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First photographic record of Red-breasted Parakeet *Psittacula alexandri* (Linnaeus, 1758) (Psittaciformes: Psittaculidae) from Haryana state in India

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Abstract - Haryana is a state in northern India, situated in the Indo-Gangetic Plain. The single female individual of Red-breasted Parakeet *Psittacula alexandri* was observed on 23 November 2023 in the Kurukshetra University Campus, and its observation was presented as the first photographic record from the state of Haryana. The survey was also targeted to record and observe the species' activity, interaction with other bird species, and nesting patterns. The presence of a single female individual of the Red-breasted Parakeet is primarily observed to be an example of a vagrant sighting of this bird. It is a near-threatened species and shows a global declining population trend. Addressing the pet trade and enforcing strict regulations on the import of faunal species are imperative in this regard. Public education regarding non-native species and their effects on ecosystems is also necessary.

Key words: captivity, feral, new record, Kurukshetra University, non-native, Red-breasted Parakeet

Riassunto - Prima registrazione fotografica del parrocchetto dal petto rosso *Psittacula alexandri* (Linnaeus, 1758) (Psittaciformes: Psittaculidae) nello stato di Haryana in India.

L'Haryana è uno Stato dell'India settentrionale, situato nella pianura indo-gangetica. L'unico esemplare femmina di parrocchetto dal petto rosso (*Psittacula alexandri*) è stato osservato il 23 novembre 2023 nel campus dell'Università di Kurukshetra e la sua osservazione è stata presentata come la prima registrazione fotografica nello Stato dell'Haryana. L'indagine mirava anche a registrare e osservare l'attività della specie, l'interazione con altre specie di uccelli e i modelli di nidificazione. La presenza di un unico esemplare femmina di parrocchetto dal petto rosso è stata osservata principalmente come esempio di avvistamento vagante di questo uccello. Si tratta di una specie quasi minacciata che mostra una tendenza al declino della popolazione a livello globale. A questo proposito, è fondamentale affrontare il commercio di animali domestici e applicare norme severe sull'importazione di specie faunistiche. È inoltre necessaria l'educazione del pubblico sulle specie non autoctone e sui loro effetti sugli ecosistemi.

Parole chiave: cattività, selvatico, nuovo record, Università di Kurukshetra, non autoctono, parrocchetto dal petto rosso

Introduction

The state of Haryana has a diverse spectrum of landscapes, spanning from foothills in the north to relatively flat alluvial plains in the center and dunes of sand in the south. Being an agriculturally enriched state, it covers 80% of its land under cultivation, and merely 3.9% of its land is classified as forest. The state of Haryana covers an area of 44,212 km² and is well connected to the states of Uttar Pradesh, Uttarakhand, and Himachal Pradesh with the presence of a natural corridor of Kalesar National Park with significant and rich avifaunal diversity (Rai & Vats, 2023).

Birds are the utmost beautifying creativity of nature that enhances the earth's biodiversity and inhabit the land, sea, freshwater, and wide-ranging habitats from lower to higher regions. Birds are an integral facet of natural heritage and have an economic impact on various continents, particularly in Asia, with well-connected flyways. Their ecological roles and services are significant for maintaining ecological integrity as well as human well-being (Whelan *et al.*, 2015).

Parakeets are small-sized, seed-eating parrots with long, tapered tails that occur worldwide and are particularly abundant in the Indian subcontinent, throughout south-east Asia and the Pacific Islands, and tropical America. These birds belong to the order Psittaciformes and family Psittacidae. There are 391 species of parrots reported globally, of which 12 species are reported from India (Praveen *et al.*, 2016). As per bird studies in the state of Haryana, mainly four different types of parakeets are found, which include Rose-ringed, Alexandrine, Slaty-headed, and Plum-headed (Gupta *et al.*, 2009, Kalsi *et al.*, 2019, Sinhmar & Babbar, 2023, Rai & Vats, 2023).

Red-breasted Parakeet, also known as Mustached Parakeet *Psittacula alexandri* (Linnaeus, 1758), is the only parakeet with a rosy breast; it is one of the most widely distributed species from the genus *Psittacula* and is well-known for the majority of its regional variants (del Hoyo *et al.*, 1997, John *et al.*, 2016). Eight subspecies of *Psittacula alexandri* are distributed throughout the globe. The Mustached Parakeet gets its name from a black stripe that runs underneath its beak. The species' other distinguishing characteristics include a uniform grey-blue head, a short line that runs from the forehead to the eye, salmon pink breast and upper belly, a blue upper tail feature with green-yellow ends, and a blue-green outer tail feather. It is a near-threatened species and shows a global declining population trend (IUCN, 2023) (Tab. 1).

