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Sighting Records of Brown Crake (*Amauromls akool*) and its Territorial Call Characteristics from Central Aravalli Foothills, Rajasthan

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ABSTRACT

Brown Crake (*Amaurornis akool*, Sykes, 1832) is a member of water birds group classified into Rallidae family and Gruiformes order of class Aves. Brown Crake is an uncommon water bird of Rajasthan. The present article deals with its first photographic confirmed record from Central Aravalli foothills, Ajmer and its territorial call characteristics. The Fundamental Frequency (Hz) was observed as 1337.05 while the Dominant Frequency (Hz) was 2674.11.

Key words: Water birds, Rallidae family, Crake, call Characteristics, Central Aravalli.

INTRODUCTION

On the basis of habitat utilization birds can be classified into several groups. Birds inhabiting the wetlands for nesting, feeding and roosting are commonly known as water birds or wetland birds and few are also known as wetland dependent birds. This characterization is based on the amount of time spent in a particular habitat and its dependence on that microhabitat and includes group of birds popularly known as the waterfowl, waders/shorebirds and seabirds etc. Wetland birds play a significant role in human lives culturally, socially, scientifically and as a food resource, besides being ideal indicators of the health of a wetland.

Wetland birds are an important component of wetland ecosystem, as they form vital links in the various food chains and food webs. Some wetland birds are considered to be crop pests, and, many even play an important role in the control of agricultural pests.

One such intriguing species of wetland birds is Brown Crake. It is a water bird representing the rail and crake group (Rallidae family) and Gruiformes order of class Aves. Its genus name Amaurornis, is derived from the Greek word according to which "*amauros"* means" dusky or brown" and "*ornis*" means "a bird". With all its peculiar characteristics, the Brown Crake (*Amaurornis akool*, Sykes, 1832) is an uncommon water bird in the Aravalli foothills of Rajasthan.

Several researchers and scholars who have been working on water birds of India and Rajasthan have not recorded a single sighting of this species from the wetlands of central Aravalli foothills.

Even researchers working in the same area since 2007 have never recorded presence of Brown Crack from the area. Consequently, there are no published records of this species from central Rajasthan (Sharma et al. 2011; 2012 a & b; 2013; Swaroop and Yadav, 2017; Yadav and Swaroop, 2017; Dutt and Prakash, 2018; Prakash and Dutt, 2018; Upadhyay et al., 2019; Jadon et al., 2019). It is in this background that the first sighting of this species was made in August 2019.

The available literature of Ali and Ripley (1986); Grimmett et al. (1999); Kumar et al. (2005); Kazmierczak & Perlo (2006) exhibited its presence in Rajasthan but not from the central parts of the Aravalli ranges.

During the regular field surveys for avian fauna under the educational field trails we, along with some birding enthusiasts visited the wetlands of central Aravalli foothills of Ajmer during August 2019, and encountered a Brown Crake, which had not been reported earlier from this area. The sighting of this bird is slightly difficult due to its effective camouflage and preferred microhabitat under the vegetation cover at the edges of water body. This perhaps explains why the bird has evaded attention of the researchers so far, over the years. But due to its specific acoustical characteristics during the territorial defence the present group of researchers were able to identify and record its presence from the Anasagar wetland. Possible photographs and videos were captured along with its call recordings for acoustical analysis. The identification was confirmed by using Grimmett et al. (1999); Kumar et al. 2005; Kazmierczak & Perlo (2006); Manakandan et al. (2011); Ali (2012) and Normen (2014).

During early August 2019 the group sighted only three individual birds but later during the same month a total of nine individuals were recorded.

From these observations the group confirmed the sighting records of Brown Crake (*Amaurornis akool*) from the wetlands of central Aravalli foothills, Ajmer, Rajasthan and obtained what seems to be a first photographic record from the area.

Species Description

It is moderate sized crake with body size about 26-28 cm long. There is no clear sexual dimorphism exhibited by brown crake. The adult male and female of Brown crake are similar as sexes are alike, generally females are slightly smaller in comparison to males; upperparts are dark olive-brown in colour. Indistinct supercilia is present on head; sides of head and neck are ashy-grey; chin and throat are white; breast and upper abdomen parts are ashy-grey; remaining under-parts and flanks are brown; legs and feet are fleshy brown in colour. It predominantly prefers swampy reedy beds, water bodies with vegetation cover, and irrigation channels and mainly feeds on small aquatic insects, larvae, molluscs, and worms. At times the bird was seen to prefer marsh plants. The breeding takes place during the period from May to August in selected microhabitats.

Though, Brown Crake is a resident species but it is uncommon in north, west and southern India up to 800 m including the Central Aravalli region; its presence is more seen eastwards towards Bangladesh and west Myanmar.

Figs. 1 & 2. Brown Crake involved in feeding and territorial ritual.

