

Vocalisations and taxonomy of the Sulawesi Leaf Warbler *Phylloscopus sarasinorum* complex, including discussion of a novel undescribed taxon from Selayar, Indonesia

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The Sulawesi Subregion was traditionally thought to be home to a single, resident *Phylloscopus* leaf warbler. However, recent exploration has revealed an additional three species, two of which have only very recently been described: Taliabu Leaf Warbler *Phylloscopus emilsalimi* and Peleng Leaf Warbler *P. suaramerdu* from the outlying islands of Taliabu and Peleng, respectively. The third, ‘Selayar Leaf Warbler’, remains undescribed, but here we provide the first bioacoustical documentation of its unique song, along with recommending that Sulawesi Leaf Warbler *P. sarasinorum sensu lato* should be regarded as two species: Lompobattang Leaf Warbler *P. sarasinorum* and Sulawesi Leaf Warbler *P. nesophilus*, based on distinct bioacoustics and morphology.

INTRODUCTION

Phylloscopus, typically referred to as the leaf warblers, is a widespread genus with a vexed taxonomy. Many species-groups are cryptic, differing only subtly in plumage and morphometrics, but more substantially vocally and genetically (Alström & Olsson 1990, 1992, 1997, Helbig *et al.* 1995, 1996, Olsson *et al.* 2005, Rheindt 2006, Saitoh *et al.* 2008, Päckert *et al.* 2009, Martens 2010, Alström *et al.* 2010, 2011, Eaton *et al.* 2016, Rheindt *et al.* 2020). The latter two sources of information are increasingly used to elucidate species limits, such that the number of recognised *Phylloscopus* species has increased substantially in recent years. In addition, continued exploration of remote regions and islands has led to the discovery of numerous new species (e.g. Alström *et al.* 2010, Ng *et al.* 2018, Rheindt *et al.* 2020).

The leaf warblers were traditionally split into two genera: *Phylloscopus* (the ‘typical leaf warblers’) and *Seicercus* (the ‘spectacled warblers’). Phylogenetic studies (Alström *et al.* 2013, 2018) have since shown traditional *Seicercus* to comprise two non-sister clades nested within *Phylloscopus*. To resolve this paraphyly, three solutions are available: 1) to substantially break up *Phylloscopus* and *Seicercus* into smaller genera (e.g. Boyd (2017) recognised nine genera in the complex); 2) to greatly expand *Phylloscopus* to include many traditional *Phylloscopus*, including all resident Indonesian leaf warblers (e.g. Eaton *et al.* 2016); or 3) to synonymise *Phylloscopus* and *Seicercus* to create a monogeneric family, as advocated by del Hoyo & Collar (2016) and Alström *et al.* (2018). For the purposes of this study, we follow the major global taxonomic checklists (del Hoyo & Collar 2016, Clements *et al.* 2019, Gill *et al.* 2020) in adopting option 3, with the justification given in Alström *et al.* (2018) that large genera are not inherently problematic, providing they are monophyletic.

Traditionally, the Sulawesi Subregion of Indonesia was thought to be inhabited by a single, widely distributed resident leaf warbler species, Sulawesi Leaf Warbler *Phylloscopus sarasinorum* (see Figure 1) [treated as a *Seicercus* by Eaton *et al.* (2016) and Dickinson & Christidis (2014), and as a *Cryptigata* by Boyd (2017)]. However, recent exploration has revealed additional species, two of which have only recently been described (Rheindt *et al.* 2020): Taliabu Leaf Warbler *P. emilsalimi* and Peleng Leaf Warbler *P. suaramerdu* from the outlying islands of Taliabu and Peleng, respectively, several years after being first documented (Rheindt 2010, Rheindt *et al.* 2010).

Located in South Sulawesi Province, Selayar lies off the southernmost tip of the south-west Sulawesi leg, separated by a 16 km deep-water strait that reaches a minimum depth of 250 m, such that even during glacial maxima (when sea levels were up to 120 m lower than the present day), the two landmasses have never been connected. Selayar hosts two endemic avian taxa: subspecies of Sulawesi Blue Flycatcher *Cyornis omissus peromissus* and Rusty-breasted Whistler

