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Two rare reptile species' destinies are entangled with human superstition

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Abstract

This study explores the critical conservation status of two scarce reptile species in West Bengal, India: the Yellow Monitor (*Varanus flavescens*) and the East Indian Leopard Gecko (*Eublepharis hardwickii*). Both species face dire threats due to human superstitions and beliefs, which have led to significant exploitation and habitat destruction. The Yellow Monitor, predominantly inhabiting wetland areas, is often victimized for its perceived magical properties and culinary value. At the same time, the East Indian Leopard Gecko is targeted for its supposed medicinal benefits despite the absence of scientific backing. Through systematic seasonal surveys in critical habitats, we documented the occurrences and behaviors of both species, revealing the urgent need for enhanced public awareness and conservation efforts. The research underscores the importance of addressing human misconceptions about these reptiles, promoting their ecological significance, and establishing effective conservation strategies to mitigate threats from habitat loss and wildlife trade. Additionally, we advocate for regional collaboration and community engagement in wildlife protection initiatives to secure a sustainable future for these vulnerable species.

Keywords: East Indian leopard gecko, Wildlife trade, yellow monitor

Introduction

As of December 2023, India has 778 species and subspecies of reptiles, including 427 that are endemic to the country (Fauna of India, Checklist 2024). Due to their distinctive morphological

features and huge size, monitor lizards may produce panic among people. But they are far from being harmful. Humans have caused more damage to these reptiles. India is home to four Monitor lizard species – Water monitor (*Varanus salvator*), Bengal Monitor (*Varanus bengalensis*), the Asian the (*Varanus flavescens*), and the Desert monitor (*Varanus griseus*). These reptiles are generally solitary and spend their days on the go, often venturing into localities for food and water. They are even known to help regulate rodent and insect populations. The Yellow monitor is seen in eastern India, majorly in West Bengal. The species is found near wet areas, especially in wetlands such as agricultural fields. Compared to the Bengal monitor, which is adept in climbing trees, the yellow monitor is incapable of doing so due to its short hind toes. What threatens this species the most is the lack of study, which ultimately results in poor awareness. Frequently seen in human-dominated areas, lack of awareness can often lead to the animal being harmed by human beings. According to Das et al. (2021), the yellow monitor is listed as an endangered species (IUCN 3.1). This species is also under CITES Appendix I for the highest level of conservation. India, being a CITES Party, actively prohibits the international trade of endangered wild species, and several measures are taken from time to time to control threats from invasive alien species. According to Mishra et al. (1996) East Indian leopard Gecko (*Eblepharis hardwckii*, Gray 1827) is an endemic reptile species native resident to the Eastern Ghats Odisha, Jharkhand, Bihar, West Bengal, and Bangladesh. The East Indian leopard gecko was one known type, the leopard gecko under the *Eublepharis* genus and the Eublephaidae family. It was first described by the British zoologist John Edward Gray in 1827. According to Mishra et al. (1996), it is a nocturnal, insectivorous species that remains hidden underneath rocks and stones during the day Body is robust; the head is large with a distinct neck; the tail is shorter than the body length. Body color dark brown above with broad light-colored transverse marking; first starts at the neck, the second at the mid-body. In the case of Srinivusulu et al. (2011) the tongue of the East Indian leopard gecko is pinkish red, flat, thin, and able to extend over to the eyes and head. It has been assessed as the Least Concern by the IUCN Red List (The study also reveals further distribution of the East Indian leopard gecko in the Jhargram region of West Bengal).

Observation

We have prepared a seasonal survey team to monitor forest biodiversity. During our scheduled survey, we photographed the yellow monitor (Figure 1) after the first rain monsoon in the Anandapur jungle area in June 2024. Anandapur is located at 22033’47.2N 87024’33.10E in Paschim Medinipur district and has a huge forest area. On the other hand, on a rainy night, we found two East Indian leopard geckos (Figure 2) in the hill area of Jhargram in August 2024. Jhargram is located at 22.45°N 86.98°E. It has an average elevation of 81 meters (265 feet) (Fig. 3). The district is a part of the Chota Nagpur Plateau, which gradually slopes down towards the east, and hilly terrain occurs in the north-western part of the district. Kakrajhore area has the highest altitude of about 300 meters. This area is covered with unfertile, hard lateritic soil and rock. Both areas reserve an ideal habitat for reptile diversity.

