

**First documented record
of White-collared Kite
Leptodon forbesi in Bahia
state, Brazil**

White-collared Kite *Leptodon forbesi* was described in 1922 by Harry Kirke Swann from an individual collected in 1882 in Pernambuco state, north-east Brazil¹³. For many decades, the species was considered a variant of Grey-headed Kite *L. cayanensis* in juvenile plumage¹³, until more specimens were taken¹⁶, following which field observations¹¹ and a recent taxonomic revision validated it as a species⁴. It is considered one of the most endangered raptors of the world, being classified as Critically Endangered⁶ due to its small known population and geographic range², and, mainly, due to the loss and fragmentation of its habitat^{3,4,12}. An inhabitant of the Atlantic Forest, the population of White-collared Kite was believed

to be restricted to the Pernambuco subregion of this ecosystem⁹, more specifically, to the Pernambuco Centre of Endemism (PCE; Fig. 1)^{5,12}. However, recent records suggest the species has a larger distribution than previously known^{11,15}.

Most knowledge of White-collared Kite concerns its taxonomy⁴, flight behaviour and morphological characteristics useful for field identification¹³. Several authors have also discussed its conservation status and priorities for the species^{1,3,7-9,12}, but very few ecological data (i.e. population size, breeding requirements, etc.) are available, although recent research has determined that the species occurs in four different types of vegetation within its known range¹⁰. The lack of data is often attributed to the species' perceived rarity, although to our knowledge very few studies have attempted to determine occupancy in the remaining forest fragments¹³, to quantify population size or demographic parameters^{9,10}.

Here, we present the first documented record of White-collared Kite for Bahia state. We discuss the implications of this record for the species' biogeography and conservation.

On 1 November 2015, we documented a White-collared Kite in an Atlantic Forest fragment (c.950 ha) surrounded by farms, pasture and sugarcane monocultures in the municipality of São Sebastião do Passé, Bahia (12°27'45"S 38°24'11"W; Fig. 1). The forest patch has well-defined understorey and canopy strata, suggesting a secondary forest in advanced recovery. We observed the individual after initially hearing it call, and as the bird flew over we photographed it (Fig. 2). We also tried, unsuccessfully, to attract it using playback of both White-collared Kite and Grey-headed Kite.

We identified the bird as a White-collared Kite based on two diagnostic characters^{4,13}: the mostly white underwing-coverts and underside of the secondaries with much-reduced black barring

compared to the primaries. The black-tipped secondaries are rather unusual for White-collared Kite, as are the dark axillaries. However, both of the first two-mentioned characters are indicative of White-collared Kite⁴. The presence of a broad distal white tail-band is not diagnostic of White-collared Kite as it does not occur in all individuals⁴. It has been suggested that this character may be sexually dimorphic, given frequent observations of pairs in which one bird had a broad white band, while the other had two smaller white bands separated by a black band⁴. The bird we observed exhibited the latter pattern.

White-collared Kite has been widely observed in the PCE^{4,9,12} but previously there were only two records outside it, both in Sergipe, in Santa Luzia do Itanhy municipality¹² and in Serra da Itabaiana National Park, Areia Branca municipality¹⁵, 190 km south of the southernmost record in PCE (Coruripe municipality, Alagoas; Fig. 1). The southern range limits for White-collared Kite have been traditionally taken to coincide with those of the PCE², i.e. the São Francisco River, although it is unlikely that this river represents a functional barrier to a large, soaring, forest raptor¹². Perhaps because there were only two documented records outside PCE, it has been suggested that Sergipe records may have been wandering individuals¹². New research into its distribution suggests that the species can even disperse to northern Bahia, provided there are environmentally suitable forest patches⁹. However, the individual in Bahia was far beyond the São Francisco River or PCE (c.160 km from Santa Luzia do Itanhy, Sergipe; Fig. 1).