Pachycephala fulvotincta teysmanni, the latter given species rank, Selayar Whistler, by del Hoyo & Collar (2016). A form (*saleyrensis*) of Sahul Sunbird *Cinnyris clementiae* is currently synonymised with the widespread *plateni* by all major global taxonomies (e.g. del Hoyo & Collar 2016, Clements *et al.* 2019, Gill *et al.* 2020), but probably deserves recognition as a third endemic subspecies (Eaton & Rheindt 2017). Selayar was first ornithologically explored by Teysmann in 1878—which included, among others, the collection of Selayar Whistler (Büttikofer 1893)—and again in 1889 and 1895 by Professor Max Weber and Alfred H. Everett respectively (Hartert 1896). Although Everett collected an Arctic Warbler *P. borealis sensu lato* (AMNH 449898; specimen checked), neither he nor Weber are known to have procured any other *Phylloscopus* on the island. Further explorations, in 1927 (von Plessen 1929) and 1993 (Dutson 1995) also make no mention of a resident leaf warbler on the island.

On 30 November 2017, JAE discovered a singing *Phylloscopus* warbler in an area of mixed second growth forest at an elevation of 220 m on Selayar (6.211°S 120.500°E), and noted its unique plumage compared to other Wallacean leaf warblers (Eaton & Rheindt 2017).

Figure 1. Distribution of resident *Phylloscopus* in the Sulawesi subregion, Indonesia.

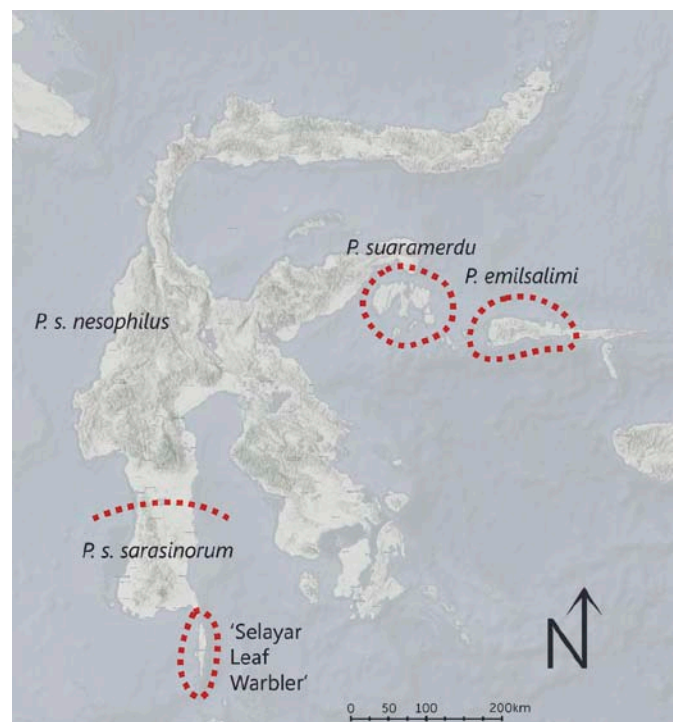


Table 1. Univariate summary statistics (mean \pm standard deviation) of selected vocal parameters for the six Wallacean *Phylloscopus* taxa, including the novel taxon from Selayar.

Vocal parameter	Taxon/island					
	Selayar Leaf Warbler (<i>P. sp.</i>) (<i>n</i> = 4)	<i>P. s. sarasinorum</i> (south-west Sulawesi) (<i>n</i> = 6)	<i>P. s. nesophilus</i> (rest of Sulawesi) (<i>n</i> = 16)	<i>P. p. presbytes</i> (Timor) (<i>n</i> = 33)	<i>P. p. floresianus</i> (Flores) (<i>n</i> = 17)	<i>P. r. rotiensis</i> (Rote) (<i>n</i> = 30)
Number of elements per strophe	7.83 \pm 0.67	11.33 \pm 2.07	13.87 \pm 2.19	7.8 \pm 2.16	7.15 \pm 1.26	5.58 \pm 0.66
Duration of strophe (seconds)	1.23 \pm 0.19	1.90 \pm 0.61	3.58 \pm 2.77	1.14 \pm 0.25	1.05 \pm 0.23	1.39 \pm 0.11
Lowest frequency of strophe (Hz)	3214.71 \pm 307.95	2944.73 \pm 307.83	2141.70 \pm 623.38	2764.24 \pm 345.68	2953.7 \pm 358.37	3075.28 \pm 392.21
Highest frequency of strophe (Hz)	6975.89 \pm 480.14	6650.76 \pm 393.8	6858.06 \pm 672.37	7953.98 \pm 533.67	7920.88 \pm 537.86	8103.1 \pm 490.37
Bandwidth of strophe (Hz)	4127.38 \pm 924.4	3390.2 \pm 601.7	4737.57 \pm 994.5	5189.74 \pm 705.94	4967.17 \pm 445.89	5027.82 \pm 685.93

Between 22–24 January 2020, AJB visited Selayar and at the same locality found a minimum of six leaf warblers showing the same plumage traits as those identified in 2017, as well as a lone bird at a different location further south, at 200 m asl. To the best of our knowledge no one has published, either in peer-reviewed literature or on popular online sources, any other sighting or documentation of the novel taxon.

