The avifauna of Menui Island, south-east Sulawesi, Indonesia

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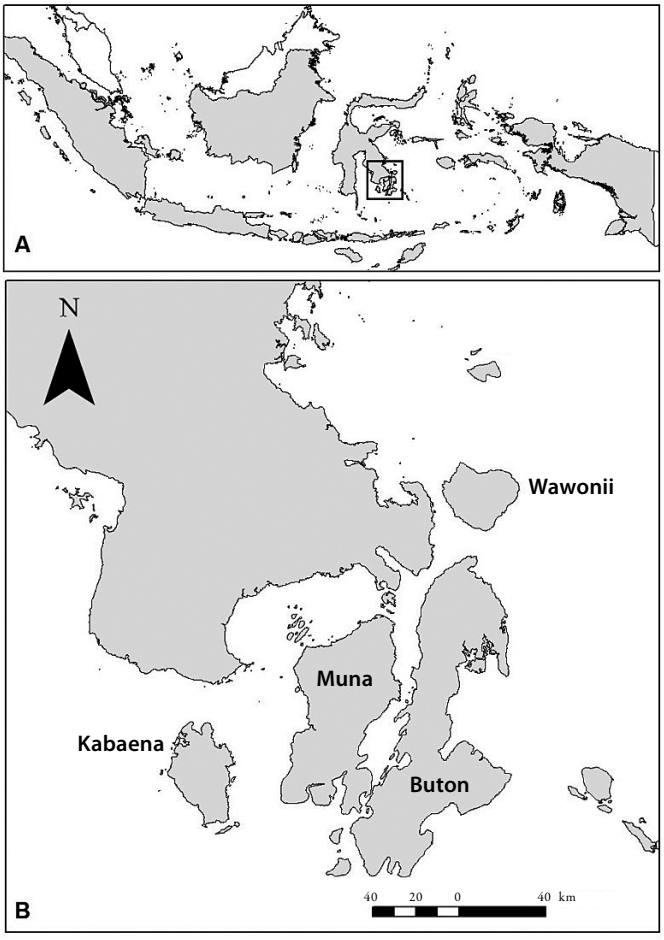
We present the first inventory of the avifauna of Menui, a small (about 9,000 ha) island 53 km off the south-east coast of Sulawesi, Indonesia. Formal mist-netting surveys and road-based transects were carried out on Menui for a period of 10 days during August 2017. These data were supplemented with opportunistic observations. A total of 48 species were recorded (of which 39 were documented with images or sound recordings), including five Wallacean endemics and one species classified as Near Threatened. Given that only two species-specific reports (documenting the presence of Sacred Kingfisher *Todiramphus sanctus* and Moluccan Starling *Aplonis mysolensis*) have previously been published about the avifauna of Menui, records for all other species represent range extensions (although in most cases their presence on Menui was not unexpected). Records of particular interest include an as-yet-undetermined hanging parrot *Loriculus* sp., as well as Metallic Starling *Aplonis metallica*—arguably a first record for the Sulawesi region—and observations of the Near Threatened Lesser Fish Eagle *Icthyophaga humilis*.

INTRODUCTION

Menui (or Manui) is a fairly small (about 9,000 ha) oceanic island comprised of uplifted quaternary coral limestone (Whitten *et al*. 2002) located some 53 km off the east coast of the south-east peninsula of mainland Sulawesi, Indonesia (Figure 1). It is low-lying (maximum altitude 170 m), with the most significant topographic feature being two steep parallel ridges lying on a north-west to south-east axis across the island. The raised terrain of these ridges separates an expanse of largely uninhabited monsoonal dry forest habitat in the south-west (roughly 25% of the island) from the more settled north-east (the remaining 75%). The monsoonal dry forest is a very different climax vegetation type compared with the seasonal rainforest found on south-east Sulawesi's other offshore islands (Whitten *et al*. 2002). The sizeable (about 2,350 ha) tract remaining in the south-west probably persists due to its underlying geology: the topography is very uneven and the area is strewn with fields of large, overgrown limestone boulders. The area is very inaccessible, unsuited to agriculture, and hence remains uncleared. Non-forested areas (covering most of the north-east of the island) comprise agricultural land—main crops include cassava, cloves and coconut—and expanses of scrub (Iqbal & Tepu 2014); shifting 'slash-and-burn' agricultural methods appear to predominate. There are several saltwater lagoons, possibly formed from collapsed karstic limestone formations, of which Danau Tahiea in the west of the island is the largest. There are six coastal and three inland settlements on the island, which has a population of about 12,000 people (Biro Pusat Statistik 2010); there are no protected areas.

