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Short Communication: First record of Crow-billed Drongo (*Dicrurus annectens* (Hodgson, 1836)) in East Java Province, Indonesia

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Abstract. *Siddiq AM, Kurnianto AS. 2023. Short Communication: First record of Crow-billed Drongo (*Dicrurus annectens *(Hodgson, 1836)) in East Java Province, Indonesia. Intl J Bonorowo Wetlands 13: 73-77.* Crow-billed Drongo (*Dicrurus annectens* (Hodgson, 1836)) is a migratory bird that breeds in the Himalayas and Southern China. It has a range of distributions for migration to Indonesia (Sumatra, Kalimantan, and Java Island). However, on Java Island, this species was only found distributed in West Java. During migration, species *D. annectens* have a stopover habitat in mangrove and coastal forests. This study records *D. annectens* in the mangrove forest of Jatipapak Block, Kucur Resort, Alas Purwo National Park (APNP) on 29 October and 31 October 2020. The species was observed by the using morphology characteristics documentary: the tail is split like a scissor with the ends curved upwards, the body is about 25-30 cm long, has a broad chest, and narrows to the belly direction. In addition, this bird has a thick-sharp bill and a shiny, bluish-black body. The species was observed resting in the crown of the outer side of the mangrove vegetation and then fleeing to other mangrove vegetation (the crown of the outer side). The occurrence of *D. annectens* in the APNP has not previously been reported. Therefore, the encounter of this species in the Jatipapak mangrove forest is the first record in APNP. On the other hand, this report also provides information that *D. annectens* has an extended migration range to the East Java Region.

Keywords: Crow-billed Drongo, East Java, first record

INTRODUCTION

The Crow-billed Drongo (*Dicrurus annectens* (Hodgson, 1836)) is one of the eight Drongo species found in the Greater Sundas, Indonesia (MacKinnon et al. 2010; Eaton et al. 2016; Akbar et al. 2020; Taufiqurrahman et al. 2022). Species *D. annectens* is a migratory bird that breeds in the Himalayas and Southern China, then migrates south to India, Southeast Asia, and the Greater Sundas (Rocamora and Yeatman-Berthelot 2020; Avibase 2023; Birdlife International 2023). The complete migration movement of this species includes spending the non-breeding period in East Bangladesh and adjacent North East India, and from South Myanmar and South Thailand through the Malay Peninsula (mainly on coasts and small islands, rarer inland, uncommon to Singapore) and islands to Sumatra (rare) and Java (occasional in West coastal forest and mangroves) (Rocamora and Yeatman-Berthelot 2020) (Figure 1). Taufiqurrahman et al. (2022) also reported that *D. annectens* in the Greater Sundas is a rare migrant species, and it has only been reported in Sumatra, Kalimantan (especially the western seas), and Java (especially in west Java). So, this species is rarely reported on Java Island and has never been recorded in the East Java Region. However, considering the current environmental conditions that tend to change, whether biotic or abiotic, they could affect species range shifts or expansion (Lenoir et al. 2020; Han et al. 2023). More specifically, Lenoir et al. (2020) revealed that terrestrial species follow the direction of isotherm shifts along elevational gradients but are slower in warm climate areas. In this case, migratory species such as *D. annectens* may also expand geographically.

Like other Drongo species, *D. annectens* is an insectivore (Rocamora and Yeatman-Berthelot 2020). This species often occupies and forages in open habitats, particularly coastal forest areas (Eaton et al. 2016; Taufiqurrahman et al. 2022). The records on *D. annectens* in Indonesia, especially in Java, are minimal (Taufiqurrahman et al. 2022). Therefore, there is only some information about this species' ecology (MacKinnon et al. 2010; Eaton et al. 2016; Taufiqurrahman et al. 2022). In the East Java Region, several forest areas have databases related to the occurrence of Drongo species, such as Alas Purwo National Park with 4 species, i.e., Black Drongo (*Dicrurus macrocercus* Vieillot, 1817), Ashy Drongo (*Dicrurus leucophaeus* Vieillot, 1817), Hair-crested Drongo (*Dicrurus hottentottus* (Linnaeus, 1766)), and Greater Racquet-tailed Drongo (*Dicrurus paradiseus* (Linnaeus, 1766)) (Grantham 2000), Baluran National Park with 4 species, i.e., Black Drongo, Hair-crested Drongo, Greater Racket-tailed Drongo, and Ashy Drongo (Winnasis et al. 2011), Meru Betiri National Park with 2 species, i.e., Ashy Drongo and Greater Racquet-tailed Drongo (Kurnianto et al. 2014), Ijen Highland with 2 species, i.e., Ashy Drongo and Greater Racquet-tailed Drongo