An important consequence of the presence of White-collared Kite in northern Bahia is the potential sympatry with Grey-headed Kite. For example, the latter species has also been observed in the forest fragment where we recorded White-collared Kite (SS pers. obs. 2015), albeit without documentation. However, there are

definite records of *L. cayanensis* in Sapiranga Reserve¹⁷, Mata de São João municipality, almost 40 km east of the White-collared Kite record, at which might locality *L. forbesi* might potentially also occur.

The majority of records of *L. forbesi* are in forest fragments of 100–10,000 ha⁹, with few records in fragments smaller than 10 ha¹². We recorded the species in a fragment of nearly 1,000 ha, but there are at least another ten sites larger than c.100 ha within a radius of 25 km, which should be surveyed for the species, and to determine if any individuals are wanderers or residents. We recommend surveys of Atlantic Forest fragments in northern Bahia and Sergipe to better understand the species' distribution limits. We also emphasise the need for ecological studies of its population size, breeding, diet and dispersal patterns, which will be key to accurately assess the species' threat level and effective conservation measures.

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References

1. Bencke, G. A., Mauricio, G. N., Develey, P. F. & Goerck, J. M. (2006) *Áreas importantes para a conservação das aves no Brasil. Parte I – Estados do domínio da Mata Atlântica*. São Paulo: SAVE Brasil.
2. BirdLife International (2016) Species factsheet: *Leptodon forbesi*. <http://datazone.birdlife.org/species/factsheet/white-collared-kite-leptodon-forbesi> (accessed 22 September 2016).
3. Brooks, T., Tobias, J. & Balmford, A. (1999) Deforestation and bird extinctions in the Atlantic forest. *Anim. Conserv.* 2: 211–222.
4. Dénes, F. V., Silveira, L. F., Seipke, S. H., Thorstrom,

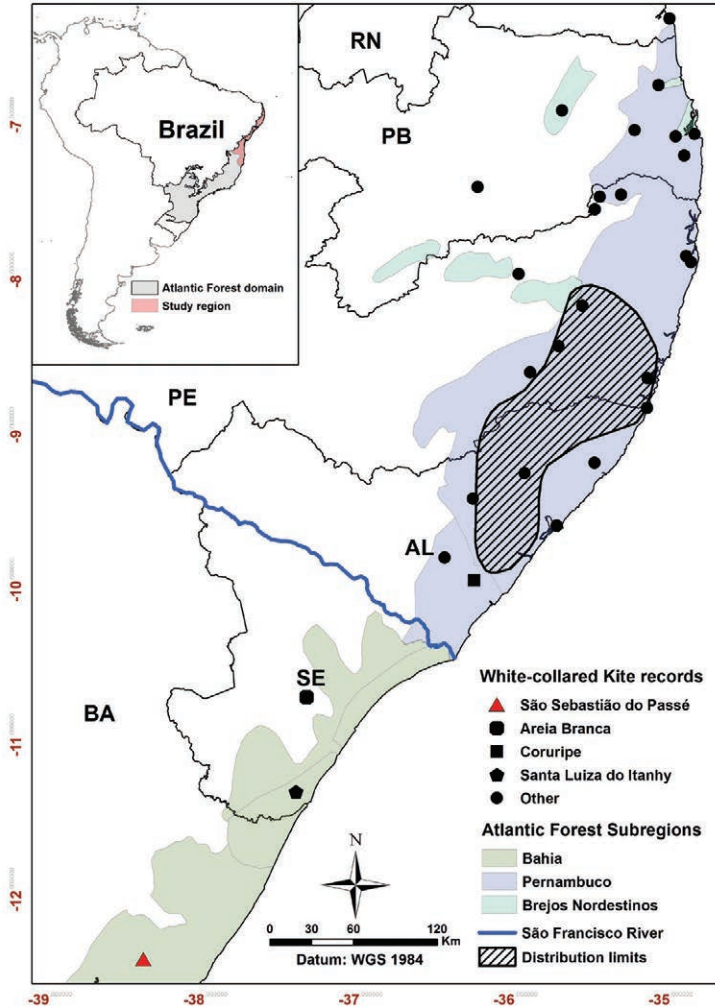


Figure 1. Known localities for White-collared Kite *Leptodon forbesi* in the Pernambuco Centre of Endemism and Bahia.



