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Cover: Mauve Stinger *Pelagia noctiluca* by Swaathi Na. Medium used is soft pastels and gelly roll.



Additional breeding records of Hanuman Plover *Charadrius seebohmi* E. Hartert & A.C. Jackson, 1915 (Aves: Charadriiformes: Charadriidae) from southeastern coast of India

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Abstract: The recent re-evaluation of the systematic status of the Kentish Plover subspecies *Charadrius alexandrinus seebohmi* to a new taxon, Hanuman Plover *Charadrius seebohmi*, highlighted the gaps in the research on shorebirds in the Central Asian Flyway. We are presenting four new breeding records of Hanuman Plover; three from the Gulf of Mannar and one from Point Calimere. These sites are the nearest south-eastern Indian sites to the Mannar region of Sri Lanka. Hence the need for Hanuman Plover's description as a regional endemic with conservation prioritization, making it a flagship species in CAF in Sri Lanka and southern India.

Keywords: Flagship species, Gulf of Mannar, plover, Point Calimere, shorebirds.

Hanuman Plover *Charadrius seebohmi* is the latest addition to the global avian species list. It is a resident shorebird found across the southern tip of India and Sri Lanka. The recent re-evaluation of the systematic status of Kentish Plover sub species *Charadrius alexandrinus seebohmi* based on the phenotype and genetic distinctiveness from migrants *C. alexandrinus* and *C. dealbatus*, the sub species *C. a. seebohmi* was elevated to species level with English name Hanuman Plover

(Niroshan et al. 2023). The Kentish Plover being a widely distributed species have breeding populations across America, Europe, Asia, and African continents (del Hoyo et al. 1996; Wetlands International 2006; Meininger et al 2009; Vincze et al 2013). It is abundant across the Indian subcontinent (Sangha 2021). The Kentish Plover *Charadrius alexandrinus* is a diverse species complex, comprising of four currently recognized taxa: *C. a. alexandrinus*, *C. a. nivosus*, *C. a. dealbatus*, and *C. a. seebohmi*, separated geographically with some subtle morphological and plumage differences (del Hoyo et al. 1996, Kennerley et al. 2008, del Hoyo et al. 2021). Recent evaluation of the taxonomic status of the Snowy Plover *C. a. nivosus* (Küpper et al. 2009) and the Whitefaced Plover *C. a. dealbatus* (Rhindt et al. 2011, Sadanandan et al. 2019) endorsed that these taxa be elevated to species based on their genetic and phenotypic distinctiveness; which has now been adopted (del Hoyo et al. 2021; Gill et al. 2021).

As this sub species of Kentish Plover is updated as a new species, we review the literature based on the old

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findings. Ali & Ripley (1983) reported *C. a. alexandrinus* breeding from western Pakistan, Gujarat, and northern Indian regions in the Indian subcontinent. Apart from Sri Lanka, Hanuman Plover also breeds in some areas of southeastern coasts and a few areas on the western coasts of India. Breeding evidences of a small population of this species which was considered as a Kentish Plover subspecies, earlier, in peninsular India are mostly from wetlands of southern India and Maharashtra (Krebs 1956; Melluish 1966; Ali & Ripley 1983; Futehally 2006). On the east coast, the breeding sites reviewed from the literature are from Cuddalore (Krebs 1956; Ali & Ripley 1983), Chengalpattu-Chennai, and Point Calimere (Melluish 1966; Futehally 2006) of Tamil Nadu. In Pulicat and Chilika lakes, the subspecies level of identification was not done for the breeding birds (Sangha 2021). On the western side of India, the breeding reports were from Upper Wardha Dam at Vidarbha, Maharashtra (Kasambe 2007; Kasambe & Wadatkar 2007) and Vani Vilasa Sagara of Karnataka (Rao et al. 2018). Rasmussen & Anderton (2005) stated that the northern distribution limit of *C. a. seebohmi* is unknown, and Kentish Plovers recorded in the south are likely to be *C. a. seebohmi*.

Considering the new taxonomy re-evaluation, we can consider these as Hanuman Plovers.

