Columbidae: split *Macropygia albicapilla* (Sulawesi Cuckoo-Dove) from *Macropygia doreya* (Sultan's Cuckoo-Dove)

Taxonomic revisions based on data presented in Ng et al (2016) and Eaton et al (2021)

Introduction

Cuckoo-doves of the genus *Macropygia* are unobstrusive, brown plumaged doves generally occupying wooded habitats across Australasia and Southeast Asia up to southern China. Within this genus, the brown cuckoo-dove (*Macropygia amboinensis* s.l.) complex comprises a group of forest-dwelling doves that has had a complex taxonomic history, with treatments describing between one to six species. The multitude of islands inhabited within each species-level group has rendered the exact circumscription of specific boundaries difficult (Ng et al. 2016). Some island sub-species differ subtly in coloration, which further complicates the use of plumage characters alone in species delimitation. Other characters, such as bioacoustic ones, are helpful in understanding species limits and biogeographical patterns of diversification.

Ng et al. (2016) investigated whether bioacoustics data across the brown cuckoo-dove species complex are congruent with the plumage-based taxonomy reported by Gibbs et al. (2001) or whether additional cryptic taxa could be revealed by vocal differentiation. The study further examined whether there is bioacoustic evidence for isolation-by-distance over landmasses whilst taking into consideration overwater distances that would have to be crossed at the glacial maxima. The aim was to test whether bioacoustic data provide support for the inclusion of various island taxa into broad species. In the absence of isolation-by-distance, some island taxa with distinct vocalizations would have remained isolated from one another, despite glacial land connections. This would suggest that other evolutionary mechanisms played a role in the diversification of the brown cuckoo dove species complex.

The resulting taxonomic recommendation by Ng et al. (2016) was to recognize eleven species (and in addition, one undescribed taxon), this taxonomic recommendation was accepted by IOC and eBird and is the basis of AviList v2025. However, one proviso of interest is mentioned in Ng et al (2016) 'According to PCA, *M. doreya* (as defined here) could be further divided into (1) *M. albicapilla* (including the taxa *albicapilla*, *sedecima*, *atrata* and *sanghirensis*) centered in the Sulawesi subregion and (2) *M. doreya* s.s. (including taxa *albiceps*, *balim* and *doreya*) from the northern Moluccas and parts of New Guinea [Fig. 1-4]. These two forms make a quite distinct impression on the human ear [Fig 5-6], and they divide out into different vocal PCA clusters [Fig. 7], although they fail to be diagnosable by the Isler criterion. Accordingly, we retain them here as *M. doreya*, at the same time acknowledging that future insights may change this treatment.'

In this proposal we use morphology in addition to the bioacoustic evidence and recommend the taxonomy used by Eaton et al (2021) and to recognise *M. doreya* (Sultan's Cuckoo-Dove; ssp. *doreya*, *balim*, *albiceps*) as a separate species from *M. albicapilla* (Table 1-2; Sulawesi Cuckoo-Dove; spp. *albicapilla*, *sanghirensis*, *sedecima*, *atrata*).

Birds of the World Account: https://birdsoftheworld.org/bow/species/sulcud1

Table 1. Current taxonomy for AviList v2025

English name	Scientific name	Range
Sultan's Cuckoo-Dove	*Macropygia doreya*	
	Macropygia doreya doreya	northwestern New Guinea including Raja Ampat Islands (off western New Guinea)
	Macropygia doreya balim	Balim Valley, western New Guinea
	Macropygia doreya albiceps	northern Moluccas
	Macropygia doreya atrata	Togian Islands (off east-central Sulawesi)
	Macropygia doreya albicapilla	Sulawesi, including Banggai Islands (off eastern Sulawesi), and Tukangbesi and adjacent islands (off southeastern Sulawesi)
	Macropygia doreya sanghirensis	Sangihe, Siau, Tahulandang, Ruang, and Talaud islands
	Macropygia doreya sedecima	Sula Islands