Figure 1. Location of Menui in relation to (A) the Indonesian archipelago and (B) mainland south-east Sulawesi and its other offshore islands. Map reproduced with permission of Dr D. G. Tosh.



Menui is the most biogeographically isolated of south-east Sulawesi's large satellite islands, and is also the least ornithologically explored. While detailed distributional and ecological information is lacking for many bird species across the Wallacean region (Noske 2017), field data have been published from most of south-east Sulawesi's other major offshore islands (Hartert 1903, van Bemmel & Voous 1951, White & Bruce 1986, Catterall 1997, Coates & Bishop 1997, Kelly & Marples 2010, Martin *et al*. 2012, 2015, 2017, O'Connell *et al*. 2017). The avifauna of Menui, however, is virtually unknown, with only two single species-specific accounts (Iqbal & Tepu 2014, O'Connell *et al*. 2018) published to date. We report here the results of the first documented general ornithological expedition to Menui, providing a summary of species recorded with comments on notable records.

METHODS

Avifaunal records on Menui were compiled from a combination of formal point count surveys, transect surveys, targeted mist-netting and unstructured observations (including recorded vocalisations). All data were collected between 3 and 12 August 2017 by JM, DOC, DJK, NMM and AK.

Point count transects (Bibby *et al*. 2000) were carried out by JM on roads adjacent to the coast. Point counts were restricted to roads as the extremely rugged limestone terrain did not generally allow for systematic sampling methods. Three transects were surveyed, all in the north of the island between the villages of Ulunambo (3.566°S 123.132°E), Burunga (3.576°S 123.077°E) and Kofalagadi (3.583°S 123.144°E), and included agricultural land, scrub, mangroves and small pockets of dry monsoonal forest.

Each transect covered a distance of 1,500 m and included six survey stations at 300 m intervals. Two transects were surveyed once in the morning (05h30–07h30) and one was surveyed twice in the morning, whilst another was also surveyed once in the afternoon (16h00–17h30). Point counts used an unlimited radius and lasted 10 minutes, beginning immediately on arrival at each survey station; all birds seen and heard were recorded. Point counts were not carried out in rain or heavy mist.

A series of more targeted 1 km road-based line transects was completed by DOC in mixed agricultural land and scrub between 3 and 9 August 2017. These were carried out along the roads around Burunga, starting at the crossroads located at 3.576°S 123.078°E. Three transects were surveyed along the road heading south-east and two along the road heading north-east. Each subsequent 1 km transect started 500 m further along the road from where the last transect ended. Each of these routes was surveyed twice, once in the morning (06h15–08h15) and once in the afternoon (15h15–17h30). The primary purpose of this work was to gather behavioural data from a guild of small passerines (Nectariniidae and Dicaeidae). The observer mostly focused on recording species of these families, but other species were also noted.

Mist-netting was carried out on eight mornings in mangroves and scrub (habitats generally suitable for capturing small passerines) around Burunga by DJK, NMM, AK and DOC as part of a research project on island bird species. Each morning varying combinations of 2.6 m × 9 m, 12 m or 18 m fine mesh mist-nets were used, depending on the vegetation density at each study site. Mist-nets were opened between 06h00 and 10h00 and were checked every 15 minutes.

