² (49.54%), woodlands increased to 0.75 km² (5.10%), and grassland-woodland mosaics covered 6.67 km² (45.33%) of the area in the park. Grasslands in particular are undergoing rapid degradation primarily due to human activities, the proliferation of invasive alien plant species like *Chromolaena odorata* and *Mikania micrantha*, and the acceleration of the natural succession of woody species such as *Bombax ceiba* and *Dillenia pentagyna* (Das et al. 2019; Thakur et al. 2024). The remaining grasslands continue, at least in the present, to support a considerable faunal diversity, including some grassland-dependent species like the Pygmy Hog (*Porcula salvania*), Hispid Hare (*Caprolagus hispidus*), and Bengal Florican (*Houbaropsis bengalensis*) (Narayan and Deka 2017), and an array of herpetofauna (Das et al. 2014; Lahkar et al. 2022).

At 1530 h on 28 September 2023, we encountered a King Cobra (with an extended hood) that measured nearly 3 m in length (Fig. 2) near Doujeng Camp in the Bhuyanpara



Figure 2. This King Cobra (*Ophiophagus hannah*) unfurled its hood alongside a small canal in the Doujeng Camp next to grassland patches in the Bhuyanpara Range in Manas National Park, Assam, India (RAJ 00010). Photographs by Koushik Rajbongshi.

Range in Manas National Park (26.75861, 91.09273). This snake, which matched morphological characteristics listed in Ahmed et al. (2009), was moving along a small stream among grassland patches near the Doujeng anti-Poaching Camp Road. A photographic voucher has been submitted to the Reptiles & Amphibians Digital Repository (RAJ 00010). The identity of the species was confirmed by Benjamin Tapley, currently serving as Curator of Herpetology and Team Leader at the Zoological Society of London.

In addition, shortly after the annual grassland burning in March 2024, we found a shed skin (length 252 cm) from a King Cobra (Fig. 3) in an area 1.5 km southeast of where we encountered the King Cobra noted previously. Vegetation was composed primarily of *Saccharum spontaneum*, *Saccharum narenga*, *Imperata cylindrica*, and *Alpinia nigra*.

This report is the first documented record of a King Cobra in the Bhuyanpara Range of Manas National Park. In northeastern India, sub-Himalayan tall grasslands can support King Cobra populations by offering abundant prey; cover for hunting, breeding, and nesting sites; opportunities for effective thermoregulation; and they can function as migration corridors (Narayan and Rosalind 1989; Martino et al. 2011; Rao et al. 2013).

Effective management of successional grasslands, including sub-Himalayan grasslands, relies on controlled annual burning that encourages new grass growth, hinders tree succession, and maintains vital nutrient cycles; however, unregulated burning can have negative impacts on King Cobras and other species. Implementing controlled systematic burns can mitigate fatalities of vulnerable animals (Rajbongshi et al. 2023). Preserving sub-Himalayan grasslands is essential for the conservation of biodiversity in the region.

Literature Cited

Ahmed, M.F., A. Das, and S.K. Dutta. 2009. *Amphibians and Reptiles of Northeast India. A Photographic Guide*. Aaranyak, Guwahati, India.



Figure 3. A shed skin of a King Cobra (*Ophiophagus hannah*) found among patches of grasses following the yearly grassland burning in Manas National Park, Assam, India. Photographs by Koushik Rajbongshi.

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