Sulawesi Leaf Warbler is a common (sub)montane species, not found below 600 m, endemic to the island of Sulawesi (White & Bruce 1986, Coates & Bishop 1997). Traditionally (Dickinson & Christidis 2014, del Hoyo & Collar 2016, Clements *et al.* 2019, Gill *et al.* 2020), it is considered to comprise two subspecies: (i) nominate *sarasinorum*, endemic to the Lompobattang Massif, South Sulawesi; and (ii) *nesophilus*, found in montane forest throughout the rest of Sulawesi (Figure 1). Eaton *et al.* (2016) split the two taxa, as ‘Lompobattang Leaf Warbler’ and ‘Sulawesi Leaf Warbler’ respectively, on account of ‘extensive vocal and plumage differences greater in magnitude than between many other leaf warbler species’. Here, we describe the bioacoustical and morphological distinctiveness of the two Sulawesi and single Selayar taxa, and propose species status for all three.

METHODS

Acoustic analysis

In January 2020, the first sound recordings of Selayar Leaf Warbler song were obtained from four individuals. These are compared herein to other Wallacean *Phylloscopus* species. Recordings of songs were compiled from online repositories: AVoCet (<https://avocet.integrativebiology.natsci.msu.edu/>), xeno-canto (<https://www.xeno-canto.org/>) and the Macaulay Library (<http://macaulaylibrary.org/>); recordings that were too poor quality to extract data were removed. Sonograms were visualised and analysed with Raven Lite v2.0 (Bioacoustics Research Program, Cornell Laboratory of Ornithology, Ithaca, New York, USA). Contrast and brightness were equalised across all recordings. Elements were defined as an unbroken vocal segment within a strophe; a strophe is defined as a series of elements with a discrete beginning and end. Parameters measured were: 1) number of elements per strophe; 2) duration of strophe; 3) lowest frequency of strophe; 4) highest frequency of strophe; 5) bandwidth of strophe (Table 1). The means of all parameters were calculated for each individual. Data for *P. presbytes* and *P. rotiensis* were taken from Ng *et al.* (2018).

Morphological comparison

Photographs of Wallacean *Phylloscopus* species were compiled from online depositories, as well as the authors’ private collections, to check for a range of plumage and bare part characteristics. Discounting poor quality photographs and duplicates between depositories, 184 photographs were analysed (including Macaulay Library *n* = 70;

Flicker *n* = 55; Oriental Bird Images *n* = 16, see Appendix 1). For ‘Selayar Leaf Warbler’, *P. s. sarasinorum* and *P. s. nesophilus*, these consisted of at least 5, 28 and 26 individual birds, respectively.