Opportunistic records were also made by all authors throughout the study period outside the hours of formal survey work, including sightings made during casual exploration of the island. Most of the island was explored, including the dry forests, cultivated land, scrub, mangroves and beaches. Sound recordings were also made opportunistically using a handheld Zoom H1 Recorder, either manually directing the device at a specific bird or by placing the recorder in a suitable location prior to the start of the dawn chorus and retrieving it some three hours later.

Species identification was confirmed using Coates & Bishop (1997), Eaton *et al*. (2016) and del Hoyo *et al*. (2018). Xeno-canto (2018) was used as the reference source for identifying sound recordings. Once survey work was completed, a list of all species recorded on Menui was compiled, following the taxonomy of HBW & BirdLife International (2017), with the endemism and conservation status of each species being noted. Wallacean endemics were defined following Myers *et al*. (2000). Relative abundance categories for each species were assigned by adapting slightly the methods of Martin *et al*. (2012) and O'Connell *et al*. (2017). These categories were: abundant—recorded several times each day in suitable habitat; common—recorded at least once per day; fairly common—recorded at least one day in two; locally common—recorded daily, but restricted to specific habitats; uncommon— recorded less than five or six times in total; and rare—known only from one or two records. Additionally, following Lees *et al*. (2012), we collated images of as many as possible of the species we saw on Menui and uploaded them onto the Internet Bird Collection (Lynx Edicions 2018). When it had not been possible to obtain an image, sound recordings if available were uploaded to this depositary in their place.

RESULTS

The survey effort on Menui amounted to 293 hours of observational data (based on point counts, transects and opportunistic record keeping) and 32 hours of mist-netting. A total of 48 bird species were recorded (see Table 1), including five endemic to the Wallacea biodiversity hotspot and a further six which are endemic to Indonesia. One species, Lesser Fish Eagle *Icthyophaga humilis*, is classified as Near Threatened (BirdLife International 2018a). An image or acoustic evidence of occurrence was obtained for 39 species and uploaded onto our Internet Bird Collection account. Additional information concerning observations of notable records is provided below.

Sulawesi Scops Owl *Otus manadensis*

This Wallacean endemic is rare on the island, it was never directly observed but was heard vocalising twice from different areas of coastal scrub; one recording (IBC 1547710) can be accessed online. The individuals heard on Menui are presumed to be the nominate race *O. m. manadensis*, which inhabits mainland Sulawesi and several large islands off the south and south-east coasts, notably Salayar, Muna and Buton (Coates & Bishop 1997, Holt *et al*. 2018). However, it is interesting to note that Kaledupa in the Wakatobi (Tukangbesi) archipelago, a group of small, isolated, oceanic islands where the species is known to occur, supports an endemic subspecies, *kalidupae* (Holt *et al*. 2018). Given that we made no visual observations of Sulawesi Scops Owl on Menui, and vocalisations were recognisably similar to calls made by individuals on the mainland, we have no evidence to suggest that populations here are taxonomically distinct. However, the isolation of Menui and the presence of a distinct subspecies on another isolated oceanic island suggest that the status of the species here would benefit from further investigation.

Sulawesi Serpent Eagle *Spilornis rufipectus*

A Wallacean endemic which is rare on Menui and only observed on one occasion, perched in a tree between the villages of Burunga and Ulunambo (IBC 1516910). The proximity of Menui to Sulawesi's south-east peninsula might suggest that populations here would be the nominate race *S. r. rufipectus* which inhabits mainland Sulawesi as well as the islands of Salayar, Muna and Buton (Coates & Bishop 1997, Clark *et al*. 2018). However, the noticeably bold barring on the underparts of the bird we observed compared with birds observed on the mainland and on Buton, suggests that the race on Menui could be *S. r. sulaensis*. The fact that Menui supports several other species found on the Banggai and Sula Islands which are also absent from the islands of south-east Sulawesi lends further support to this possibility.

Lesser Fish Eagle *Icthyophaga humilis* NT

A rare species on Menui; one individual was observed on 8 August 2017 flying over scrub close to the coast, with a prior record (heard only) from the beach at Burunga on 7 August.

