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A Survey of *Treron phoenicoptera* (Latham, 1790) in District Mirpurkhas, Sindh, Pakistan

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Abstract

Though Sindh province of Pakistan has rich biodiversity, a large number of its animal species are still unknown to the world. The yellow-footed green pigeon (*Treron phoenicoptera*) has an extremely limited distribution, and habitat fragmentation is blamed for that. It is seen very rarely in different parts of Pakistan and therefore very little is known about this species. In this context, a study was proposed to delve into distribution of *T. phoenicoptera* in district Mirpurkhas and the survey was carried out from January to December 2024. The extent of its distribution was confirmed along with ascertaining the status of bird as permanent resident or temporary visitor. Present study recorded Yellow footed green pigeon through observations carried out from early morning to late evening. The morphological characteristics and all the possible variations in morphological parameters were recorded for the definite identification of species in question. Present study recorded the distribution of *T. phoenicoptera* in district Mirpurkhas extremely rare, while their nesting sites were found harboring these pigeons permanently specifically in agricultural areas of fruit cultivations unlike other pigeon species that make nests in human settlement areas. The *T. phoenicopterus* was recorded as yellowish olive-green, while the crown was blue grey. The outer ring of iris was pink-red and inner ring was observed pale blue. Their bill was silver grey with light green color, while legs were bright yellow. The morphometric was recorded as: body weight (g) 251.8 ± 9.3 , body length (cm): 29.9 ± 2.5 , tail feathers length (cm): 9.1 ± 2.1 , and wingspan length (cm): 19.2 ± 2.0 .

Keywords: Pigeon, Morphology, Ecology, Occurrence, Sindh



Introduction

Treron (Vieillot, 1816) is a genus of birds in the pigeon family and they are often known as green pigeons. This genus contains 30 species including *Treron phoenicoptera* that is named as yellow-footed green pigeon, because of its upper parts and its yellow legs and feet are green in color. *T. phoenicoptera* (Latham, 1790) is widely distributed throughout the Indian subcontinent and is a commonly sighted frugivorous bird in the tropical forests of eastern Himalaya (Ali & Ripley 1987). But this bird is found in Sindh Pakistan very rare number. They are often spotted around Ficus trees as these are their primary source of food. It loves figs from the banyan and peepal trees. They feed on various fruits, berries and crops. They also feed on buds, shoots and various grains. Yellow footed green pigeon belongs to the important frugivorous (fruit eating bird) group of tropical forests and perform the valuable service of seed dispersal and forest regeneration and in some cases are the sole vector for seed dispersal of certain tree species (Bancroft, et al., 2000).

The *treron pheonicopterus* is common species of green pigeons and found in India and Bangladesh. *T.pheonicopteus* belongs group of frugivorous (fruit eating birds) feeds on fruit including many species of Ficus. The yellow footed green pigeon forage in flocks. They are often seen sitting on the tops of emergent trees in dense forest areas. Yellow footed green pigeons are sitting in couples on trees branches. (Jobling, 2010). They are commonly found in agricultural land, village road side trees particularly Banyan and Peepal trees. Their breeding season started from April and ended in June. They build a weak nest from leaves, twigs, grass, and sticks. Birds provide us food, medicine, fertilizers and also bring about pollinations. Birds are a part of the food chain. Birds also perform vital ecological role, besides their economic role (Gill, et al. 2020).

T. phoenicoptera is categorized as Least Concern (LC) by International Union for Conservation of Nature (IUCN), however its occurrence and population status in Sindh is yet to be confirmed. In this context, extensive field surveys were carried out in Sindh to determine the status of *T. phoenicoptera* for the first time.

Material and Methods

Field surveys were carried out in different study sites such as Shujabad, Sindhri, Digri, Tando Jan Muhammad and Jhuddo of District Mirpur Khas. Regular monthly visits were conducted at different sites of study areas using GPS (Global Positioning System) from January to December 2024. The study areas were explored thoroughly from early morning (06:00– 10:00hr) to evening (17:00– 20:00 hr). Information was collected from local people and farmers about presence of yellow footed green pigeon pigeons and in a specific locality of study sites their distribution, extent of their colonization and the type/types of habitats of their occurrence. Their density was estimated by observations and by assessing the area occupied by them. The scientific literature (Morris and Hawkins, 1998, Monroe, 1997, Mayr et al., 1979, Levi, 1977) was used for the methodology of survey. Yellow footed green pigeons were sighted and photographed using DSRL camera (SF400) and Binocular camera (Super Zenith 8X40). Trapping net and pitfall traps were used for capturing few specimens. Morphological examination such as body weight, body length, wingspan beak,



Vol. 3 No. 1 (January) (2025)

limbs, body coloration and eye coloration of live specimens which were then liberated free in their habitat. Electronic balance, vernier caliper and Metric Ruler were used for measuring body parameters. Data was collected regarding prevalence of human encroachment such as habitat destruction, hunting and illegal trade of yellow footed green pigeon in the study area.

