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NOTE

FIRST DISTRIBUTIONAL RECORD OF THE LESSER ADJUTANT *LEPTOPTILOS JAVANICUS* HORSFIELD, 1821 (CICONIIFORMES: CICONIIDAE) FROM SINDHULI DISTRICT, NEPAL

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First distributional record of the Lesser Adjutant *Leptoptilos javanicus* Horsfield, 1821 (Ciconiiformes: Ciconiidae) from Sindhuli District, Nepal

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Globally the Lesser Adjutant (LA) *Leptoptilos javanicus* (Horsfield, 1821) is categorized as Vulnerable in the IUCN Red List of Threatened Species and has been recorded from Bangladesh, Bhutan, Brunei, Cambodia, China, India, Indonesia, Laos, Malaysia, Myanmar, Singapore, Sri Lanka, Thailand, and Vietnam (BirdLife International 2020). In Nepal, a few studies on the ecology and behavior of the LA have been conducted by Inskipp & Inskipp (1991), Baral (2004, 2005), Subba et al. (2009), Poudyal & Nepal (2010), Karki & Thapa (2013), Inskipp et al. (2016), Bajagain & Pradhan (2018), Nepal & Thapa (2018) and Sundar et al. (2016, 2019a,b). These studies provide records on LAs from 14 different important birds areas (IBAs) within and outside protected areas (Birdlife International 2020). Yet there is no documented record of this stork from Sindhuli District. With this study, we

have provided a new record of LA from this district which will offer an opportunity for additional exploration and research survey throughout the recorded localities to explain its population in Sindhuli.

We conducted the survey along the Kamala River basin in Dudhauri Municipality and Kamalamai Municipality of central Nepal. Dudhauri Municipality lies between 27.072°N–27.029°N & 86.049°E–86.386 °E covering an area of 390.39km² with a total human population of 65,302 (CBS 2011). Kamalamai Municipality lies between 27.237°N–27.037°N & 85.830°E–86.030°E with an area of 482.57km² and a population of 77,845 (CBS 2011).

A team composed of five members surveyed wooded areas, agricultural fields, and rural villages in Dudhauri and Kamalamai Municipality of Sindhuli

