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Research Article

Jerdon's Courser: A critically endangered bird with critical habitat factors

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Abstract

Jerdon's Courser, also known as *Kalivi Kodi* (Teugu) locally, is currently restricted to southern Andhra Pradesh. Due to its low population and 140-year hiatus, the nocturnal cursorial bird is categorised as a critically endangered species. It was rediscovered in 1986 in the Lankamalleswara Wildlife Sanctuary in the Kadapa district. The Royal Society for the Protection of Birds, the Bombay Natural History Society, and the Government of Andhra Pradesh all conducted several studies for its existence and distribution. Their thorough investigations established its existence and determined its dispersion. However, there hasn't been much research done on the habitat characteristics that affect a species survival, access to food, and interactions with other species. In this review paper, I sought to explore the habitat of the species with reference to the factors that could be seen and their effects on the species survival, procreation, and population.

Keywords: Jerdon's Courser, critically endangered Bird, habitat, factors, conservation

Introduction

The Jerdon's courser (*Rhinoptilus bitorquatus*), a nocturnal member of the Glareolidae family of pratincole and courser birds, is specific to India. Thomas C. Jerdon, a surgeon and naturalist, first found the bird in 1848, but it wasn't spotted again until 1986 (Bhusan 1986). The IUCN Red List designated this bird as critically endangered because it is thought to have a single, small, decreasing population (Bird Life International 2001).

Whereas it was found in different places in the 1980s (Bhushan 1990), it was solely noted in and around the Sri Lankamaleswara Wildlife Sanctuary in Kadapa district of Andhra Pradesh, India.

Morphology

The Jerdon's courser has wide eyes with a brown iris and a crown. It is a small, nocturnal courser (about 27 cm height). It has is dark brown on posterior side of neck, and above each eye, a dense, whitish supercilium strings around the eye before

reaching the neck. Its fore-neck is rufous and is divided from its brown breast by a white band. Its upper plumage is grey-brown, with a whitish chin and throat. Its lower breast is divided by a second white band, which is why it was formerly known as a "double-banded courser." Its tail is black and white (appear in flight), while the belly is pale. In flight, a white wing bar is also noticeable. Its bill is pale yellow at the base and gape but blackish at the tips of both mandibles. Juveniles are unknown, and there are no known differences between males and females (Rahmani, 2023) (*Figure 1*).

The native name is Kalivi kodi, according to a recent study (Anonyms 1998).

Taxonomy

Jerdon's Courser is the member of the order Charadriiformes. It belongs to the family Glareolidae and furtherclassified into Subfamily Cursoriinae (Maclean 1996). The subfamily Cursoriinae consists of birds of two distinct types: genus *Pluvianus* and true coursers.

Fig.1: Jerdon's Courser, a camera trap image by Jeganathan (2004)

Historical distribution of the Jerdon's Courser (1848-1900)

From the Kadapa district of Andhra Pradesh, T.C. Jerdon published the first scientific description of Jerdon's Courser in about 1848 (Blyth 1848). Later, W.T. Blanford observed this bird in Eastern Maharashtra in May 1867 close to Sironcha on the Godavari and in the Bhadrachalam district of Telengana state in March 1871 (Blanford 1898). Howard Campbell first noticed the Jerdon's Courser in Andhra Pradesh close to Anantapur in 1900 (Baker 1929). Before Bhushan (1986) rediscovered the Jerdon's Courser in the Kadapa region of Andhra Pradesh, close to Reddipalli, it had not been sighted for almost 86 years.

Ever since the Jerdon's Courser was rediscovered, confirmed records have only come from a few sites in andaround the Sri Lankamaleswara Wildlife Sanctuary (LWS) in the Cuddapah district of Andhra Pradesh. Soon after the rediscovery, a survey was conducted mainly in southern Andhra Pradesh that included Kadapa, Nellore, Chitoor and Anantapur districts (Bhushan 1994). During this survey confirmed reports of the Jerdon's Courserwere obtained from six places and it was sighted in two out of these six places. These sight records were onlyfrom Kadapa district. It should be noted that except from the places where it has been sighted, reports from other places including confirmed and unconfirmed reports were obtained either from local tribal people or bird trappers. Samant & Elangovan (1997) surveyed in the southern Andhra Pradesh from May 1994 – October 1995 but mainly in and around the LWS. They noted a few more sight records, mainly from in andaround the rediscovery site. There is no record of the Jerdon's Courser from the northern part of the AndhraPradesh since the 19th Century.