Table 2. Proposed taxonomic revision for AviList v2026

English name	Scientific name	Range
Sultan's Cuckoo-Dove	*Macropygia doreya*	
	Macropygia doreya doreya	northwestern New Guinea including Raja Ampat Islands (off western New Guinea)
	Macropygia doreya balim	Balim Valley, western New Guinea
	Macropygia doreya albiceps	northern Moluccas
Sulawesi Cuckoo-Dove	*Macropygia albicapilla*	
	Macropygia albicapilla albicapilla	Sulawesi, including Banggai Islands (off eastern Sulawesi), and Tukangbesi and adjacent islands (off southeastern Sulawesi)
	Macropygia albicapilla sanghirensis	Sangihe, Siau, Tahulandang, Ruang, and Talaud islands
	Macropygia albicapilla sedecima	Sula Islands
	Macropygia albicapilla atrata	Togian Islands (off central Sulawesi)

Reasons for taxonomic revision, using Ng et al (2016) and Eaton et al (2021):

Morphology

Sulawesi Cuckoo Dove *Macropygia albicapilla* E
L 34–37 cm. 4 ssp: *albicapilla* (Sul and satellites); *sanghirensis* (Sangihe, Talaud); *atrata* (Togian); *sedecima* (Sula). See Amboina Cuckoo Dove for taxonomy. Fairly common in all types of woodland and forest edge, <2000 m. **ID** Similar to nominate Amboina Cuckoo Dove but smaller, shows more white on underparts, and **M** shows grey cap with white forecrown. Ssp *atrata* larger and darker above and below; *sanghirensis* also darker above and more boldly barred on breast; *sedecima* **M** has brownish tinge to grey crown and is more cinnamon above and darker below than *albicapilla* while **F** more strongly barred above than *albicapilla*. **Voc** 2-note "puk-hooa", lasting 0.7 sec, regularly repeated. First note sometimes absent or inaudible at distance.

Sultan's Cuckoo Dove *Macropygia doreya*
L 34–37 cm. NG to N Mol. 3 ssp, 1 in region: *albiceps* (N Mol). See Amboina Cuckoo Dove for taxonomy. Fairly common in all types of woodland and forest edge. **ID** Similar to Amboina Cuckoo Dove but head, throat and breast more rusty or pink with almost no barring. **Voc** Hollow, 2- to 3-note "wu-haa" or "wu-hu-haa", lasting 0.7 sec, rapidly repeated in short series.