During our shorebird monitoring programme on the southeastern coast of India from 2017 to 2022, we documented four breeding accounts of Hanuman Plover from Tamil Nadu. Our breeding records are given site wise: Site1 was Pillaimadam (9.2824°N , 79.1087°E) (Figure 1) abutting Palk Bay, adjacent to the Rameswaram Island, is a saltwater lagoon and is bridged by a bar mouth to Palk Bay in the north. The lagoon is bounded by grassy areas on the landward side. Shorebirds, large wading birds, gulls, and terns are seen regularly. Site2 was Dhanushkodi (9.19858°N , 79.3833°E) (Figure 1) in the Rameswaram Island on the Gulf of Mannar (GoM) region is a lagoon with both mudflats and sandy areas. This is one of the best bird congregation sites during the coastal bird's migratory season in the GoM region. The intermittent pools and the grass like patches on the fringes serve as breeding grounds for ground-nesting birds like larks. Site3 was Valinokkam (9.1618°N , 78.6284°E) (Figure 1) is an area with salt pans and prawn cultures. The excess water from these is pumped out and thus a man-made lagoon formed with mudflats. Gulls, terns, shorebirds,

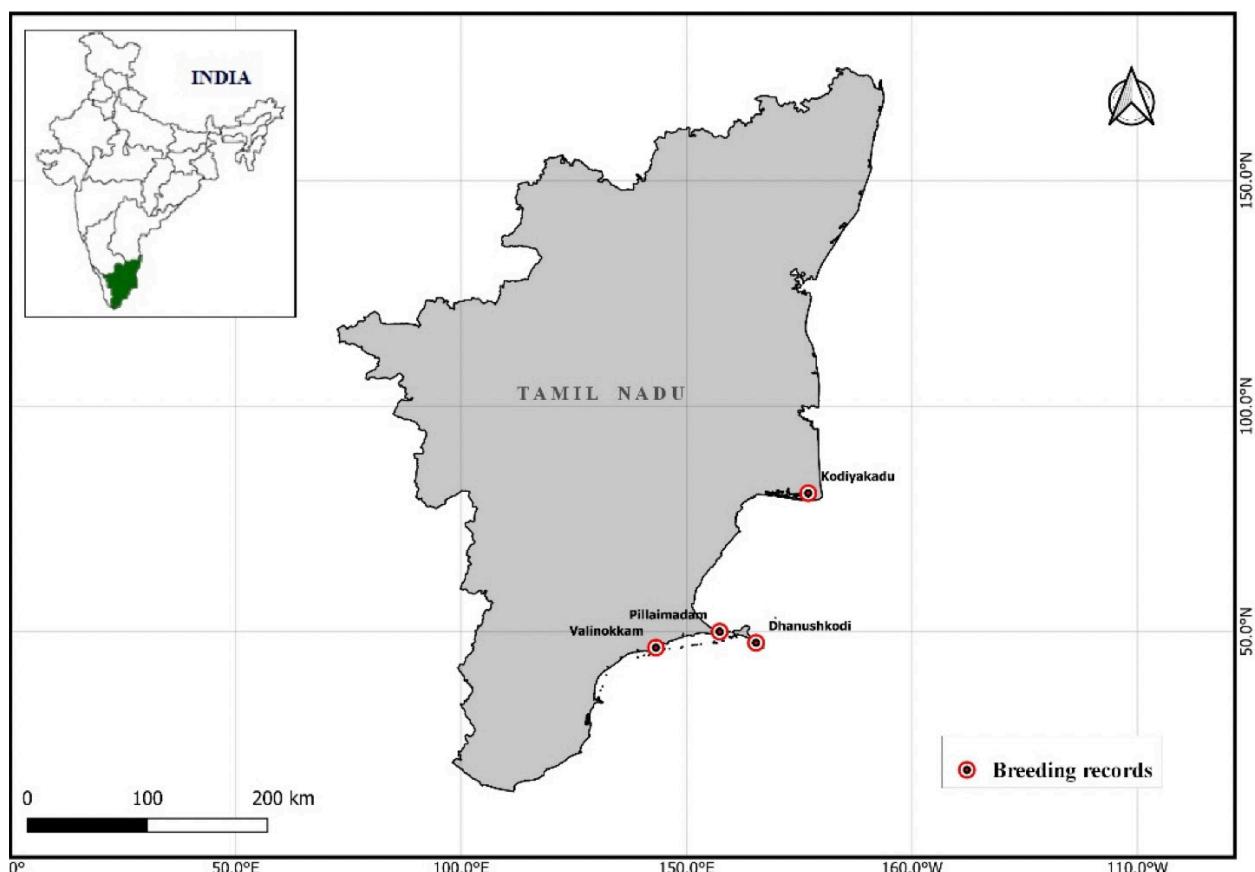


Figure 1. Additional breeding records of *Charadrius seebohmi* from southeastern India.

and large wading birds aggregate in good numbers here. We have observed that the presence of grassy streaks bordering the lagoon leads to some ground-nesting birds like larks breeding here regularly. Site4 was Kodiyakadu (10.3270°N , 79.7768°E) near Great Vedaranyam swamp (Figure 1) is bounded by grass patches with sand beds also supports shorebirds and large wading birds.

This species nests generally from February to July along the coasts and dried mudflats; between April and July at GoM (Balachandran 1995). Our present studies also registered the breeding from February itself. The breeding records from each site with details are as follows. In Site1, we documented the adults and two chicks on 15 June 2022 (Image 1). In Sites2 & 3, we spotted the nest with three eggs in the clutch (Image 2) and adult birds' incubating (Image 3) on 24 March 2017. This was confirmed after the parent bird had reached the nest with eggs and started incubating. In Site 4, we surveyed the chick and the adult on 28 February 2020. Hanuman Plover and *C. alexandrinus* can be differentiated in the field during breeding plumage by the identification pointers like the latter being slightly larger and having a rufous tinge on the crown (Hayman et al. 2011). During the breeding season, Hanuman Plover lacks the black fore-crow, which becomes darker in breeding plumage, and eye-stripe compared to Kentish Plover nominate race that arrives at GoM by September and departs by mid-March (Balachandran 1995). *C. seebohmi* also has dark grey legs in both sexes, while *C. alexandrinus* have black legs. Although it is challenging to differentiate the Kentish Plover nominate race from Hanuman Plover during the winter, we were able to characterize it from the nominate race because we recorded incubating adults, eggs, as well as adults with weeks old chicks.

Kentish plovers are ground-nesting birds (Amat & Masero 2004), often with a preference for low, open, moist nesting sites away from thick vegetation and human activity. The nests of Hanuman Plovers we observed were shallow scrapes, partially filled with pebbles, small snail shells, pieces of dry mud, and vegetation near the grass patches on the shores. In Sites1, 2 & 4, the nests were seen in areas that formed as small water pools near the lagoons / main water body. It was very difficult to identify until we patiently watched them in pairs for rather some time and in breeding plumage near the nests. Also, with chicks, the adults were seen patrolling the new-born ones.

The breeding system of Kentish plovers is unusually diverse (Székely et al. 2006). Both parents incubate the eggs, but after the eggs hatch, one parent (usually the



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Image 1. Adult of *Charadrius seebohmi* with two chicks at Pillaimadam.



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Image 2. Clutches with three eggs of *Charadrius seebohmi* on the nest at Valinokkam.



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Image 3. Adult *Charadrius seebohmi* in incubation at Valinokkam.

female) may abandon the family to find a new mate, resulting in monogamy, polygyny, and polyandry within a single population (Lessells 1984; Kosztolányi & Székely 2002; Székely et al. 2006). Even though our investigation was not designed primarily to examine nest attendance, casual observations of nests of Hanuman Plover



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Image 4. Adult *Charadrius seebohmi* with single chick at Kodiyakadu.

revealed that the pairs followed a consistent schedule of nest attendance. We also observed that the chicks when hatched were mostly attended to and escorted by both parents up to the second week of hatching.