(Mittermeier et al. 2014; Siddiq et al. 2023), Bromo Tengger Semeru National Park with 4 species, i.e., Black Drongo, Ashy Drongo, Lesser Racket-tailed Drongo (*Dicrurus remifer* (Temminck, 1823)), and Greater Racquet-tailed Drongo (Prasetya and Siswoyo 2017; Avibase 2023), and *Erek-Erek* Geoforest of Ijen Geopark with 3 species, i.e., Ashy Drongo, Lesser Racket-tailed Drongo, and Greater Racquet-tailed Drongo (Siddiq et al. 2023). Based on these reports, there are 5 Drongo species in the East Java Region: Black Drongo, Ashy Drongo, Hair-crested Drongo, Greater Racquet-tailed Drongo, and Lesser Racket-tailed Drongo. Therefore, the scientific reports of Crow-billed Drongo in this region have not been reported. Several hypotheses related to species range expansion may occur for this species, such as the shift of migrant habitat to the eastern tip of Java Island.

The current exploration of the distribution range of the Crow-billed Drongo in the East Java Region is important. Several potential areas in the East Java Region are used as stopover habitats for this species during migration. Therefore, exploring the new occurrence of *D. annectens* in potential areas in the East Java Region, which may also be a new distribution range along the migration period, is necessary. This paper describes the first Crow-billed Drongo (*D. annectens*) record in the East Java Region, specifically at Alas Purwo National Park (APNP). This National Park is a conservation area located at the eastern tip of Java Island, with a total area of around 43,420 ha. Generally, the forest types of APNP are lowland rainforests, such as coastal forests, mangrove forests, bamboo forests, and tropical lowland forests (Ariyanto et al. 2011). These conditions provide habitat for many bird species. Grantham (2000) reported 227 bird species (with an additional 11 'possible' species) in APNP during observation periods from May 1997 until September 1999. Another report shows that around 285 bird species were reported in APNP (Widodo 2009; Ariyanto et al. 2011). Based on previous reports, a species of Crow-billed Drongo has never been reported in APNP. These studies will add new information on bird species richness in APNP. More specifically, it becomes essential information related to the new expansion of the Crow-billed Drongo on Java Island.

MATERIALS AND METHODS

The study site is located in the mangrove forest of Jatipapak Block, Kucur Resort, APNP (8°32'24.25"S and 114°22'19.28" E), East Java, Indonesia (Figure 2). Administratively, APNP is located in Banyuwangi District, East Java, Indonesia. This conservation area has five management zones, i.e., Core Zone (17,150 ha), Buffer Zone (24,207 ha), Rehabilitation Zone (620 ha), Utilization Zone (660 ha), and Traditional Zone (783 ha). Meanwhile, geographically, APNP is located at the eastern tip of Java Island and directly borders the Indian Ocean, the Bali Strait, and Pangpang Bay. Therefore, this area has a vast coastal ecosystem within the mangrove ecosystem. Ariyanto (2011) revealed that there are around 26 types of mangroves in APNP, and *Rhizophora apiculata* Blume, *Rhizophora mucronata* Lam., *Bruguiera gymnorhyza* (L.) Lam., *Avicennia marina* (Forssk.) Vierh., *Cordia bantamensis* Blume, *Xylocarpun granatum* J.Koenig, *Heritiera littolaris* Dryand. ex Aiton, *Sonneratia alba* Sm., and *Sonneratia caseolaris* (L.) Engl. mostly dominate them.