Voice and Call Characteristics

Brown crake makes alarming calls during territory defence and when encountered by a predator or when their territory is breached by other birds from the same species. These calls are in short plaintive notes, heard at daybreak and just before sunset; the call sounding much like that of a shrill rattle. Very little is known about its calling pattern.

MATERIALS AND METHODS

Acoustic Analysis

The territorial calls of the Brown Crake were recorded for the call characteristic analysis. "Sound ruler" (Acoustic analysis Version 0.9.6.0) software was used and spectrum were generated. Selected Parameters Average Entropy, Average Power, Fundamental Frequency and Dominant Frequency

were analysed to characterize the territorial calls of Brown Crake (Table 1 and Fig. 3).

RESULTS AND DISCUSSION

The sighting of the unique species of Brown Crake in Aravalli foothills is a positive indicator of the health of the wetlands in the area. More study and research should be carried out to capitalise on the sighting of these birds in their natural habitat which can further help in preserving of the species and in turn the ecosystem.

Table 1: Call Characteristics of Brown Crake (all values are average of 13 calls)

S. No.	Call Character / Parameter	Average Values
1.	Aggregate Entropy (μ)	3.367
2.	Average Entropy (μ)	2.984
3.	Average Power (dB)	71.7
4.	Fundamental Frequency(Hz)	1337.05
5.	Dominant Frequency(Hz)	2674.11

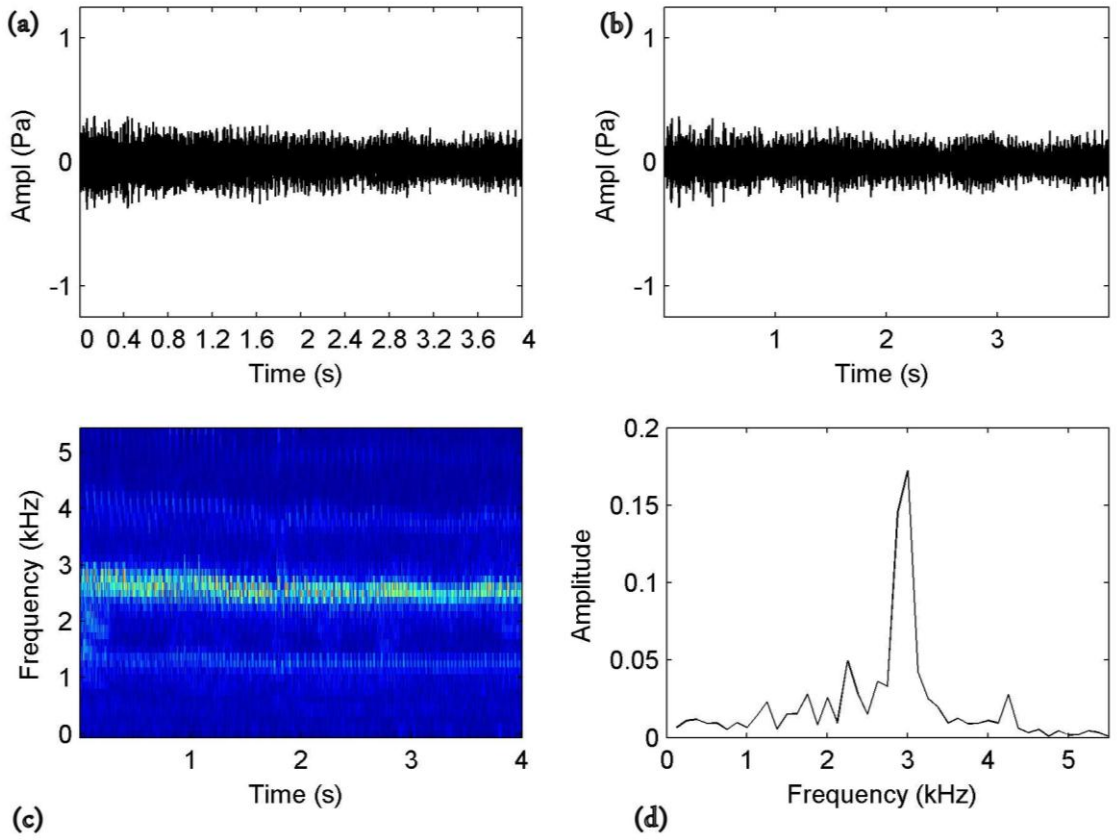

Fig. 3. Call Characteristic Analysis of Territorial Calls of Brown Crake (*Amaurornis akool*); (a) Spectrogram of territorial Call of Brown Crack (Original); (b) Spectrogram of territorial Call of Brown Crack (Extended);(c) Spectrogram between Frequency and Time; (d) Graph between Amplitude and Frequency.

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