Red-breasted Parakeet shows sexual dimorphism where the male has green plumage, a red beak, a throat, breast, and upper belly that are pink to salmon in color, and a grey head with an alluring bluish tinge that stretches thinly across the forehead and larger over the cheeks whereas the female has shorter tail feathers than those of males, a black beak, and a duller pink breast color (John *et al.*, 2016). The Red-breasted Parakeet species is distributed in northern and northeastern parts of India, Nepal, Bhutan, Bangladesh, Myanmar, Thailand, Cambodia, Laos, Vietnam, Indonesia, and southeastern parts of China. In India, these parakeets are distributed in the states of Uttarakhand, northern Uttar Pradesh, northern Bihar, Sikkim, northern West Bengal, Assam, Meghalaya, Tripura, Arunachal Pradesh, Nagaland, Manipur, Mizoram, and the Andaman Islands (IUCN, 2023) (Fig. 1).

Methods

Study area

The Kurukshetra University is located in the Kurukshetra district of the state of Haryana with a latitude of 29°57'44.62''N and a longitude of 76°49'10.80''E, and it is situated on the western bank of the holy Brahma Sarovar (Fig. 2). The Kurukshetra district has wildly fluctuating temperatures throughout the year. In summer, it may reach up to 40°C, while in the winter, it can drop as low as 2°C. Gupta *et al.* (2009) reported a total of 92 bird species from Kurukshetra University, Campus. The campus is surrounded by a variety of plants, giving it a lush environment with a wide variety of birds. It serves as an excellent habitat for both resident and migratory (summer and winter) avian species. Important migratory bird species include, Indian Golden Oriole (*Oriolus kundoo*), Common Hawk Cuckoo (*Hierococcyx varius*), Lesser Whitethroat (*Sylvia curruca*), Common Chiffchaff (*Phylloscopus collybita*), and so on, making the campus an ideal location for avifauna (Gupta *et al.*, 2009).

Methodology

During the field survey of Kurukshetra University Campus in the month of November by random field visits, the first record of Red-breasted Parakeet female was reported nearby the Distance Education building adjacent to University Stadium at the location 29°57'22''N and 76°49'03''E. Nikon COOLPIX P1000 digital camera with 125× (24 mm to 3000 mm) ultra-power zoom and 250× dynamic fine zoom was used to photograph the bird species. The identification of birds was confirmed following the field guide of Grimmett and Inskipp (2019).

Results

After a first record since November 23, 2023, the observations were made daily in November, December 2023, and January-February 2024, covering a radius of about 200 meters to the bird

spotting site. The occupied nest by the Red-breasted Parakeet was also located during the field survey. The survey was also targeted to record and observe the species' activity, interaction with other bird species, and nesting pattern of the species (Tab. 2).

During the avifaunal survey at Kurukshetra University, a single female individual of Red-breasted Parakeet was observed for the first time. It represents the first photographic evidence from Kurukshetra as well, and this species represents the first photographic record from the state of Haryana (Fig. 3A). This significant record increases the number of reported parakeet species from the state of Haryana from 4 to 5. The presence of this new record proves the habitat suitability of bird species at Kurukshetra University Campus. First time on 23 November 2023, a single individual of female Red-breasted parakeet was sighted on a silver oak (*Grevillea robusta*) tree, commonly known as southern silky oak, along the side of the girls' hostel road near to basketball court of the university sports complex. The sighting of the Red-breasted Parakeet was detected by hearing unusual calls generated by an individual different from other parakeets of the area. A nest of Red-breasted Parakeet was also reported from the study area, with an observation of the occupation of an abandoned tree cavity of other bird species (Fig. 3B and C). Regular observations also spot the association of this single female Red-breasted Parakeet with a pair of Rose-ringed Parakeet at the spotting location (Fig. 3D).

Discussion and Conclusions

India's biodiversity is under threat from several factors. Non-native species can change ecosystem services by influencing population, community interactions, ecosystem processes, and abiotic factors across invader taxa, ecosystem types, and geographical regions. For a variety of purposes, including beauty, food, hunting, biological control, and the pet trade, birds have been brought outside of their original habitat (Long, 1981; Duncan *et al.*, 2003). These human introductions have frequently resulted in the successful establishment of numerous exotic birds and their range expansion beyond their natural areas (Long, 1981; Temple, 1992). Parrots are one of the well-known birds that have been brought and kept in captivity all over the world. Many non-native parrots have spread to new regions outside of their natural range in recent years (Blackburn & Duncan, 2001).

In their natural habitat, parrots have been known to harm crops in general (Long, 1981; Jepson *et al.*, 2001), particularly when they eat young fruits (Leven & Corlett, 2004). Huge groups of red-breasted parakeets have been observed in their native area raiding rice and maize fields, causing damage to up to 50% of the crops (Long, 1981; Jepson *et al.*, 2001). Due to competition for similar resources, non-native birds may be a hazard to native bird species (Yap & Sodhi, 2004; Peh, 2010). Native birds eat the seeds of the ripe fruits, while the Red-breasted Parakeet has been known to eat the entire unripe fruit on the same food source. Non-native hole-nesters may reduce the breeding success of native hole-nesters such as barbets, hornbills, and other parakeet species (John *et al.*, 2016).