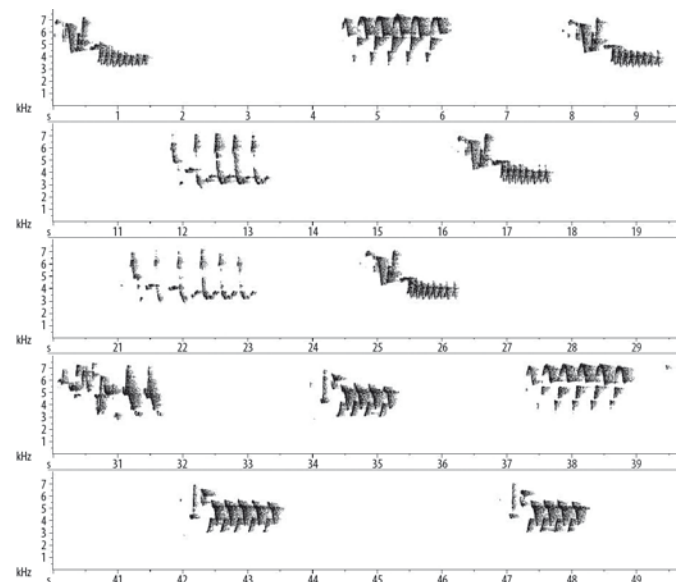
RESULTS

Selayar Leaf Warbler *Phylloscopus sp.*

The song of this undescribed taxon is characterised by the repetition of short stereotypic strophes (0.8–2 seconds; mean 1.23), spaced by 1.6–3.1 seconds (Figure 2). Each strophe is audible as a distinct rattle (sometimes with a simple introduction), with little complexity and a relatively high minimum frequency. Compared to both *sarasinorum* (Figure 3) and *nesophilus* (Figure 4), the song of this undescribed taxon is much simpler, with no rambling or squeaky quality to its strophes. Among the four individuals recorded, there was little variation away from the recording visualised in Figure 2. Structurally, the song is most similar to that of *sarasinorum* (*cf.* Figure 3A)—which it is geographically closest to—however, the latter has longer strophes (Kruskal-Wallis Test: $\chi^2(1) = 4.127$, $p < 0.05$) with more elements ($\chi^2(1) = 6.585$, $p = 0.01$) and exhibits considerably more complexity, with fewer repetitions or rattles.

Sulawesi Leaf Warbler *Phylloscopus sarasinorum*

As first reported in Eaton *et al.* (2016), the song of *P. s. sarasinorum* is strikingly different to that of *P. s. nesophilus*, although both exhibit considerable variation with much overlap. The song of *nesophilus* has

Figure 2. Sonogram of the song of Selayar Leaf Warbler *Phylloscopus sp.*, Selayar, Indonesia [XC585653, AJB].

a peculiar squeaky quality unmatched by *sarasinorum*, principally a result of its significantly greater bandwidth ($\chi^2(1) = 5.918, p = 0.015$). In addition, it is usually more varied, with a greater number of elements per strophe ($\chi^2(1) = 5.273, p = 0.022$), and more rambling, often lacking any structure or repetition (although the latter character is somewhat variable). Recordings of *nesophilus* song from throughout Sulawesi were analysed (north: $n = 4$; south-east: $n = 6$; central: $n = 6$), with no variation noticed between subpopulations.

Morphological differences

Selayar Leaf Warbler *Phylloscopus* sp.

All birds observed ($n = 7$) matched the phenotype described

by Eaton & Rheindt (2017). Specifically, birds on Selayar are characterised by very dull olive-green upperparts with almost no yellowish hue, a broad, whitish crown-stripe, a long supercilium extending to rear crown, unmarked ear-coverts, and whitish underparts (including contrasting undertail-coverts). While Eaton & Rheindt (2017) noted a 'narrow but distinct greater covert wingbar', this appeared to be variable: only three individuals displayed it, which was likely due to the worn plumages displayed on some individuals. Birds showed extensive white in the tail, seemingly at least equal to that shown by *sarasinorum*. While comparisons must await accurate measurements, all individuals also appeared to exhibit a conspicuously large bill. Qualitative plumage data (Table 2)

Figure 3. Sonogram of Lompobattang Leaf Warbler *Phylloscopus sarasinorum sarasinorum*, from the Lompobattang Massif, South Sulawesi [XC393126, Jonas Nordin].