Figure1. Yellow monitor (*Varanus flavescens*)

Figure 2. The East Indian leopard gecko (*Eublepharis hardwickii*)

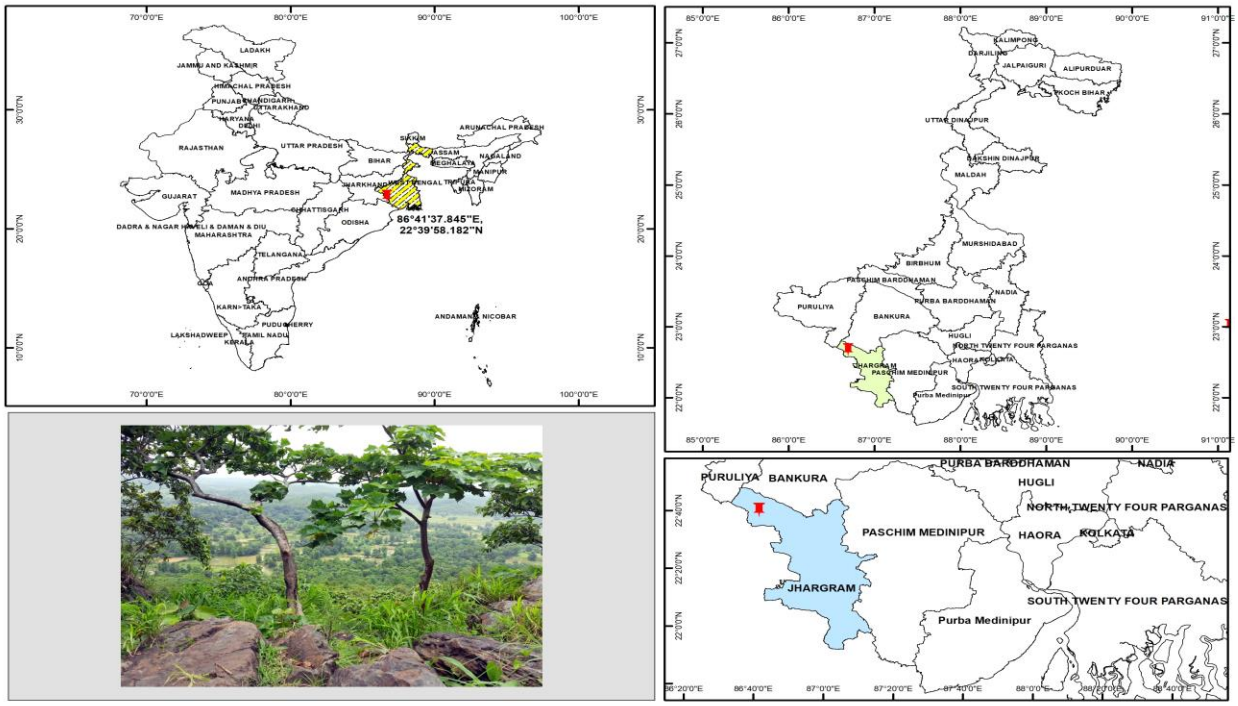

Figure 3. Habitat of the East Indian leopard gecko in hilly terrain in Jhargram, West Bengal, India

Results and Discussion

One of the biggest threats to monitor lizards is hunting for their skin. The skins of these lizards are used to make drums and their genitals are considered identifiably similar to the hatha jodi (*Martynia annua*) plant. According to superstition, they are said to bring prosperity and are sold widely across South Asia. People also consider their flesh and eggs as a delicacy and an

aphrodisiac. Yellow monitor lizard faces major threats in India from residential and commercial development, agro-industry farming, hunting & trapping terrestrial animals, Intentional use, polluted domestic & urban wastewater, industrial & military effluents, garbage, and solid waste (Das et al.2021). Conservation measures needed include protection of wetlands and marshy areas, ground-level enforcement of wildlife protection laws, identification of origin and rehabilitation of animals, education and awareness, and coordination among law enforcement agencies. According to Bhattacharya et al. (2019), regional awareness programs have recently begun in India, and are needed in the species' other range states (East Indian leopard gecko is in great demand in some Asian countries for its reported medicinal values. Tokay geckos have been used in traditional Chinese medicine for hundreds of years to treat cancer, asthma, diabetes, skin disorders, and a range of ailments. Although wildlife experts and environmentalists say there is no scientific proof to substantiate the purported medicinal properties of this reptile species. 183 countries are signatories to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). It accords varying degrees of protection to more than 37,000 species of animals and plants based on their status in the wild. India is also party to CITES – but India also remains one of the key centers of illegal wildlife trade in the world. Many species are poached and smuggled from India, including the skins and other body parts of tigers, which have made their way to China.

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