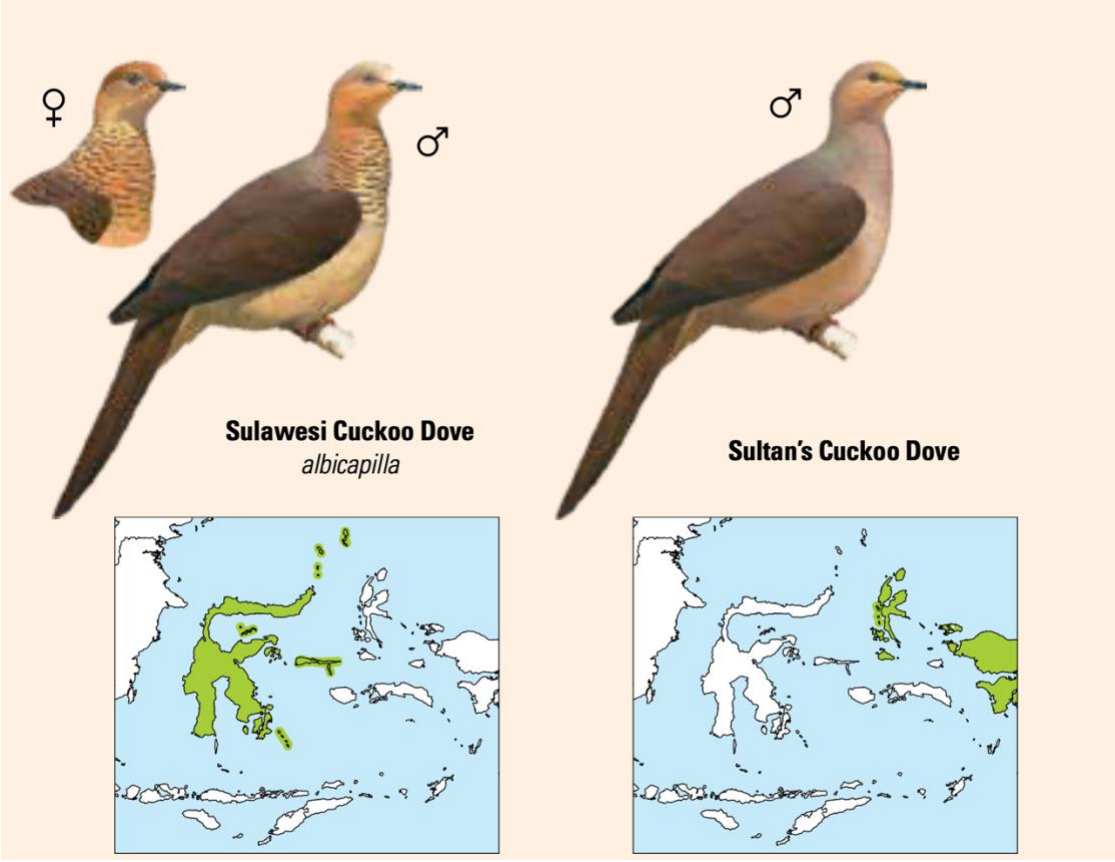


Figure 1: Species accounts and plates from Eaton et al (2021).

The plumage differences between the two species are stark and obvious in the field – this was the reason that the Indonesian Archipelago field guide accepted them as separate species, despite Ng et al (2016) results. Morphologically, *M. d. albicapilla* is one of the most distinctive of all *Macropygia* studied in Ng et al (2016): whilst most of the taxa are uniformly brown with varying differences in barring across the underparts (or occasionally upperparts) and richness of the brown plumage, *albicapilla* is a striking bird with the male in particular showing a white forecrown, paler crown, and whitish breast with black barring (Fig. 2-4).

Figure 2: *M. d. albicapilla* (Sulawesi; left) https://macaulaylibrary.org/asset/470607231 and *M. d. albiceps* (North Moluccas; right) https://macaulaylibrary.org/asset/545452741. Note white forecrown, grey cap, whitish breast with heavy barring in former. The barring extends lightly to the undertail coverts (versus the proposed *doreya* group which has no barring in adult male plumage).

Figure 3: *M. d. atrata* (Togian islands) (https://macaulaylibrary.org/asset/624121172), again showing the light breast with heavy barring and white forecrown.

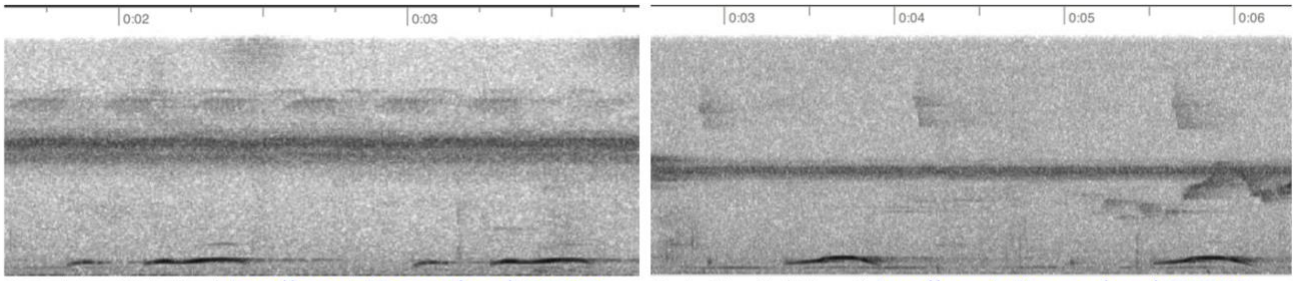
Figure 4: *M. d. doreya* (Papua, New Guinea) https://macaulaylibrary.org/asset/615627239. Nominate *doreya* shows crown concolorous with rest of head, no white breast spot, while some light barring is sometimes evident.

Genomics

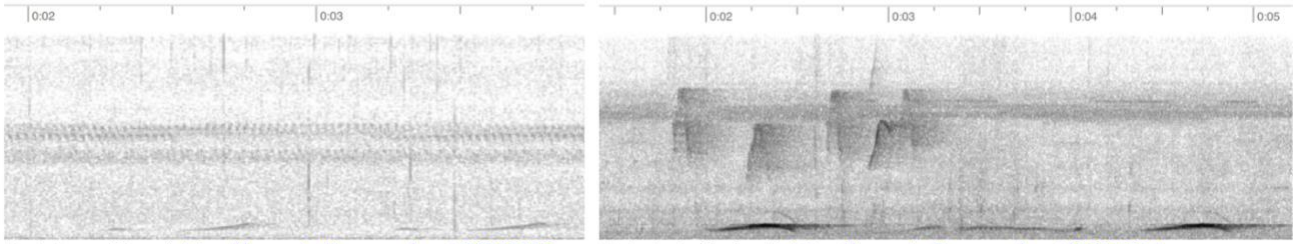
No genomic studies have been undertaken.