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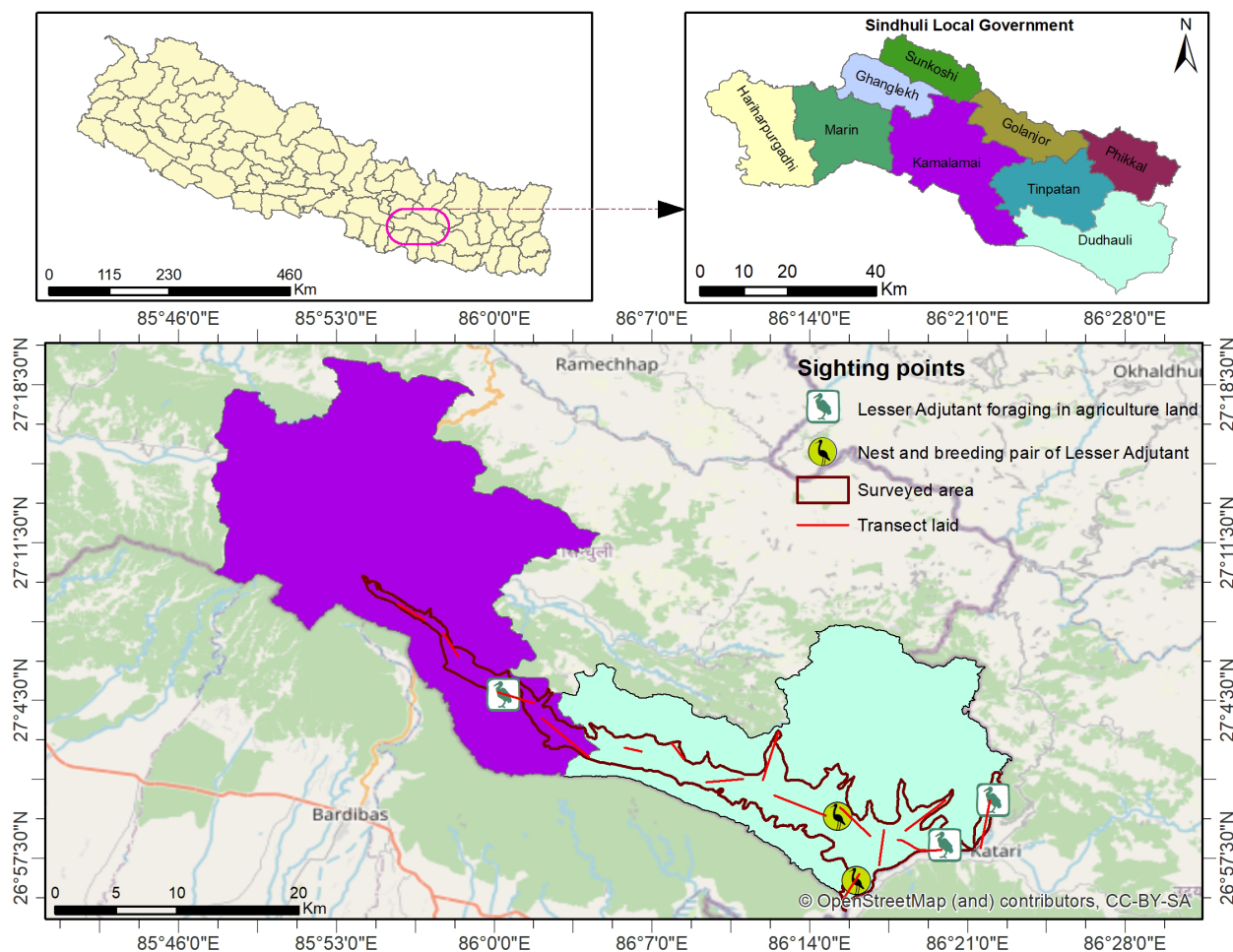


Figure 1. Lesser Adjutant sighting in Sindhuli District

between November 2017 and March 2018. An area of 156.3km² was surveyed for 15 days. A total of 15 transect surveys were done randomly in the Kamala River flood plains. The length of transects varies between 1.63 to 4.3 km depending upon the width of the flood plains. Afterwards, agricultural fields, forested areas and residential areas in the flood plains were searched for LAs. *Acacia catechu*, *Bombax ceiba*, *Dalbergia latifolia*, *Dalbergia sissoo*, *Dendrocalamus strictus*, *Ficus benghalensis*, and *F. religiosa* were the major vegetation in those forested and adjoining areas. Wheat was found to be intercropped with lentil and chickpeas & maize with beans & soya beans in sequential cropping patterns (rice-maize-fallow, rice-fallow-maize, and rice-wheat-fallow) in the survey area of the Kamala River valley of Sindhuli District. Because the species is large and conspicuous, and the colonies are relatively small, individuals foraging on either side of the transect, hovering in the sky and nests with breeding parents were counted and noted. A Canon Powershot SX 50

camera was used to photograph individuals, nests, and the chicks. Co-ordinates of localities were ascertained using a hand-held Garmin eTrex10 GPS.

A total of 12 individual LA storks with chicks on two active nests were recorded from these sites. All sightings with dates, time, altitude, activities, and number are presented in Table 1.