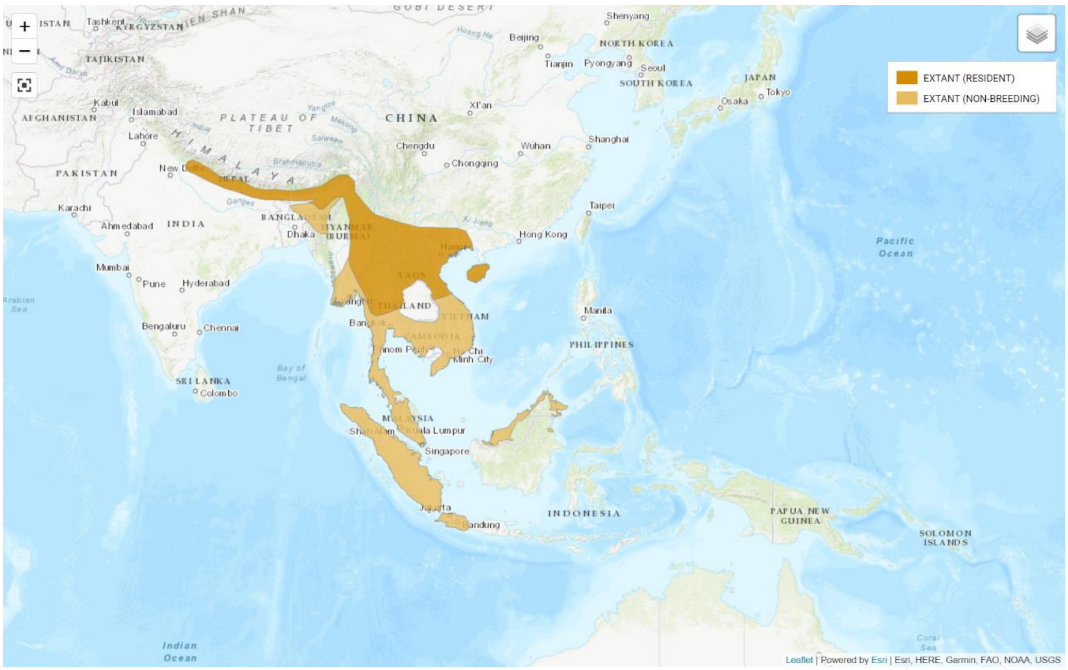

Figure 1. The geographic range of Crow-billed Drongo (Birdlife International 2017)