Bioacoustics

To the human ear, the two are dramatically different – *albicapilla* (Sulawesi Cuckoo-Dove) being a two-note "puk-hooa", though the first note usually being inaudible except at very close range when it becomes barely audible (Fig. 5). In contrast, *doreya* (and *albiceps*) has an obvious introductory note, swiftly followed by the main note, which can be disyllabic (most obvious in *albiceps*) (Fig. 6). This difference is also apparently discernable to cuckoo-doves, as evidenced by our playback experiments in the field (Table 3), but was not highlighted by the particular bioacoustic parameters chosen in the Ng et al. (2016) study.

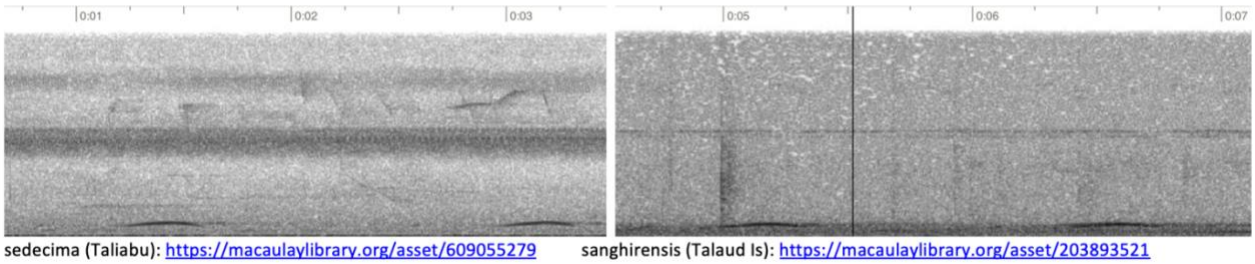


M. d. albiceps (Halmahera): https://macaulaylibrary.org/asset/609059282 M. d. albicapilla (Sulawesi): https://macaulaylibrary.org/asset/609059264



M. d. doreya (Papua): https://macaulaylibrary.org/asset/608805713 M. d. atrata (Togian Is): https://macaulaylibrary.org/asset/219215811

Figure 5. Direct comparison of sonograms between 'Sultan's Cuckoo-Dove' and 'Sulawesi Cuckoo-Dove' taxa



sedecima (Taliabu): https://macaulaylibrary.org/asset/609055279 sanghirensis (Talaud Is): https://macaulaylibrary.org/asset/203893521

Figure 6. Additional two taxa of 'Sulawesi Cuckoo-Dove' sonograms, to show the consistency of call notes.