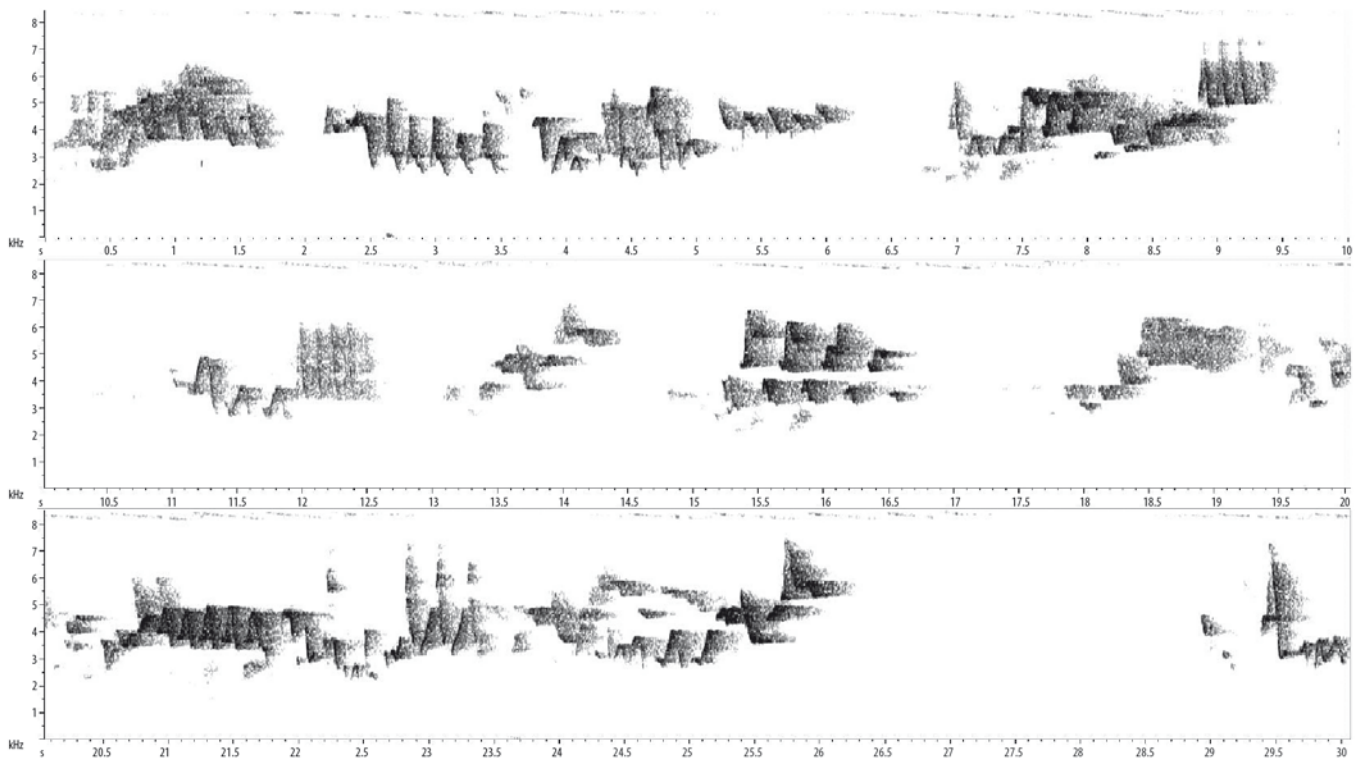
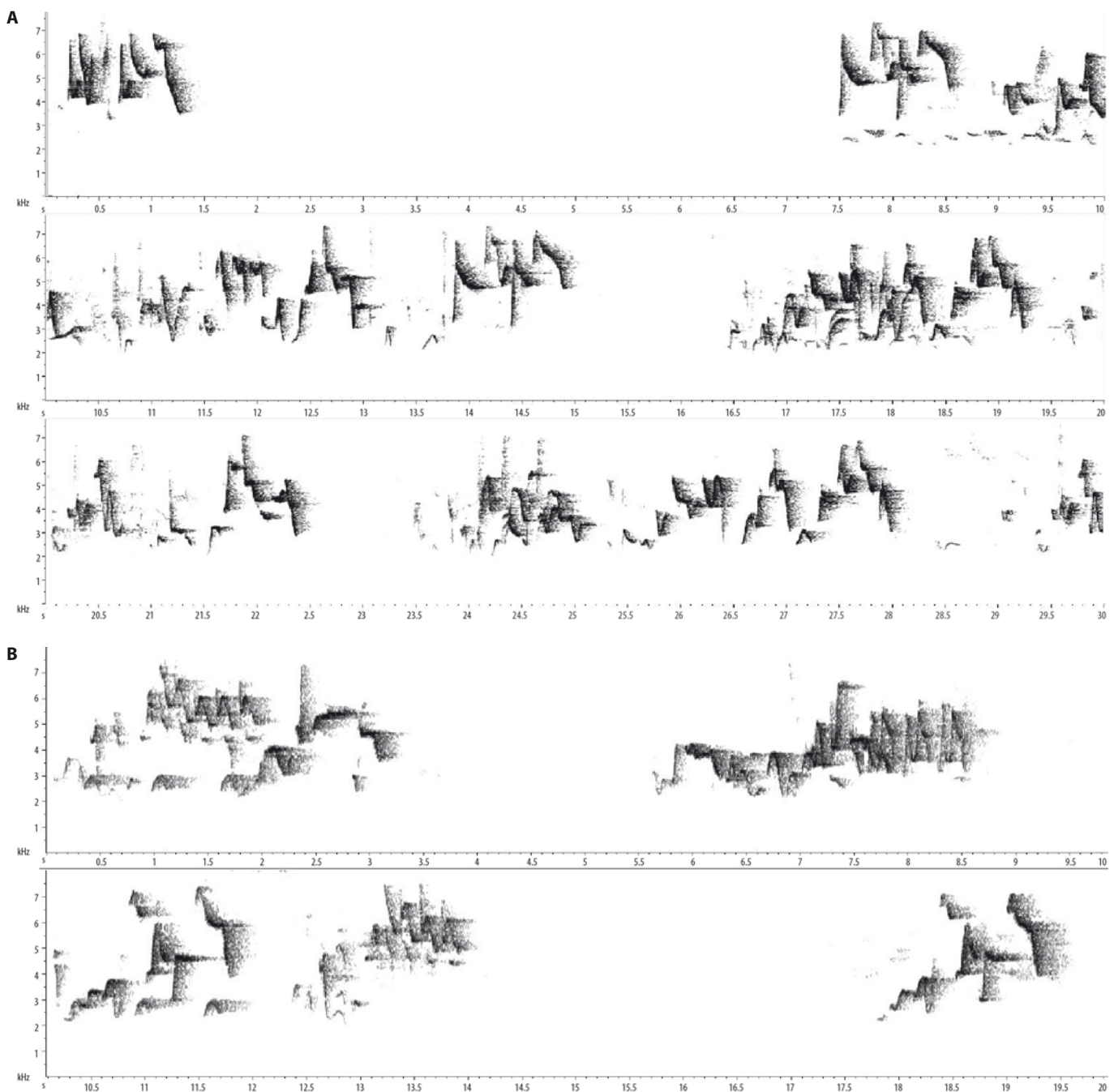