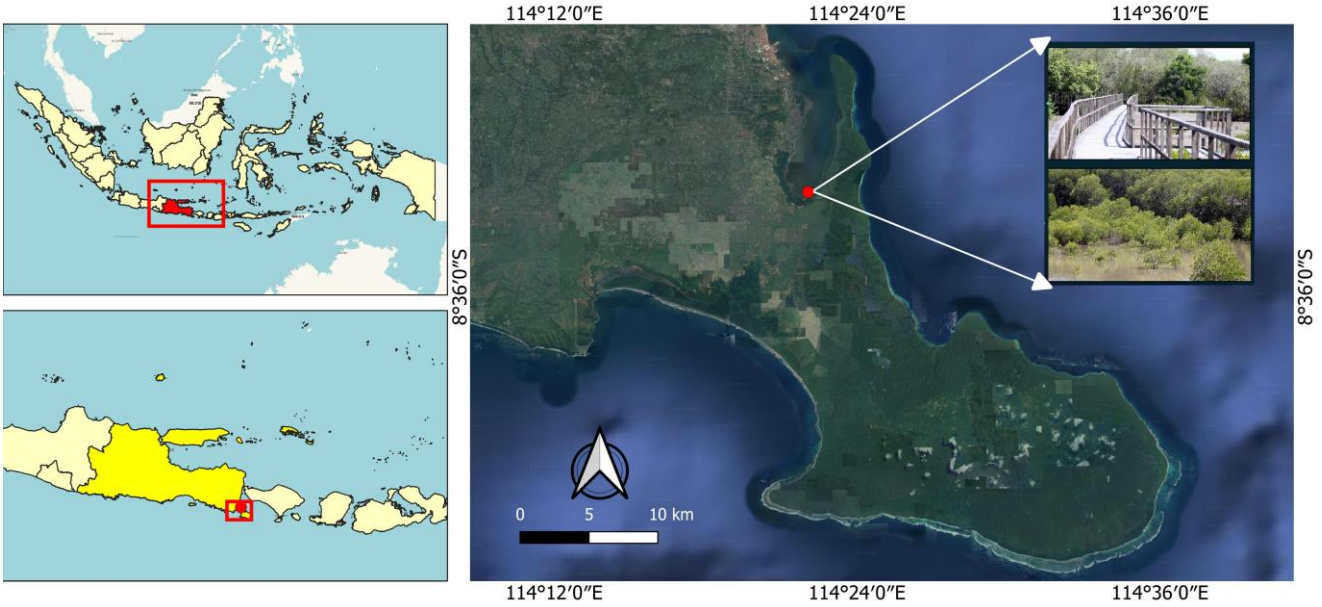

Figure 2. Mangrove forests at Jatipapak Block, Resort of Kucur, APNP, and its position on Java Island, Indonesia

The coastal area in APNP is circular from Cungur, Plengkung, Tanjung Purwo, Tanjung Pasir, Teluk Banyu Biru, Perpat, Klosot, Bringinan, Kayu Aking, Tanjung Sembulungan, and Kucur (Jatipapak Block) (Ariyanto et al. 2011; Tisnawati et al. 2012). Jatipapak block has a mangrove ecosystem with *R. apiculata*, *R. mucronate*, *S. alba*, and *S. caseolaris* species. This block is located on the northern side of APNP and borders the Pangpang Bay area. Data were recorded on 29 October and 31 October 2020 during data collection for research on the valuation of mangrove forests at Jatipapak Block, Kucur Resort, APNP. The author (Arif Mohammad Siddiq: AMS) conducted these observations at the edge of the mangrove ecosystem bordering the coastal forest. The weather was sunny, making it easy to observe bird morphology. Bird observation was done using a Nikon Aculon A211 16x50 binoculars, a Canon EOS 60D, a telephoto lens 75–300mm, and stationary notes. These observations were conducted at 06.00-09.00 AM along the mangrove trails. Observation of morphological characteristics is used for identification, including body size, overall body color, forehead color, chest and belly color, back and rump color, tail shape and length, beak shape, bill color, bill size, and other important characteristics. The identification and verification of species use the guideline book "Birds in Sumatra, Java, Bali, and Kalimantan" by MacKinnon et al. (2010) and Guideline Book of Birds in Sunda Besar (Sumatra, Java, Kalimantan, and Bali) (Taufiqurrahman et al. 2022).

RESULTS AND DISCUSSION

AMS recorded a single individual of Crow-billed Drongo in the mangrove forest of Jatipapak APNP. This species was perched on the crown of a tree around the coastal forest bordering the mangrove (Figure 3). With a Nikon Aculon A211 16x50 binocular, AMS immediately recognized it as a Drongo because of its distinctive morphology: the tail is split like a scissor with the ends curved upwards, the body is about 25-30 cm long, with a broad chest, and narrows to belly direction. However, this bird has a thick-sharp bill and a shiny, bluish-black body. These characteristics distinguish it markedly from the sister species, Black Drongo (*D. macrocercus*), which is also recorded at that location (see Figure 3 for more comparison). This description aligns with MacKinnon et al. (2010) and Ebird (2023), where the Crow-billed Drongo is distinguished from the Black Drongo by its larger body size, dark-shiny color, and thick bill. There were no vocal records during the observation. Considering that it is an aggressive bird, it will potentially affect the foraging behavior of native species, particularly Black Drongo. However, further research is needed to prove these allegations. On the other hand, Ashy Drongo and Lesser Racquet-tailed Drongo in Gunung Gede-Pangrango National Park were observed in mixed flocks with other bird insectivores. Even though this case is quite rare, more of these two species form separate flocks (Putra et al. 2020).