The new breeding records of Hanuman Plovers from distinct locations along Tamil Nadu on India's southeastern coast, spanning hundreds of kilometres, should lead to the need of conservation of these sites as an important step for habitat protection. This could reiterate the need to protect the breeding habitats that are in non-protected areas. As mentioned earlier, these areas also accommodate many waterbirds including Near Threatened long distant migratory species such as Bar tailed Godwit *Limosa lapponica*, Black tailed Godwit *Limosa limosa*, Red Knot *Calidris canutus*, etc and Endangered species like Great Knot *Calidris tenuirostris*. Habitat destruction and the ever-increasing need for economic development are major challenges for the survival of this species just like any other wild species. Other conservation threats we perceived in all the sites is the presence of stray dogs chasing shorebirds. In Sites 1 & 2, children used to pick up eggs of ground nesting birds in general out of ignorance and for fun which must be overcome by creating awareness in the breeding areas. Moreover, these breeding plovers have limited breeding and wintering range emphasizing the need of protection.

From the literature search on breeding records, no recent nesting population observations are recorded from these coasts on Hanuman Plover breeding. Hence, the current study also highlights that this species might be breeding in other wetlands of Tamil Nadu. This also emphasizes the need of comprehensive exhaustive survey and monitoring to be undertaken throughout the state to establish understanding of the breeding sites of Hanuman Plovers for future conservation and evaluation of the species status. The description of *C. seebohmi* as a regional endemic could make this species a flagship species in conservation prioritization in the Central Asian Flyway in Sri Lanka (Abeyrama & Seneviratne 2018) and south India.

REFERENCES

Abeyrama, D.K. & S.S. Seneviratne (2018). Evolutionary distinctiveness of Important Bird Areas (IBAs) of Sri Lanka: Do the species-rich wet zone forests safeguard Sri Lanka's genetic heritage? *Ceylon Journal of Science* 46: 89–99.

Ali, S. & S.D. Ripley (1983). *Handbook of the Birds of India and Pakistan: Compact Edition*. Oxford University Press, New Delhi, 816 pp.

Amat, J.A. & J.A. Maser (2004). Predation risk on incubating adults constrains the choice of thermally favourable nest sites in a plover. *Animal Behaviour* 67(2): 293–300. <https://doi.org/10.1016/j.anbehav.2003.06.014>

Balachandran, S. (1995). Shorebirds of the Marine National Park in the Gulf of Mannar, Tamil Nadu. *Journal of the Bombay Natural History Society* 92: 303–311.

del Hoyo, J., P. Wiersma, G.M. Kirwan., N. Collar, P.F.D. Boesman & C.J. Sharpe (2021). Kentish Plover (*Charadrius alexandrinus*). In Keeny, B.K. (eds) Birds of the World Ver. 1.1. Ithaca, NY, USA: Cornell Lab of Ornithology. <https://doi.org/10.2173/bow.kenplo.01.1>

del Hoyo, J., A. Elliott & J. Sargatal (1996). *Handbook of the Birds of the World. Vol. 3. Hootzin to Auks.* Lynx Edicions, Barcelona. 821pp

Futehally, Z. (2006). Recoveries from the Newsletter for Birdwatchers (1966)—11. *Indian BIRDS* 2(3): 76–77

Gill, F., D.Donsker & P. Rasmussen (2021). IOC World Bird List Eds. (v11.2). <https://doi.org/10.14344/IOC.ML.11.2>

Hayman, P., J. Marchant & T. Prater (2011). *Shorebirds: An Identification Guide to the Waders of the World.* Christopher Helm Publishers, London, 413 pp.

Kasambe, R. (2007). First record of breeding of Kentish Plover (*Charadrius alexandrinus seebohmi*) from Vidarbha, Maharashtra. *Newsletter for Birdwatchers* 47(2): 30.

Kasambe, R. & J. Wadatkar (2007). Birds of Pohara—Malkhed reserve forest, Amaravati Maharashtra—an updated annotated checklist. *Zoo's Print Journal* 22(7): 2768–2770. <https://doi.org/10.11609/jott.zpj.1464a.27768.70>

Kennerley, P., D. Bakewell & P. Round (2008). Rediscovery of a long-lost Charadrius plover from South-East Asia. *Forktail* 24: 63–79.