Table 2. Qualitative summary characteristics of plumage and bare-part differences using photographs (see Appendix 1) between some taxa in the Wallacean *Phylloscopus* complex.

Plumage feature	Taxon/island					
	'Selayar Leaf Warbler' (<i>P. sp.</i>)	<i>P. s. sarasinorum</i> (south-west Sulawesi)	<i>P. s. nesophilus</i> (rest of Sulawesi)	<i>P. p. presbytes</i> (Timor)	<i>P. p. floresianus</i> (Flores)	<i>P. rotiensis</i> (Rote)
Crown-stripe	Yes: whitish	Yes: broad, pale yellowish	Absent	Yes: dull, greyish	Indistinct	Yes: pale yellowish
Crown	Olive-green	Dark brown	Brownish	Olive-grey	Grey	Olive-grey
Supercilium	Broad, whitish	Broad, pale yellowish	Narrow, pale yellowish	Pale yellowish	Whitish	Pale yellowish
Underparts	Whitish	Whitish, yellow wash on breast	Yellow-washed	Variably pale yellowish	Bright yellow	Pale yellow
Upperparts	Dull olive-green	Olive-brown	Olive-brown	Olive-green	Olive-green	Olive-brown
Wingbar	Present on at least some individuals (absent on worn birds)	Yes: pale tips to greater coverts	Absent	Variably present	Variably present	Yes: pale cream tips to greater coverts
White in outertail	Yes: seemingly similar extent to <i>sarasinorum</i>	Yes: extensive white on inner webs of two outer rectrices	Absent	Yes: inner webs of outer three feathers entirely white	Yes: inner webs of outer three feathers entirely white	Yes: inner vanes on outermost feathers entirely white
Undertail-coverts	Whitish	Yellowish	Yellowish	Pale yellow	Yellowish	Pale yellow
Bill	Grey; distinctly longer than <i>sarasinorum</i>	Dark with orange lower mandible basally	Dark	Dark with orange lower mandible basally	Dark with orange lower mandible basally	Pinkish-orange mandible; very large (15% longer than <i>P. presbytes</i>)
Legs	Slate-grey	Blackish	Slate-grey	Slate-grey	Slate-grey	Slate-grey

Figure 4. Sonograms of Sulawesi Leaf Warbler *Phylloscopus sarasinorum nesophilus* from [A] the Mekongga Mountains, Southeast Sulawesi (JAE); and [B] Gunung Ambang, North Sulawesi [XC152065, Mike Nelson].



undoubtedly align Selayar birds as most similar to *P. s. sarasinorum*, but the former differ clearly in their whiter underparts, supercilium, crown-stripe and undertail-coverts, greenish, not brownish lateral crown-stripes, lack of any yellow plumage tones, and perhaps larger bill (*cf.* photographs in Plate 1).