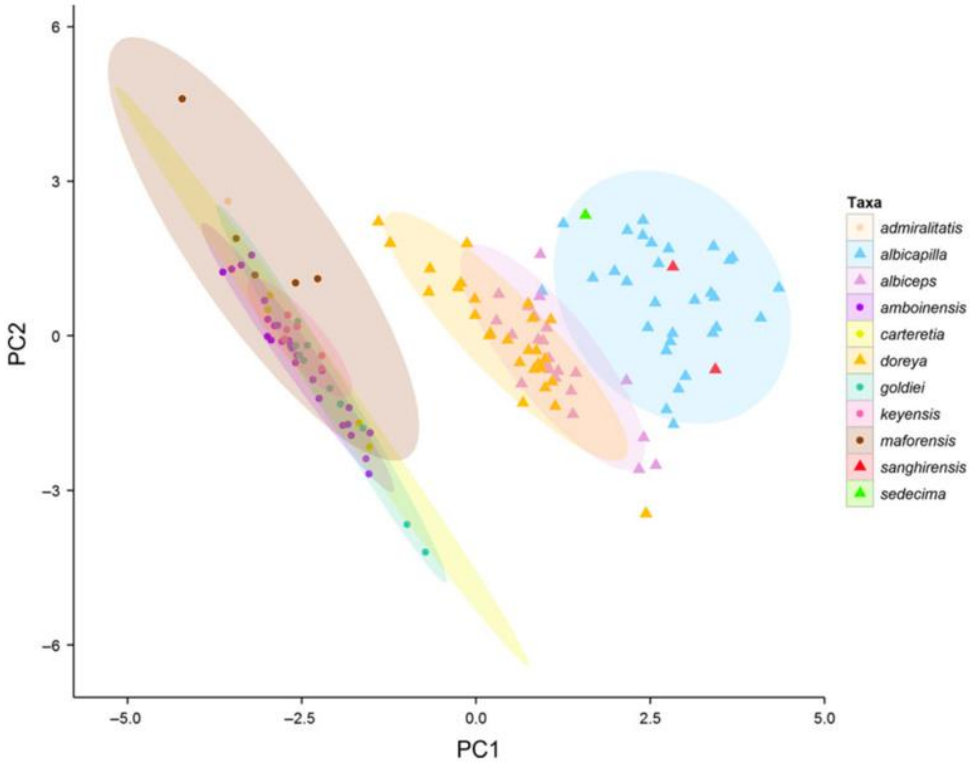


Figure 7. Principal component (PC) plot of PC1 against PC2 for *Macropygia amboinensis* sensu Gibbs et al. (2001). PC1, explaining 57% of total variance, was positively correlated with the number of elements total intra-motif break and motif lengths, break length between motifs, and the ratio of total break length and total motif length. PC2, explaining 20% of total variance, was positively correlated with total highest, peak, and bandwidth frequencies. Taxon *atrata* was omitted from PCA because of the absence of more than one non-element specific vocal character. Two distinct symbols (circles and triangles) represent the two distinct vocalizations in *M. amboinensis*. Ellipses represent 95% confidence intervals of the PC scores for each taxon.

However, Ng et al (2016) did not split the Sulawesi Cuckoo-Dove taxa, as noted in the discussion, they state:

> 'According to PCA, *M. doreya* (as defined here) could be further divided into (1) *M. albicapilla* (including the taxa *albicapilla*, *sedecima*, and *sanghirensis*) centered in the Sulawesi subregion and (2) *M. doreya s.s.* (including taxa *albiceps* and *doreya*) from the northern Moluccas and parts of New Guinea. These latter two forms make a quite distinct impression on the human ear, and they divide out into different vocal PCA clusters (Fig 7.), although they fail to be diagnosable by the Isler criterion. Accordingly, we retain them here as *M. doreya*, at the same time acknowledging that future insights may change this treatment.'

Based on the results from Ng et al. (2016) four Isler-diagnosable parameters were identified between *albicapilla* and *doreya* (refer to Table 2 in Ng et al. (2016)) as well as a very minor overlap in PCA between *albiceps* and *albicapilla* (Fig. 7). The decision to not split *albicapilla* and *doreya* was based on the lack of Isler-diagnosable parameters were found between taxa pairs between constituent taxa: *doreya* and *sedecima, doreya and sanghirensis*, *albiceps* and *albicapilla*, and *albiceps* and *sedecima*.

Table 3: Playback experiments have been conducted in the field by James Eaton. Strong response (SR) indicates the bird flew towards the recording played, No response (NR) indicates the bird showing no indication of flying towards the recording. Generally, *Macropygia* species are highly responsive to playback, rarely do they not show a positive response to a recording of their own song (J. Eaton pers obs).

Location	East Sulawesi	Togian	Peleng	Taliabu	Bacan	Morotai	Obi
Taxon	*M. a. albicapilla*	*M. a. atrata*	*M. a. albicapilla*	*M. a.sedecima*	*M. d. albiceps*	*M. d. albiceps*	*M. d. albiceps*
Recording played							
albicapilla	SR = 2	SR = 1	SR = 6	SR = 5	NO = 1	NO = 2	NO = 4
doreya	NO = 2	NO = 1	NO = 6	NO = 5	SR = 1	SR = 2	SR = 4

Playback experiments were conducted between 2025-2026 in preparation for a proposal of this kind, and highlighted the bioacoustic differences between the two proposed species groups. In previous years, anecdotal playback experiments have been conducted on an informal basis through the range of the taxa under discussion, with the results being similar to those presented in Table 3.

