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First Breeding Record of Red-wattled Lapwing *Vanellus indicus* (Charadriiformes: Charadriidae) in Indonesia

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Abstract
Indonesia contains extensive tropical wetland ecosystems that provide important habitats for resident and migratory waterbirds within the East Asian Australasian Flyway. However, breeding documentation for several shorebird species in the Indonesian archipelago remains limited. Here we document the first confirmed breeding record of *Vanellus indicus* in Indonesia based on field observations conducted on 18 January 2026 in Pinang Kencana Subdistrict, Tanjungpinang Timur District, Bintan Island, Riau Islands Province. Evidence of breeding was established through the observation of a downy chick accompanied by adult birds exhibiting territorial defense and distraction behavior. A follow up visit on 21 February 2026 confirmed the presence of adult birds and a juvenile, indicating successful breeding at the site. This record expands current knowledge of the species' distribution and breeding status, and suggests that Indonesian lowland wetlands may support newly established breeding populations of adaptable shorebird species.

Keywords: breeding record; range expansion; Riau Islands; Sumatra; *Vanellus indicus atronuchalis*.

Introduction

Indonesia contains one of the largest and most diverse wetland systems in the tropics, encompassing coastal mudflats, estuaries, mangrove forests, river deltas, freshwater swamps, peatlands, lakes, reservoirs, and extensive agricultural wetlands such as rice fields and aquaculture ponds (Wibowo & Suyatno 1998; Birdlife International 2026). These habitats support high ecological productivity and provide crucial ecosystem services, while also functioning as important feeding, roosting, and breeding grounds for numerous wetland-dependent birds (Tomascik *et al.* 1997; Howes *et al.* 2003). Owing to its strategic position between the Asian continent and Australia, Indonesia also lies within a major migratory corridor and forms an essential component of the East Asian–Australasian Flyway (Yong *et al.* 2018; Iqbal *et al.* 2018, 2021; Mundkur & Langendoen 2022).

Wetlands across the Indonesian archipelago host a rich assemblage of waterbirds, including herons, egrets, bitterns, storks, ibises, rails, jacanas, ducks, and a wide variety of shorebirds (Iqbal *et al.* 2020, 2022; Crossland *et al.* 2025). In particular, shorebirds (Charadriiformes) represent a prominent functional group in coastal ecosystems, where intertidal flats and shallow wetlands provide abundant benthic prey and safe roosting areas (Putra *et al.* 2018; Rozirwan *et al.* 2022). These habitats support both resident and migratory species, many of which depend on Indonesian wetlands as stopover or non-breeding grounds during seasonal movements (Iqbal 2010; Iqbal *et al.* 2010, 2021). Ecologically, shorebirds play key roles as predators of benthic invertebrates, helping regulate prey populations and contributing to nutrient cycling and energy transfer within intertidal systems (Piersma *et al.* 1993; Van de Kam *et al.* 2004; Mathot *et al.* 2019).

The Red-wattled Lapwing *Vanellus indicus* is a widespread shorebird in South Asia and parts of mainland Southeast Asia, typically occupying open lowland habitats such as riverbanks, wet grasslands, floodplains, agricultural landscapes, and anthropogenic wetlands (Sonobe & S. Usui 1993; Piersma & Wiersma 1996). Despite its broad distribution regionally, *V. indicus* has not been widely

recognized as a breeding species in the Indonesian archipelago (MacKinnon & Phillipps 1993; Goenarto *et al.* 2021). In this paper, we report the first confirmed breeding record of *V. indicus* in Indonesia, supported by direct field observations and documentation of breeding evidence, thereby providing new information on the species' breeding status and potential establishment within Indonesian wetlands.

Methods

Field observations were conducted on 18 January 2026 and 21 February 2026 in Pinang Kencana Subdistrict, Tanjungpinang Timur District, Riau Islands Province, Indonesia. The study area consists primarily of lowland wetland habitats, including the edge of a small river bordered by open areas. The surrounding landscape is largely dominated by agricultural land use, forming a mosaic of cultivated fields and wetland patches (Fig. 1). The observation point was located at approximately 0°56′ N, 104°31′ E, with an elevation of less than 10 m above sea level.



Figure 1. Habitat of the Red-wattled Lapwing *Vanellus indicus* where a downy young was observed and documented in Bintan Island, Riau Islands Province, Sumatra, Indonesia. (Photograph: Abdul Hakim Syah).

Evidence of breeding activity was inferred from the presence of a downy young accompanied by adult birds exhibiting territorial defense and distraction behavior, which are typical responses when adults attempt to protect nests or young from perceived threats (Figs. 2–3). These behaviors included alarm calls, close circling, and diversionary movements directed toward the observer. The site was revisited on 21 February 2026, during which the continued presence of adult and juvenile *V. indicus* was documented (Fig. 4), further supporting evidence of successful breeding at the site.