Sulawesi Leaf Warbler *Phylloscopus sarasinorum*

In addition to significant bioacoustic differences between the two taxa, *sarasinorum* and *nesophilus* are also morphologically distinct (Table 2). Comparing photographs from online repositories, *sarasinorum* ($n = 26$) always showed pale tips to the greater coverts (even in moulting individuals), forming a single narrow wingbar, while this always appeared absent in *nesophilus* across their range ($n = 30$). Moreover, *sarasinorum* has a darker crown, with much greater contrast between that and the mantle (concolorous in *nesophilus*), a broad pale crown-stripe (absent in *nesophilus*), and white in the inner webs of the two outer rectrices (absent in *nesophilus*; Riley 1918)—

for the latter feature, compare the undertail visible on the bottom row of Plates 1B and 1C. These differences greatly exceed those of other taxa traditionally treated as species (compare, for example, the differences between *P. presbytes* and *P. rotiensis* in Table 2).

DISCUSSION AND TAXONOMIC RECOMMENDATIONS

As is typical for small island taxa (Kroodsma 1985, Baker *et al.* 2006, Morinay *et al.* 2013), the song of Selayar Leaf Warbler is much simplified when compared to its mainland congeners, comprising shorter strophes with fewer elements. These differences are probably a result of founder effects given Selayar's likely colonisation by *Phylloscopus* via south-west Sulawesi (further evidenced by Selayar Leaf Warbler's morphological and bioacoustic affinity to *sarasinorum*). Nonetheless, these differences are substantial. The fact that evidence

Plate 1. Photographs of Sulawesi *Phylloscopus* leaf warblers: (top two images) Selayar Leaf Warbler, Selayar [November 2017, JAE]; (left lower three images) *P. sarasinorum sarasinorum*, Lompobattang [top and middle, November 2017, JAE; bottom, November 2017, MIKE NELSON]; (right lower three images) *P. s. nesophilus* [top, Lore Lindu NP, September 2013, YANN MUZIKA; middle, Lore Lindu NP, November 2017, MIKE NELSON; bottom, Gunung Ambang, September 2018, SCOTT BAKER].



comes from two independent lines of enquiry—morphology and bioacoustics—provides strong support for the view that Selayar Leaf Warbler represents a unique lineage that is likely to be both diagnosably distinct and reproductively isolated. This interpretation is consistent with the principles of integrative taxonomy (Sangster 2018): the existence of morphological differences rules out the possibility that the vocal differences merely represent a local ‘dialect’ and, conversely, the differences in song rule out the possibility that the plumage differences represent a local ‘ecotype’. Thus, while formal taxonomic recognition must await the procurement of specimen material, we recommend that Selayar Leaf Warbler is given species rank when described.

The plumage and bioacoustic differences between *P. s. nesophilus* and *P. s. sarasinorum* are, arguably, even more pronounced. While it is widely acknowledged that plumage differences in leaf warbler species can be subtle (Irwin *et al.* 2001), *P. s. sarasinorum* differs significantly from birds elsewhere on Sulawesi in plumage and song, such that their position as conspecifics—as adopted by all global taxonomies—is unjustified, especially given the absence of discernible plumage and bioacoustic variation in *P. s. nesophilus* throughout the rest of Sulawesi. The plumage differences between the two taxa are far more salient than in near-identical *Phylloscopus* species on the continent that are otherwise deeply divergent vocally and phylogenetically (e.g. the Arctic Warbler complex; Alström *et al.* 2011), while the vocal differences also exceed those of other Wallacean leaf warblers: for example the differences between *P. presbytes* and *P. rotiensis*, the latter having been afforded species rank by global taxonomies (e.g. Clements *et al.* 2019, Gill *et al.* 2020, BirdLife International 2020).

Conservation status

A search of intact native forest at the southernmost end of Selayar (all < 180 m) in January 2020 failed to locate Selayar Leaf Warbler, despite extensive playback of newly acquired sound recordings, suggesting the species may be restricted to elevations above 200 m. Selayar is densely populated on its west coast, while small patches of native forest remain along its more rugged eastern half, reaching a maximum elevation of approximately 597 m (Google Earth); widespread clearance for cashew *Anacardium occidentale* plantations has resulted in very little native forest remaining. In total, 146 km² of forest cover remains above 200 m (Global Forest Watch 2020), suggesting that Selayar Leaf Warbler, if described as a species, may qualify for categorisation as Vulnerable or Endangered under IUCN criteria B1 and B2 (IUCN 2020). Future ornithological surveys on the island should prioritise quantifying this species’ abundance and density, as well as assessing the extent to which it is threatened by habitat loss.

