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***Halcyon smyrnensis* predation on *Hemidactylus frenatus* in an urban ecosystem in national capital territory of Delhi**

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Abstract

This note reports on an observation made on the predation of an individual of *Hemidactylus frenatus* by the *Halcyon smyrnensis* in an urban park in the National Capital Territory of Delhi. Documenting such small behavior and responses of the wild species would be of paramount importance in management and conservation of the native species in an urban ecosystem.

Keywords: *Halcyon smyrnensis*, predation, *Hemidactylus frenatus*, North India

Introduction

Halcyon smyrnensis (white-breasted kingfisher) is an opportunistic predator bird, which ranges from the Middle East, South Asia, Andaman Islands and China, to South-East Asia, including Peninsular Malaysia and the Greater Sunda islands of Indonesia (in parts of Afghanistan, Azerbaijan, Bangladesh, Bhutan, Cambodia, China, Egypt, Hong Kong, India, Indonesia, Iran, Islamic Republic of Iraq, Israel, Jordan, Kuwait, Lao People's Democratic Republic, Lebanon, Macao, Malaysia, Myanmar, Nepal, Pakistan, Palestinian Territory, Saudi Arabia, Singapore, Sri Lanka, Syrian Arab Republic, Thailand, Turkey and Viet Nam)^[1, 2]. The natural habitat of the white-breasted kingfishers has been considered as forests, agricultural fields, coastal areas, wetlands, swampy areas, mangrove swamps and moreover the urban habitats. The species is a generalist carnivore and opportunistic feeder, which mainly feeds on crustaceans, insects, earthworms, rodents, snakes, fish, frogs and small reptiles. However, the bird's predation on small birds has also been reported.

White-throated kingfisher is listed as Least Concern in IUCN Red List of Threatened Species. However, is protected under the Schedule IV of the Indian Wildlife (Protection) Act, 1972, which imposes penalty for any kind of violation of the law. In this note, we report on an observation made on the predation of an individual of *Hemidactylus frenatus* common house gecko by white-breasted kingfisher in an urban park in the National Capital Territory of Delhi.

Materials and Methods

Hudco Park is located in the heart of south Delhi (28°56.2'23.7"N, 77°22.6'24.5"E) over an area of 72843.4 sqm. Interestingly, during the year 1989, at the inception stage of the project, in order to develop an ecofriendly structured building, the scope of developing a green area was kept, which now a day is serving as a natural habitat for bird species in the NCT of Delhi. Plant species in the area includes: *Cassia fistula* (Amaltas), *Ficus religiosa* (Pipal), *Ficus virens* (White Fig), *Bombax ceiba* (Semal), *Bauhinia variegata* (Kachnar), *Callistemon viminalis* (Weeping Bottlebrush), *Polyalthia longifolia* (Ashok), *Pithecellobium dulce* (Jungle Jalebi), *Alstonia scholaris* (Black-board tree), *Ficus benghalensis* (Indian Banyan), *Mimusops elengi* (Maulsari) and *Morus alba* (Mulberry). This note is an ecological observation made during our long-term studies on the bird's diversity in some urban green spaces in the National Capital Territory of Delhi. While taking observations, geographical coordinates were recorded using a handheld GPS receiver (Garmin eTrex 30x) and photographs were taken using Canon EOS-700D camera. Field binoculars (Nikon Action Series, 10×50 CF) were also used for observing the bird maintaining a distance.

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Results and Discussion

On 23 February 2019 (9:50 h), while documenting the avifaunal species in Hudco Park, we came across a white-breasted kingfisher, which was perching on a street light pole. The bird was observing something towards a rough stone wall located across the building of the Ansal Plaza mall. After quite a few seconds, the bird lunged towards the wall, and flew back towards a tree near the spot. When we approached the tree, where the kingfisher went and sat down, we observed that the bird was holding an individual of common house gecko in its beak (Plate 1 & 2). It was clear that the bird grabbed the gecko from the wall. After few seconds, the bird, with the help of its beak, twisted the gecko in the air, leading gecko inactive. In between the act, the bird was also hitting the gecko on the branch of the tree. The incident continued for about 3-4 minutes, till the bird made the gecko either unconscious or dead. The bird then lifted its neck up and started swallowing the gecko slowly. The whole event lasted for about 7-8 minutes, after which the bird flew away from the spot.

White-breasted kingfishers are known to hunt their prey from a perch by diving down and catching the prey with their bills. White-breasted kingfishers are often known to seize off the prey from the ground and flown them to the perch, where it is bludgeoned before being swallowed [3, 4]. On the other hand, the common house geckos are ectothermic and are least active during the cold months. Besides, the species performs thermoregulatory behaviour during the winter, which sometimes leads to the cause of their death.

The Hudco Park is one of the most diverse urban parks in the National Capital Territory of Delhi, which forms an important repository of bird's fauna. Documenting such behavior and responses of wild species, underpinning the species' functional role in maintaining urban ecosystems and biological diversity, especially in context of changing climatic conditions, would thus be of paramount importance in management and conservation of native faunal species in the urban ecosystems.



Plate 1: An individual of white-throated kingfisher



Plate 2: White-throated kingfisher holding an individual of common house gecko

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