Birds were observed and documented using digital cameras equipped with high-magnification zoom lenses (a Nikon D7200 DSLR paired with a Tamron G2 150–600 mm lens and a Canon DSLR [model unspecified] paired with a Canon 70–200 mm lens), allowing detailed photographic records for subsequent verification. Species identification and further analysis were carried out using several authoritative shorebird and regional bird field guides, including Hayman *et al.* (1986), Sonobe & Usui (1993), Chandler (2009), Eaton *et al.* (2021), and Taufiqurrahman *et al.* (2022).

Results and Discussion

Identification of *V. indicus* was determined based on diagnostic morphological characteristics observed directly in the field and confirmed through photographic documentation. Adult individuals were distinguished by a predominantly black head and breast, white ear-coverts, red facial skin with a black-tipped bill, cold sandy greyish-brown upperparts, whitish underparts, and long yellow legs. Species identification was verified using several standard ornithological field references, including Hayman *et al.* (1986), Sonobe & Usui (1993), Chandler (2009), Eaton *et al.* (2021), and Taufiqurrahman *et al.* (2022). The observed morphological features were fully consistent with the descriptions provided in these references, confirming the identification of the species.

Taxonomically, *V. indicus* is represented by several geographically structured subspecies across South and Southeast Asia, and subspecific identity is relevant when interpreting the biogeographic meaning of new breeding records in peripheral areas such as Indonesia. In particular, the subspecies *V. i. atronuchalis* has been reported from parts of mainland Southeast Asia. This subspecies is darker than western forms, with white on the side of the neck restricted to an isolated patch, and a narrow white hind-collar behind the back of the neck (Wells 1999). Although subspecies identification was not the primary objective of this study, the Indonesian record raises an important question regarding whether the breeding individuals represent a southward extension of *atronuchalis* (or another regional subspecies) from nearby source populations. Goenarto *et al.* (2021) was reported that subspecies of *V. indicus* in Indonesia is *V. i. atronuchalis.* This is significant because confirmation of subspecies could help clarify whether the observed breeding reflects recent colonization from Southeast Asia, long-distance dispersal, or a previously undetected local population. Future work should therefore incorporate detailed photographic documentation of diagnostic plumage traits (e.g., extent of black on the nape region, head pattern, and overall contrast) and, if feasible, genetic barcoding to resolve subspecific status. Such integrative taxonomic approaches would strengthen interpretations of range dynamics and connectivity of *V. indicus* populations in the Sunda region.

Confirmed breeding evidence of *V. indicus* on Bintan Island was obtained with the observation of a downy young, followed later by the presence of a juvenile (Fig. 3). The features of downy young is consistent of description of *V. indicus* described by (Cramp & Simmons 1983; Wells 1999). This finding represents the first documented breeding record of the species in Indonesia. Breeding of *V. indicus* has previously been reported from several areas in Southeast Asia, including Peninsular Malaysia and Singapore (Robson 2008; Seng 2009; Puan *et al.* 2020).



Figure 2. A downy young of Red-wattled Lapwing *Vanellus indicus* documented on 18 January 2026 in Bintan Island, Riau Islands Province, Sumatra, Indonesia (Photograph: Abdul Hakim Syah).



Figure 3. Two adult (presumably a parent pair) Red-wattled Lapwings *Vanellus indicus* were observed on 18 January 2026 on Bintan Island, Riau Islands Province, Sumatra, Indonesia (Photograph: Abdul Hakim Syah).



Figure 4. A juvenile of Red-wattled Lapwing *Vanellus indicus* found on 21 February 2026 on Bintan Island, Riau Islands Province, Sumatra, Indonesia (Photograph: Yuli Seperi).

Indonesia's wetlands are important habitats for waterbirds and shorebirds, supporting both resident species and migrants of the East Asian Australasian Flyway (Hermawan *et al.* 2013; Iqbal *et al.* 2013). Nevertheless, breeding documentation for several shorebirds remains limited, particularly for taxa that are uncommon or newly recorded in the Indonesian archipelago (Abdillah *et al.* 2012). The confirmed breeding evidence reported in this study provides new information on the status of *V. indicus* and indicates that suitable ecological conditions for reproduction occur in Indonesian lowland wetlands. Overall, the breeding record of *V. indicus* documented in this study expands knowledge on Indonesian wetland birds and suggests that Indonesian lowland wetlands may support not only migratory shorebirds but also new resident breeding populations of adaptable species. Additional targeted surveys in similar habitats across Riau Islands are recommended to determine the extent of occurrence and breeding distribution of *V. indicus* in Indonesia.

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