Prior to 2000, records of Jerdon's Courser were mainly from sightings during night-time walks. In 2001, a newmethod was developed by Jeganathan et al. for detecting the presence of Jerdon's coursers by deploying tracking strips upon which the birds leave their distinctive footprints, which differ from those of other bird species present in the area. This was established by setting up automatic cameras triggered by birds interrupting an infrared beam, oriented horizontally close to the ground. This allows the identity of birds which left a particular set of tracks to be identified (Jeganathan et al 2002). By extending

the soil strip tracking method, Jerdon's courser was identified in three new places which are far from LWS (Jeganathan 2006).

Call of Jerdon's Courser

By observing a caller bird, its' call was captured on tape by Jeganathan in the year 2002 (Jeganathan & Wotton 2004). When the bird's recorded call was played, especially in the evenings, 45–90 minutes after sunset, the bird would answer. Such prompted replies were used in a survey to determine Jerdon's Courser distribution in new locations. The Jerdon's Courser replied at just three points while tape playback was conducted at 403 places. The original rediscovery site near Reddipalli is within 14 kilometres of all of these locations (Jeganathan 2006).

By playing the digitally altered call of Jerdon's Couser, which was captured by Jeganathan between June 2001 and November 2002, Arvind et al. (2022) were able to identify the Jerdon's Courser. Between October 2019 and March 2020, they played the digital call on a FoxPro Predator speaker in an effort to pick up its reaction and its call-in presence. They recorded the calls at several locations, and the respondent calls were captured within 600 m of each location. They used commercially accessible data to examine the recorded data. They came across the suspicious Jerdon's Courser call, which is mixed in with other mimic calls, at a few points. They came to the conclusion that their effort might be useful in identifying other species in future studies.

Jerdon's Courser's preferred habitat

Most reports of Jerdon's Courser are from scrub jungle habitat. It lives in the gently rolling, rocky foothills of scanty scrub-forest dotted with areas of bare ground (Bhushan 1986). A recent study conducted in and around the Sri Lankamaleswara Wildlife Sanctuary revealed that Jerdon's coursers have a significant affinity for a specific density of scrub jungle habitat. According to Jeganathan et al. (2004), they are most likely to appear when there are less than 1000/ha of smaller shrubs and where there are 300-700 ha or more of huge (>2 m tall) bushes. Additionally, Jerdon's coursers appear to like locations with woody plant species like *Hardwickia binata*, which are typical of mature scrub that has not had significant disturbance like clearing for a very long time (Jeganathan et al. 2004a). Satellite photography could be used to map areas of scrub jungle with brush densities ideal for Jerdon's Courser. Scrub jungle is presently less extensive than is depicted on the map due to conversion of scrub jungle to farms, pastures, and other land cover types (Senapathi et al. 2007).

Fig. 2 Habitat of Jerdon's Courser in Lankamalleswara Wildlife Sanctuary.

Fig.3: Location of Jerdon's Courser, surveyed during July, 2023.

Threats to habitat

According to Birdlife International (2001), quarrying, livestock grazing, and habitat exploitation in scrub jungles are the main threats to the Jerdon's Courser that have been identified so far.

TheTelugu-Ganga canal, which was planned to be constructed across the habitat of Jerdon's courser has been shifted towards east side, which is too far from its existing habitat. A road was constructed recently across its habitat. I have studied all these factors in my recent survey in LWS.

Conclusion and suggestions

The presence of Jerdon's Courser was established by all available evidences. The use of the soil strip tracking technique and more contemporary audio call response techniques helps ornithologists investigate the existence and range of the bird.

Only its distribution has been the subject of research over the past 20 years. Additionally, each researcher was always in a dilemma as to the existence of the bird. However, the preset research has dwelt upon various other factors which are crucial to determine the objectives of the present research.

The harshest weather from March to July, when little rain is seen and temperatures rise above 45^{0}C, has been noted as a barrier to the continued existence of this cursorial bird in its current environment in LWS. Owing to the extreme heat, the environment as a whole lacks water, and the LWS has no water bodies either. Another likely factor limiting their ability to reproduce and develop in number is the presence of egg-eating reptiles like Indian Cobras (*Naja naja*). Like other coursers and lapwings, this nocturnal bird is likely to lay her eggs on bare ground.

One of the main causes of their dispersion may be a lack of food resources. It being a nocturnal and non-predatory bird, it has a difficult time finding insect food in such a hard-soiled, less abundant insect prey habitat. Nurturing and resilient measures to be followed with tenacious determination for the conservation and perpetuation of Jerdon's Courser.

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