

## Short Communication

### Amphibian predation by *Lyroderma lyra* (Family: Megadermatidae) in Bangladesh highlights an expanded trophic role

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#### ABSTRACT

We documented amphibian predation by the greater false vampire bat (*Lyroderma lyra*) in Bangladesh, expanding current knowledge of its trophic ecology. This observation highlights the ecological role of this species as both an insectivore and a carnivore, and underscores the need to investigate the frequency and ecological drivers of such predatory behavior.

## Introduction

Intraguild predation represents a complex ecological interaction that expands the vertical niche breadth of consumer species, thereby enhancing trophic connectivity and contributing to greater food web complexity (Wang et al., 2019). In terrestrial ecosystems, bats and frogs occupy the same trophic guild and play complementary roles in suppressing arthropod populations (Kunz et al., 2011; Wells, 2007). The greater false vampire bat, *Lyroderma lyra* (family Megadermatidae), previously documented as *Megaderma lyra* (Feng et al., 2024), can be identified by its straight, horizontally rounded noseleaf and body size (Srinivasulu et al., 2010). It is distinct from the closely related *Megaderma spasma* (family: Megadermatidae), with a smaller body size and a short, heart-shaped noseleaf base (Srinivasulu et al., 2010), allowing its identification from the photographs.

The greater false vampire bat (*Lyroderma lyra*, family: Megadermatidae) exhibits a notably broad dietary niche, consuming a wide range of small vertebrates, including birds, rodents, and lizards, in addition to insects (Aitken, 1907; Gleadow, 1907;

Mossea, 1931). This trophic generalism, coupled with its use of diverse roosting sites, particularly anthropogenic structures such as buildings, underscores its ecological adaptability and potential resilience in human-modified environments.

Despite this ecological flexibility, the feeding ecology of *L. lyra* remains poorly studied, and no data exist from Bangladesh. Bat research in the country has historically focused on zoonotic disease surveillance, with limited attention to natural history (UI Hasan and Kingston, 2022). As a result, the ecological roles of predatory bats, such as *L. lyra*, especially in fragmented and human-dominated landscapes, remain poorly understood. In this study, we document an ecological observation of *L. lyra* predation on an amphibian in the Madhutila forest range of north-central Bangladesh.

During our amphibian survey on 31 August 2024 in Madhutila Eco-Park under Madhutila forest range in Bangladesh, we observed a *Lyroderma lyra* flying from the edge of a lake and carrying an Indian bullfrog (*Hoplobatrachus tigerinus*) in its mouth ( $25^{\circ}12'20''$ ;  $90^{\circ}8'57''$ ). We followed the bat while it

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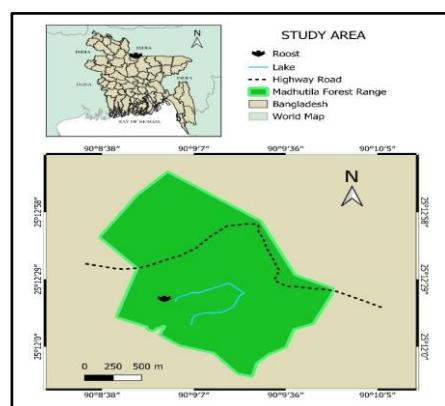


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flew approximately 50 meters and entered a nearby tin shed, an abandoned building (Fig. 2). We observed that the bat was hanging from an iron-made rod affixed to the ceiling inside the house. It was continuously chewing the frog's head for approximately 10 minutes (18:55 h to 19:07 h) (Fig. 1). After 12 minutes of irregular chewing (19:19 h), we observed that the bat consumed the frog's head part entirely and then left the place with the frog's body in its mouth and relocated to a nearby (~10 meters from the building) *Ficus indica* tree. We were unable to track the bats or the frogs later. This observation broadens our understanding of the trophic ecology of *Lyroderma lyra*, emphasizing its role as both an insectivore and a carnivore. Determining the drivers and frequency of such carnivorous behavior is key to assessing *Lyroderma lyra*'s ecological role and adaptability in changing landscapes.



**Fig. 1.** *Lyroderma lyra* is holding the head of an Indian Bullfrog (*Hoplobatrachus tigerinus*).



**Fig. 2.** The map shows the roosting locations of *Lyroderma lyra*. A predation event involving this bat was observed near Lakeshore, within the Madhutila forest range.

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## Authors contribution

Md Rifat Hasan: Conceptualization, investigation, original draft and project administration. Akash Mojumdar: Conceptualization, review, editing and visualization. Md. Sabbir Ahamed: Review and editing.

## Conflicts interest

The authors declare that there are no potential conflicts of interest regarding the publication of this article.

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