LA had been not previously recorded from Sindhuli District. This work has led to the discovery of an unknown population, a new breeding and foraging location for LA, in Sindhuli District, Bagmati Province, central Nepal. In our study, we counted 12 individual storks with chicks on two active nests in these sites. There is still a chance of double counting which we believe would not create a big impact on our result because two active nests with two breeding pairs confirms the breeding colony in the district. But the observation of chicks could not be considered as a breeding success as we failed to affirm if chicks had been fledged. This study in Sindhuli adds information on its distribution range in the country

Table 1. Records of Lesser Adjutant during November 2017 & March 2018 from Sindhuli District, Nepal.

| Date | Sites/Localities | Altitude | Activities | Number |
|-------------|---|----------|---|-----------------------------------|
| 19.iii.2018 | Kauchhe, Kamalamai Municipality | 330m | Foraging in the agricultural fields. | Three |
| 10.iii.2018 | Helipad region, Dudhauri Municipality | 190m | Nesting on <i>Dalbergia sissoo</i> . | One with its chicks |
| 08.iii.2018 | Tandi, Dudhauri Municipality | 180m | Nesting on <i>Bombax ceiba</i> . | A breeding pair with their chicks |
| 12.i.2018 | Floodplains of Tawa River, Dudhauri Municipality | 180m | Soaring above Tawa River before landing in agricultural fields. | Two |
| 21.xi.2017 | Floodplains of Kakurthakur River, Dudhauri Municipality | 245m | Foraging in the agricultural fields. | Four |



Image 1. Foraging in the agriculture fields in the flood plains of Kakurthakur River, Dudhauri Municipality.

and can be used to draw the attention of the wider conservation community towards effective conservation of this site. Annual monitoring of the population and nest with increased community participation and detailed ecological studies are strongly recommended.

The LAs had their heronries on large tall *Bombax ceiba* and *Dalbergia sissoo* trees amid multi-cropped agricultural fields dominated by cereal while in eastern lowlands they were also found to use Karam *Adina cordifolia* trees (Karki & Thapa 2013), and in Rupandehi and Kapilvastu, on *Bombax ceiba* and *Ficus religiosa* (Sundar et al. 2019b). This report on heronries of LAs compare favorably with the habitats described by Sundar et al. (2019b), which was previously assumed to be avoided for breeding (Sundar et al. 2016, 2019a). Besides, this information on habitat features, this study further highlights the need to study key aspects such as tree-selection for nesting, the factors that allow these

storks to breed in Sindhuli, and factors affecting its breeding success.

The country total estimated population of LAs ranged between 300 and 1000 individuals with major population in the east (Inskipp et al. 2016) and between 200 and 700 (BirdLife International 2020) based on the information gathered over a period of time from different observations. But these estimates failed to take into account new work across Nepal. A total of 27 individuals (19 juvenile individuals from Sai Khola, four from Chanp and four from Saraswati Khola) and 21 nests (18 from Sai Khola and three from Chanp areas) have been recorded at two colonies in Triyuga Watershed, Udayapur in May 2015. Likewise, Bajagain et al. (2019) recorded 24 LA nests with 39 adults to provide information on breeding colonies of the species in Sarlahi District in Nepal.

This present record locations of LAs lie in between Triyuga Watershed, Udayapur in the east and Siraha

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Image 2. A breeding pair of Lesser Adjutant at their nest on *Bombax ceiba* tree at Tandhi, Dudhauri Municipality.

District in the south and hence, shows that either the species has previously been overlooked or that it has extended its range towards Kamala River floodplains in Dudhauri and Kamalamai Municipality of Sindhuli. The confirmed presence of breeding population of this stork from Sindhuli District is important because it connects the LA population of Triyuga Watershed, Udaypur in the east and Siraha in the south reducing information gaps.

Based on sightings of individuals, heronries in small spatial scale over a short period of time, it would be impractical to conclude anything about population status in Sindhuli District. In the meantime, as the distribution range of these heronries are restricted with even more restricted breeding populations, these sightings are adequate to highlight on the need for well-planned long-term research to give better population estimate and

to understand if the population is threatened, and to come up with proper long-term conservation initiatives for species conservation in Sindhuli and all the putative habitats including Siraha and Udaypur districts as well.

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