Lompobattang Leaf Warbler is confined to the Lompobattang Massif, occupying the same habitat and range as the forest-dwelling Lompobattang Flycatcher *Ficedula bonthaina* and Southern Hylocitrea *Hylocitrea bonthaina*, both of which are regarded as Endangered under criteria A2c+3c+4c; B1ab(ii,iii,v) and B1ab(ii,iii,v), respectively (BirdLife International 2020). Due to its small range and extensive habitat loss, with an extent of occurrence likely to be under 1,200 km², we would recommend the same threat category for Lompobattang Leaf Warbler, highlighting the need for stronger enforcement to halt the continued, extensive habitat loss and encroachment throughout the Lompobattang Massif.

Sulawesi Leaf Warbler (*sensu stricto*) occupies much of the rest of Sulawesi, where extensive montane forest remains and is unlikely to be under any immediate threat. We would recommend the status Least Concern.

CONCLUSION

The increasing use of acoustic signals to differentiate between *Phylloscopus* warblers is beginning to elucidate their diversity across Wallacea, such that more species are now recognised than ever

before. Further research should focus on other island complexes currently treated as ‘wastebasket species’, in particular those of Island Leaf Warbler *P. mafforensis* and Mountain Leaf Warbler *P. trivirgatus*, which exhibit substantial plumage and vocal variation among populations across their range (Eaton *et al.* 2016).

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Appendix 1. Photographs used for morphological comparison as catalogued on online depositories: ML = Macaulay Library, OBI = Oriental Bird Images.

'Selayar Leaf Warbler' *Phylloscopus* sp. [18 images, comprising at least 5 individuals]

JAE private collection (x 10); AJB private collection (x 8).

Phylloscopus sarasinorum nesophilus [33 images, comprising at least 28 individuals]

ML205509781; ML205255961; ML205222171; ML199370131; ML199360931; ML199360921; ML199360901; ML174585391; ML174316661; ML174316631; ML118972811; ML109173191; ML109173161; ML104572251; ML71039881; ML71039851; ML70689211; ML70689211; OBI81051; OBI53550; OBI53549; OBI39541; OBI30387; Flickr 14021907098; Flickr 10821818; Flickr 5591072369; Flickr 21246837114; Oiseaux.net frpe252267; Oiseaux.net frpe252264; AJB private collection (x 4).

Phylloscopus sarasinorum sarasinorum [40 images, comprising at least 26 individuals]

ML205767801; ML185364511; ML183583761; ML258916211; ML258916181; ML258916071; Flickr 23882528717; Flickr 32334009348; Flickr 37768893965; Flickr 49202524198; Flickr 49203218357; Flickr 21246837114; Flickr 21682719209; Oiseaux.net pava277364; JAE private collection (x 20); AJB private collection (x 6).

Phylloscopus presbytes presbytes [26 images, comprising at least 18 individuals]

ML205145401; ML205769851; ML237611271; ML124032171; ML217828731; ML124032191; ML217828781; ML237611571; ML217828701; ML217828671; ML217828621; ML217681711; ML215389801; ML192843711; ML179258561; ML124032251; ML124032241; ML124032221; ML124032211; ML124032181; ML123174101; ML217681741; OBI159142; OBI120791; Flickr 2175011794; Flickr 22185847148.

Phylloscopus presbytes floris [32 images, comprising at least 25 individuals]

ML205960301; ML204043871; ML207119431; ML43770351; ML209277481; ML67252981; ML67252931; ML43848721; ML43769881; ML43769831; ML94246721; ML94057171; ML179258561; ML122432271; ML122432251; ML115922701; ML115922491; ML117014411; ML117014401; ML117012351; ML256641951; OBI175278; OBI36481; OBI14007; Flickr 41429761931; Flickr 22440254905; Flickr 36854433481; Flickr 36185954073; Flickr 45308958281; Flickr 45260610442; Flickr 42429093181; Flickr 22239152329.

Phylloscopus rotiensis [35 images, comprising at least 23 individuals]

ML205762241; ML191671191; ML191671211; OBI165240; OBI160829; OBI160828; OBI160827; OBI143812; OBI82127; Flickr 44908930114; Flickr 15118754623; Flickr 44908932534; Flickr 15738133735; Flickr 44908399104; Flickr 15736065441; Flickr 15738135425; Flickr 15738134425; Flickr 15552258499; Flickr 44908931604; Flickr 15118751173; Flickr 15736212211; Flickr 23529577338; Flickr 29776037086; Flickr 37381462581; Flickr 49032656631; Flickr 42294320855; Flickr 36186212043; Flickr 36823398512; Flickr 29832039654; Flickr 45294322565; Flickr 36597866550; Flickr 29829923743; Flickr 36597866880; Flickr 28556240608; Flickr 41526642165.