Result and Discussion

During monthly surveys, *Treron pheonipterus* that belongs to order Columbiformes (Latham, 1790) was collected. This order consists of only one family Columbidae (William Elford Leach, 1820), representing 40 genera of which genus *Treron* (Louis Jean Pierre Vieillot, 1816) embraces **29 species** including *Treron pheonipterus*. Present study shows that the *T. pheonipterus* is a medium-sized green pigeon (fig. 1). Color of the body was observed yellowish olive-green which was duller overhead and the crown was bluish grey. The outer ring of iris was observed as pink-red and inner ring was pale blue. There was a lilac patch on the shoulders and a yellow bar in the blackish wings. Abdomen dull green with greyer flanks and bright Sulphur-yellow lower belly and leg feathers that were bright yellow (fig. 2). They have a classic anisodactyl toe arrangement having one long toe pointing back and three toes pointing forward. The breast and throat of this bird were pale yellow-orange in color, and the underparts were pale. Their neck was yellow-mustard, legs were yellow and bill was creamy-white and upper mandible was curved. The female of this species is duller when compared to the male and she even has a smaller mauve patch on her shoulder. Morphometrics of *Treron pheonipterus* was done properly (figure 3-4) and mentioned in table 1.

Figure 1-2: *Treron pheonipterus* observed in district Mirpurkhas & a flock of *T. pheonipterus* dwelling village.





Figure 3-4: Morphometrics of *Treron pheonicopterus* & measurement of wingspan of yellow footed green pigeon

Table 1: Physical measurement of yellow footed green pigeon

Body Parameters	Min-Max	Mean \pm S.D
Body weight (g)	235-265	251 \pm 9.3
Body Length(cm)	27-35	30 \pm 2.4
Beak length(cm)	2.3-2.8	2.5 \pm 0.15
Tail feather length(cm)	6-12	9.05 \pm 2.09
wingspan length(cm)	16-22	19.1 \pm 2.0

Yellow footed green pigeons were observed to be social and attractive birds, they found in pairs or small groups consisting of 5 to 10 birds but sometimes in large groups. The typical yellow-footed green pigeon diet comprises fruits mainly, hence this species prefer to live in outskirts of cities especially in villages where fruit cultivation occurs specifically Ficus trees (Stiles 1985; Corlett 1998).

The yellow-legged green pigeon breeds between March and April and their nesting behavior resembling to other pigeon species who exhibit parental care. They are documented to nest in forks of tree branches or in shrubs (Stiles 1985; Corlett 1998) however present study recorded their nests only on the trees not in shrubs. They were found nesting and resting very high on the fruit trees. They build a weak nest from leaves, twigs, grass, and sticks. During nesting behavior male collects the nesting materials while female uses these materials into proper nests as mentioned in the literature. (Champion & Seth 1968; Strong & Johnson 2001).

During the survey, it was confirmed that *T. pheonicopterus* live permanently in the study area but their population was recorded very rare as compared to other pigeon species in different study sites of Mir pur khas.

The plantation found in the habitats of *T. pheonicopterus* included *Oryza sativa* (Rice), *Zea mays* (Corn), *Saccharum officinarum* (Sugarcane), *Dalbergia sissoo* (Talhi), *Daucus carota* (Carrot), *Brassica oleracea* (cauliflower), *Momordica charantia* (bitter gourds), *Allium cepa* (Onion). Being social bird, the *T. pheonicopterus* were found nesting near other species nests such as *Corvus splendens* (Crow), *Molpastes cafes* (Bulbul), *Eudynamis scolopaccus* (Koel),



Vol. 3 No. 1 (January) (2025)

Columbia livia (pigeons), *Coturnix coturnix* (Common quail), *Psittacula krameri* (Rose -ringed parakeet) and *Melanerpes erythrocephalus* (Woodpecker).

Conclusion

present study conducted for the first time in district Mir pur khas revealed the rare occurrence of *Treron pheonicopterus*, with limited distribution. Without any sexual dimorphism, yellow footed green pigeon resides in the study area permanently with nesting and resting sites in agricultural areas of fruit cultivation. The ecological conditions of yellow footed green pigeon were recorded as availabilities of sufficient food and water. There were no potential predators of this pigeon in all studies sites. There was no morpho- taxonomic variation, however, minor variation in body weight and body length was recorded. It was ascertained that the hunting of *T. pheonicopterus* is common in the area of present study.

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Vol. 3 No. 1 (January) (2025)

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