Non-native bird species like Red-breasted Parakeet may be the cage escapee or feral bird which has previously been documented as wild populations from cities such as Mumbai. A few studies have also been reported in Tamil Nadu, Karnataka (John *et al.*, 2016), Gujarat (Patel *et al.*, 2019), Uttarakhand (Mohan & Sondhi, 2015), and West Bengal (Ranade, 2021), and the present observation supports the expansion of their range or an example of vagrant sighting. The monitoring and conservation efforts were needed to conserve this species in the particular area.

Significant statement

The Red-breasted Parakeet observed from Kurukshetra University Campus is the first photographic record from the State of Haryana presently, and shows no evidence of any impact on native bird species of the area. The presence of a single female individual of Red-breasted Parakeet is primarily observed to be an example of a feral bird or escapee specimen from a captive environment. Holding the abandoned nest of native nesters by non-native species may cause competitive factors like a reduction in breeding success of native species, or maybe an example of positive association and interaction with native bird species. Addressing the pet trade and enforcing strict regulations on the

import of faunal species are imperative in this regard. Public education regarding non-native species and their effects on the ecosystem is also necessary.

Ethics approval and consent to participate

Not applicable.

Conflict of interest

The author declares no competing interests.

Availability of data and materials

Not applicable.

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Tab. 1 – Red list history of the Red-breasted Parakeet.

Year	Category	IUCN criteria
2016	Near threatened	A2cd+3cd+4cd
2013	Near threatened	A2cd+3cd+4cd
2012	Least concern	-
2009	Least concern	-
2008	Least concern	-
2004	Least concern	-
2000	Unknown (LR/lc)	-
1994	Unknown (LR/lc)	-
1988	Unknown (LR/lc)	-

LR/lc, ...; IUCN, International Union for Conservation of Nature.

Tab. 2 – Records of the Red-breasted Parakeet from Kurukshetra University, Kurukshetra, Haryana.

Observation dates	N. of individuals (Sex)	Locations	Coordinates	Elevation	Remarks
23.11.2023 to 08.12.2023	1 (female)	Tree at Distance Education building	29°57'22''N 76°49'03''E	260 m	Nest located
09.12.2023 to 22.12.2023	1 (female)	Tree at Distance Education building	29°57'22''N 76°49'03''E	260 m	Association with other sp.
23.12.2023 to 08.01.2024	1 (female)	Tree at Distance Education building	29°57'22''N 76°49'03''E	260 m	Association with other sp.
09.01.2024 to 22.01.2024	1 (female)	Tree at Distance Education building	29°57'22''N 76°49'03''E	260 m	Association with other sp.
23.01.2024 to 05.02.2024	1 (female)	Tree at Distance Education building	29°57'22''N 76°49'03''E	260 m	Association with other sp.



Fig. 1 – Map showing the global distribution range of the Red-breasted Parakeet. Reproduced from: DataZone by BirdLife.

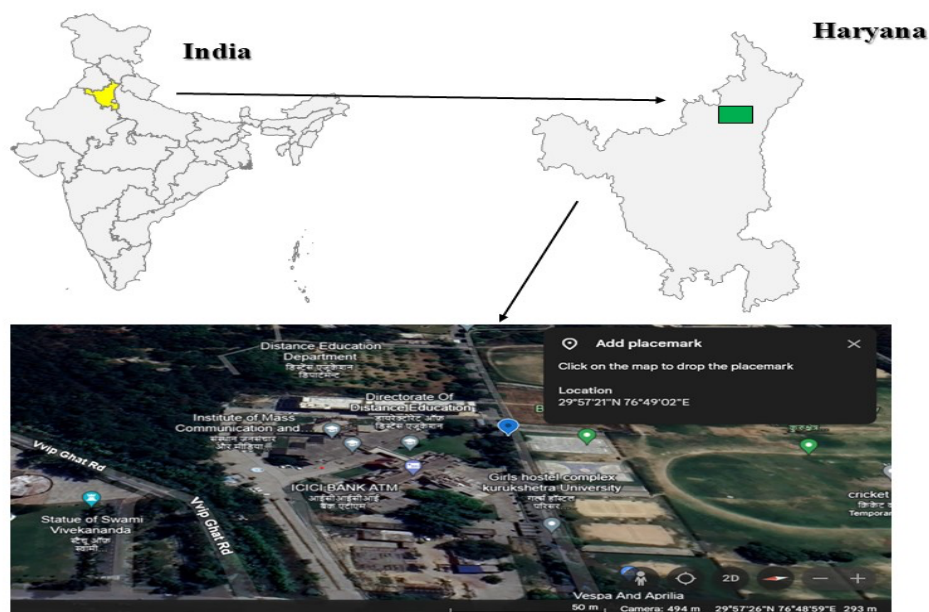


Fig. 2 – Map showing the sighting area of the Red-breasted Parakeet.



Fig. 3 – A) Spotting of a single individual female Red-breasted Parakeet at Kurukshetra University, Haryana; B) abandoned nest occupied by the Red-breasted Parakeet; C) nest occupied by the Red-breasted Parakeet on a Silver Oak tree; D) association of the Red-breasted Parakeet with native Rose-ringed Parakeet pair.