Figure 2. White-collared Kite *Leptodon forbesi*, São Sebastião do Passé, Bahia, 1 November 2015 (Gabriel Augusto Leite)

R., Clark, W. S. & Thiollay, J.-M. (2011) The White-collared Kite (*Leptodon forbesi* Swann, 1922) and a review of the taxonomy of the Grey-headed Kite (*Leptodon cayanensis* Latham, 1790). *Wilson J. Orn.* 123: 326–331.

5. ICMBio (2014) *Relatório anual de rotas de áreas de concentração de aves migratórias no Brasil*. Brasília: ICMBio.

6. IUCN (2016) Red list of threatened species. Version 2016.1. <http://iucnredlist.org/html> (accessed 18 June 2016).

7. Mallet-Rodrigues, F. (2006) Táxons de aves de validade questionável com ocorrência no Brasil. II – Acciptridae e Laridae. *Rev. Bras. Orn.* 14: 176–178.

8. Olmos, F. (2005) Aves ameaçadas, prioridade e políticas de conservação no Brasil. *Natureza e Conservação* 3: 21–42.

9. Pereira, G. A. (2016) Distribuição, modelagem ecológica e conservação de aves florestais, endêmicas e / ou ameaçadas de extinção na Mata Atlântica nordestina. Ph.D. thesis. Recife:

Universidade Federal Rural de Pernambuco

10. Pereira, G. A. & Azevedo-Júnior, S. M. (2016) Distribution and conservation of three important bird groups of the Atlantic Forest in north-east Brazil. *Braz. J. Biol.* 76: 1004–1020.

11. Pereira, G. A., Dantas, S. M. & Periquito, M. (2006) Possível registro de *Leptodon forbesi* no Estado de Pernambuco, Brasil. *Rev. Bras. Orn.* 14: 441–444.

12. Pereira, G. A., Dantas, S. M., Silveira, L. F., Roda, S. A., Albano, C., Sonntag, F. A., Leal, S., Periquito, M. C., Malacco, G. B. & Lees, A. C. (2014) Status of the globally threatened forest birds of northeast Brazil. *Pap. Avuls. Zool., São Paulo* 54: 177–194.

13. Seipke, S. H., Dénes, F. V., Pallinger, F., Thorstrom, R., Thiollay, J., Silveira, L. F. & Clark, W. (2011) Field identification of White-collared Kite *Leptodon forbesi* and similar looking species in north-east Brazil. *Neotrop. Birding* 8: 29–39.

14. Silva, J. M. C. & Casteleti, C. H. M. (2003) Status of the biodiversity of the Atlantic Forest of Brazil. In: Galindo-Leal, C. & Câmara, I. G. (eds.) *The Atlantic Forest of South America: biodiversity status, threats and outlook*.

- Washington DC: Center for Applied Biodiversity Science & Island Press.
15. Silva, C. & Lima, J. O. (2016) Primeiro registro documentado do gavião-de-pescoço-branco para o Parque Nacional Serra de Itabaiana, Sergipe, Brasil. *Atualidades Orn.* 193: 25.
 16. Teixeira, D. M., Nacinovic, J. B. & Pontual, F. B. (1987) Notes on some birds of north-eastern Brazil. *Bull. Brit. Orn. Club* 107: 151–157.
 17. WikiAves (2017) [Mapa de registros da espécie gavião-de-cabeça-cinza (*Leptodon cayanensis*)]. WikiAves, a Enciclopédia das Aves do Brasil. www.wikiaves.com.br/mapaRegistros_gavião-de-cabeça-cinza (accessed 17 April 2017).

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