Kosztolányi, A. & T. Székely (2002). Using a transponder system to monitor incubation routines of Snowy Plovers (Usando un sistema de transpondor para monitorear las rutinas de anidaje de *Charadrius a. alexandrinus*). *Journal of Field Ornithology* 73(2): 199–205. <https://doi.org/10.1648/0273-8570-73.2.199>

Krebs, A. (1956). Kentish Plover (*Charadrius alexandrinus*) and Little Ring Plover (*Charadrius dubius*) nesting in South India. *Journal of the Bombay Natural History Society* 53(4): 7D2–7D3.

Küpper, C., J. Augustin, A. Kosztolányi, T. Burke, J. Figuerola, & T. Székely (2009). Kentish versus Snowy Plover: Phenotypic and Genetic Analyses of *Charadrius alexandrinus* Reveal Divergence of Eurasian and American Subspecies. *Auk* 126: 839–852.

Lessells, C.M. (1984). The mating system of Kentish plovers (*Charadrius alexandrinus*). *Ibis* 126(4): 474–483. <https://doi.org/10.1111/j.1474-919X.1984.tb02074.x>

Melluish, S. (1966). The Kentish Plover, *Charadrius alexandrinus* Linnaeus, breeding in southern Madras. *Newsletter for Birdwatchers* 6(2): 1–2.

Meininger, P., T. Székely & D. Scott (2009). Kentish Plover *Charadrius alexandrinus*, pp. 229–235. In: Delaney, S., D.A. Scott, T. Dodman & D.A. Stroud (eds.). *An Atlas of Wader Populations in Africa and Eurasia.* Wetlands International, London, 524 pp.

Niroshan, J.J., Y. Liu., J. Martinez., P. Que, C Wei., S. Weerakkody., G. Panagoda., J. Weerasena, A. A. T. Amarsinghe, T. Székely, A. L. Bond & S.S. Seneviratne (2023). Systematic revision of the 'diminutive' Kentish Plover (Charadriidae: *Charadrius*) with the resurrection of *Charadrius seebohmi* based on phenotypic and genetic analyses. *Ibis* (accpeted article) <https://doi.org/10.1111/ibi.13220>

Rasmussen, P.C. & J.C. Anderton (2005). *Birds of south Asia: The Ripley Guide.* Smithsonian Institution and Lynx Editions, 1072 pp.

Rao, G.B., S. Babu, H.N. Kumara & M. Bilaskar (2018). Ceylon Kentish Plover *Charadrius alexandrinus seebohmi* breeding in Vani Vilasa Sagara, Hiriyur Taluk, Karnataka, India. *Journal of Threatened Taxa* 10(1): 11237–11239. <https://doi.org/10.11609/jolt.3860.10.1.11237-11239>

Rheindt, F.E. & S.V. Edwards (2011). Genetic Introgression: An Integral but neglected component of speciation in birds. *Auk* 128: 620–632.

Sadanandan, K.R., C. Küpper, G.W. Low, C. Te. Yao, Y. Li, T. Xu, F.E. Rheindt, S. & Wu (2019). Population divergence and gene flow in two East Asian shorebirds on the verge of speciation. *Scientific Reports* 9: 1–9

Sangha, H.S. (2021). *Waders of the Indian Subcontinent.* WWF India. Jaipur, 536 pp.

Székely, T., G.H. Thomas & I.C. Cuthill (2006). Sexual conflict, ecology, and breeding systems in shorebirds. *BioScience* 56: 801–808. [https://doi.org/10.1641/0006-3568\(2006\)56\[801:SCEABS\]2.0.CO;2](https://doi.org/10.1641/0006-3568(2006)56[801:SCEABS]2.0.CO;2)

Vincze, O., T. Székely, C. Küpper, M. AlRashidi, J.A. Amat, A.A. Ticó, D. Burgas, T. Burke, J. Cavitt, J. Figuerola, M. Shobrak, T. Montalvo & A. Kosztolányi (2013). Local environment but not genetic differentiation influences biparental care in ten plover populations. *PLoS ONE* 8(4): e60998. <https://doi.org/10.1371/journal.pone.0060998>

Wetlands International (2006). Waterbird Population Estimates, Fourth Edition. Wetlands International, Wageningen, The Netherlands, 239 pp.



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