Biogeography

Currently, *M. doreya* (*sensu lato*) is perhaps the only species of non-passerine that is found exclusively from Sulawesi through to New Guinea, with Black Sunbird *Leptocoma sericea* currently sharing a similar range. However, if this taxonomic revision is accepted, *M. albicapilla* would be considered an endemic to the Sulawesi subregion, which already contains over 100 endemics. *M. doreya* (*sensu stricto*) would then be restricted to Northern Moluccas and surrounding islands and much of New Guinea - this constitutes a range shared by many other species, especially non-passerines (Great Cuckoo Dove *Reinwardtoena reinwardti,* Gurney's Eagle *Aquila gurneyi,* Pygmy Eagle *Hieraaetus weiskei*, Blyth's Hornbill *Rhyticeros plicatus*, Variable Goshawk *Tachyspiza hiogaster* etc). As noted by Rheindt in Eaton et al (2021):

> 'The Northern Moluccas are one of the most fascinating island groups in Indonesia. They are one of the modern land masses with the most turbulent geologic and Earth historic background, and recent research shows that they have moved into the Wallacean Region at a relatively fast pace within the last 2–5 million years, having come from north of the Papuan Vogelkop Peninsula. This geologic background may explain that the Northern Moluccas are the only island group in the region covered by this book that is inhabited by birds-of-paradise.'

Yardstick

The PCA 95% ellipses based on the analyzed bioacoustics parameters between the two proposed taxa overlap slightly (Fig. 7), but we note that other species that have been split on the basis of vocal differences despite overlapping in PCA space. A similar example would be that of the Penan hawk-cuckoo *Hierococcyx tiganada*, where PC1 and PC2 also overlapped very slightly (Fig. 8), but the primary evidence rested on two Isler-diagnosable parameters.

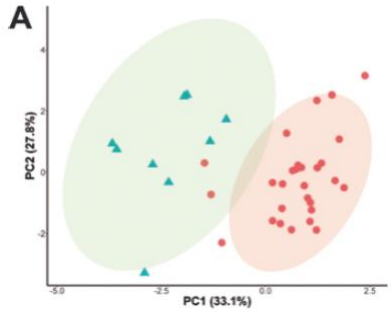


Figure 8. *Hierococcyx tiganada* PCA (Rheindt et al 2025).

The Javan Robin *Myiomela diana* and Sumatran Robin *Myiomela sumatrana* split was based on more minor differences in morphology and bioacoustics (Ng et al 2020), and anecdotal playback experiments that potentially contradicted the split: this split was accepted by AviList TaxCom in #1188 despite no Isler diagnosable parameter in the result, though it was a contested discussion.

Conclusion

Tropical Asia RAG proposes that *M. doreya* and *M. albicapilla* be recognised as separate species based on clear vocal and plumage differentiation between the two taxa, and based on results from playback experiments. The magnitude of these differences is comparable to that observed between other closely related taxa that are now recognised as distinct species by AviList.

References

Eaton, J. A., Van Balen, B., Brickle, N. W., & Rheindt, F. E. (2017). Birds of the Indonesian Archipelago. Greater Sundas and Wallacea. Second Edition.

Gibbs, D., Barnes, E. and Cox, J., 2001. A guide to the pigeons and doves of the world. Pica Press, UK.

Ng, E.Y., Eaton, J.A., Verbelen, P., Hutchinson, R.O. and Rheindt, F.E., 2016. Using bioacoustic data to test species limits in an Indo-Pacific island radiation of Macropygia cuckoo doves. Biological Journal of the Linnean Society, 118(4), pp.786-812.

Ng, E.Y., Yue, A.Y., Eaton, J.A., Gwee, C.Y., van Balen, B. and Rheindt, F.E., 2020. Integrative taxonomy reveals cryptic robin lineage in the Greater Sunda Islands. Treubia, 47(1), pp.39-52.

Rheindt, F.E., Teo, G. G. K., Eaton, J. A., Ng E. Y. X. (2025) A new and cryptic species of hawk-cuckoo (genus Hierococcyx) from Borneo. Journal of Asian Ornithology 41: 34-43.