The species was observed resting for 5-7 minutes and then flew to the inner mangrove vegetation. Furthermore, on 31 October 2020, AMS again recorded a single individual Crow-billed Drongo perched in the crown of the outer side of the mangrove vegetation (Figure 3). The species was observed resting for 3-4 minutes and then flew to other mangrove vegetation (crown of the outer side). This is thought to be due to catching prey (it is unclear which prey was caught). This species tends to catch insects for feed (including ants: Formicidae and termites: Isoptera) (Eaton et al. 2016; Rocamora and Yeatman-Berthelot 2020). This species still hunts from shaded perch, capturing prey at ground level in open areas, clearings, and forest paths.

Furthermore, Crow-billed Drongo takes aerial insects by sallying from hidden perch or, less often, by more prolonged hawking (Rocamora and Yeatman-Berthelot 2020). It is a territorial and aggressive bird, especially during the breeding season, frequently mobbing raptors or corvids with all its might (Ebird 2023). AMS documents these birds with a Canon EOS 60D and telephoto lens of 75-300 mm at each observation.

The existence of a Crow-billed Drongo in the APNP has not previously been reported. Therefore, the encounter of Crow-billed Drongo in the Jatipapak mangrove forest is the first record in APNP. Grantham (2000) only discovered four Drongo species, i.e., Black Drongo (a common category in APNP), Ashy Drongo (a rare category in APNP), Hair-crested Drongo (an uncommon category in APNP), and Greater Racquet-tailed Drongo (a common category in APNP). Moreover, Widodo (2009) reported that 4 species of Drongo were found in each habitat type in APNP, such as natural forest (1 species: Greater-racquet Drongo), teak forest (4 species: Black Drongo, Ashy Drongo, Hair-crested Drongo, and Greater Racquet-tailed Drongo), coastal forest (2 species: Black Drongo and Greater Racquet-tailed Drongo), artificial savannah (1 species: Black Drongo). While, Widodo (2016) did not rediscover 2 species, i.e., Ashy Drongo and Hair-crested Drongo. It is possibly due to a movement of both species to the northern part of the national park (Sembulungan and its surroundings). This means that the distribution of Drongo species in APNP is still unclear, so comprehensive research is needed for each species.

On the other hand, this report also provides information that *D. annectens* has an extended migration range to the East Java Region. Akbar et al. (2020) and Taufiqurrahman et al. (2022) reported that this species had restricted distribution in the West Java Region, especially in mangrove and coastal forests. This species was also reported on Sumatra, Java, and North Kalimantan from September to November (during their migration periods), and it was found to inhabit coastal and mangrove forests (Eaton et al. 2016; Taufiqurrahman et al. 2022). Therefore, compared with these results, *D. annectens* prefers coastal and mangrove forests during the migration season. Recently, information regarding the *D. annectens* population has been limited. Based on The International Union for Conservation of Nature (IUCN) Red List of Threatened Species, *D. annectens* has the least concern status. Information regarding threats from this species has also never been reported before. However, wetland areas, particularly mangrove and coastal forests, tend to change over time, possibly impacting this species ecologically, especially on Java Island.

The condition of Java Island, where anthropogenic activities have fragmented, is one of the challenges and threats facing the bird species. According to the Ministry of Forestry data, forest loss between 2000 and 2005 in Java was about 800,000 hectares (Prasetyo et al. 2009). This is due to the sharp increase in human population growth, and the population on this island is more than 60% of the total population of Indonesia (Prasetyo et al. 2009; Tsujino et al. 2016). In the period 2005-2020, there is likely to be increased forest degradation (Tsujino et al. 2016).

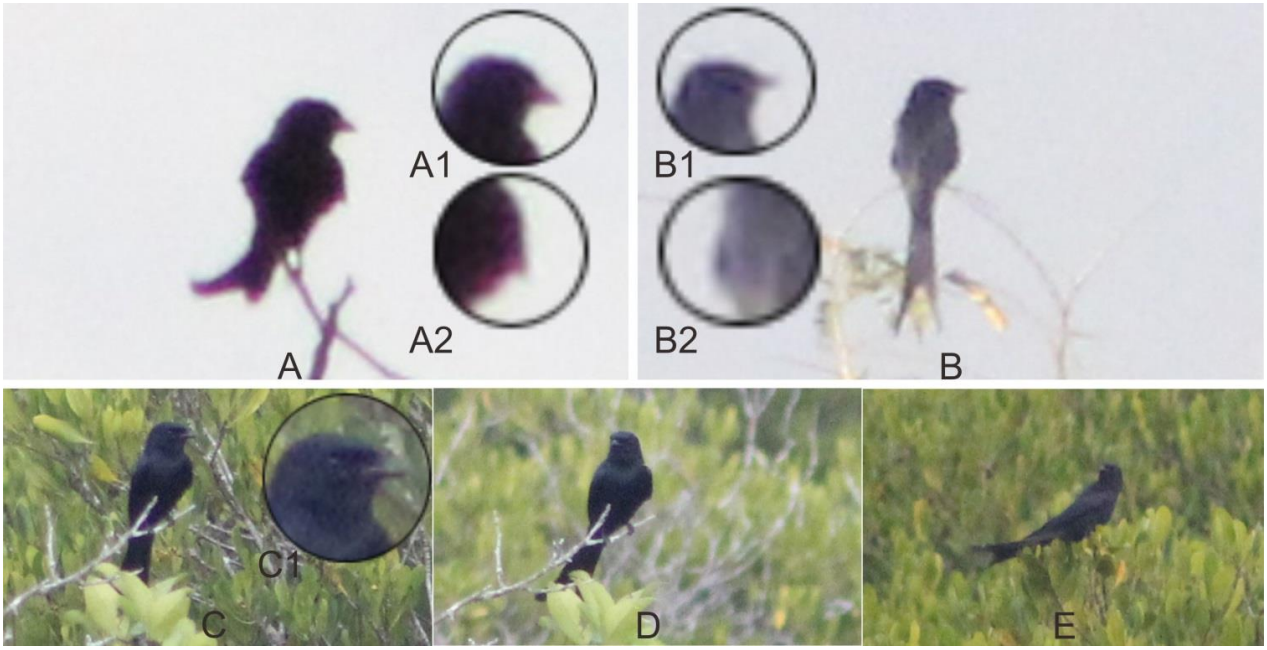

Figure 3. Single individuals of A. Crow-billed Drongo and B. Black Drongo were recorded on 29 October 2020, with the comparison of A1. and B1. heads and A2. and B2. body colors, and C-E. A Crow-billed Drongo was recorded on 31 October 2020 with the insert of the head (C1)

With the remaining forest, it becomes an essential corridor for bird species. Species *D. annectens*, which prefers habitats near the coast, are thought to have chosen coastal forest and mangrove forest areas as migration

routes. Environmental changes, especially in coastal ecosystems, could be potential drivers of the range expansion of this species. Thus, the distribution dynamics of this species will be interesting to study. Furthermore, the existence of conservation areas on Java Island is also a critical stopover habitat for this species. Apart from that, non-conservation area forests are also an important part of the corridor for the movement of this species.

Finally, based on this short report, there is expected to be further research going forward for data collection or monitoring of this species in APNP, especially in coastal areas of Sembulungan, Payaman, Perpat, Segoro Anak, and Bedul. Several locations have similar characteristics of habitat type as Jatipapak, with coastal and mangrove forests inside; its characteristics are the preferred habitat of the Crow-billed Drongo. Observations can be made periodically or every month, especially during the migration season (September-November). A study of this species' local distribution, habitat characteristics, population, and behavior is also significant for research. Bilal et al. (2020) conducted a feeding ecology, behavior, and habitat utilization of black Drongo in Pothwar Plateau, Pakistan. Similar research can also be carried out at APNP with Drongo species as the objects, particularly Crow-billed Drongo. So, it is supposed that the ecological information related to this species will be more comprehensive in APNP.

The conclusion is a Crow-billed Drongo species found in the Jatipapak APNP mangrove ecosystem, the first record in this National Park and East Java. This species is thought to have expanded to the eastern part of Java Island during the migration periods. Furthermore, this record also updates the list of bird species in APNP, especially for migratory birds that use this area as a stopover site.

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