Hanging Parrot *Loriculus* sp.

An unidentified species of hanging parrot was observed on three occasions at three different locations (two observations of a single bird, one observation of two). The identity of the species on Menui remains enigmatic. All birds seen were almost entirely comparable in morphology and colouration to Sulawesi Hanging Parrot *Loriculus stigmatus* except that the forehead was vivid orange rather than red (IBC 1518176).

There are several possibilities regarding the identity of these birds. Their plumage closely matches that of the Orange-fronted Hanging Parrot *L. aurantiifrons*, a Papuan species not previously reported in Wallacea (Forshaw & Knight 2010, Collar & Boesman 2018). Visual estimates of body length suggested that the Menui birds were more similar in size to Sulawesi Hanging Parrot (15 cm) than Orange-fronted (10 cm), although we acknowledge that accurate estimation of size in the field can be difficult. If Orange-fronted is present on Menui, it remains to be determined whether its presence is the result of natural colonisation (unlikely, because the nearest known population is on the Raja Ampat Islands 760 km

Table 1. Summary of bird species recorded on Menui Island in August 2017.
Taxonomy follows HBW & BirdLife International (2017). Species marked * are endemic to the Wallacean biodiversity hotspot (Myers *et al.* 2000). Species marked ‡ are endemic to Indonesia. Species marked (In) are introduced to the study area.
Abundance estimates are denoted as follows: A = abundant; C = common; Lc = locally common; Fc = fairly common; Lfc = locally fairly common; U = uncommon; R = rare; H = heard only; M = migrant.
Initials in the Observer(s) column indicate the authors who recorded each species. Sev = observed by three or more of the authors.
IBC reference numbers correspond with the species images or sound recordings uploaded to the Internet Bird Collection (Lynx Edicions 2018).

Species	Abundance	Observer(s)	IBC reference	Species	Abundance	Observer(s)	IBC reference
Eastern Spotted Dove *Spilopelia chinensis* (In)	C	Sev	IBC1518180	Oriental Dollarbird *Eurystomus orientalis*	U	JM, DOC	IBC1516920
Grey-capped Emerald Dove *Chalcophaps indica*	A	Sev	IBC1516927	Collared Kingfisher *Todiramphus chloris*	C	Sev	IBC1516911
Pink-necked Green Pigeon *Treron vernans*	Fc	Sev	IBC1516907	Sacred Kingfisher *Todiramphus sanctus*	C (M)	Sev	IBC1516909
Grey-cheeked Green Pigeon *Treron griseicauda* ‡	Fc	Sev	IBC1516906	Spotted Kestrel *Falco moluccensis* ‡	Fc	JM, DOC	
Blue-tailed Imperial Pigeon *Ducula concinna* ‡	A	JM	IBC1516912	Hanging Parrot *Loriculus* sp.	U	JM, DOC	IBC1518176
Black-naped Fruit Dove *Ptilinopus melanospilus*	A	Sev	IBC1518182	Great-billed Parrot *Tanygnathus megalorynchos* ‡	C	Sev	IBC1516898
Grey-rumped Treeswift *Hemiprocne longipennis*	R	JM		Elegant Pitta *Pitta elegans* *	C (H)	JM, DOC	IBC1537013
Glossy Swiftlet *Collocalia esculenta*	A	Sev	IBC1518181	Black-naped Oriole *Oriolus chinensis*	U	Sev	IBC1516921
Uniform Swiftlet *Aerodramus vanikorensis*	A	JM	IBC1516923	White-breasted Woodswallow *Artamus leucoryn*	R	JM	
Eastern Koel *Eudynamys melanorhynchus*	A	Sev	IBC1537332	Black-faced Cuckooshrike *Coracina novaehollandiae*	R (M)	JM	IBC1516915
Green-backed Heron *Butorides striata*	Lc	Sev	IBC1516916	White-rumped Triller *Lalage leucopygialis* *	Fc	JM, DOC	IBC1518179
Great-billed Heron *Ardea sumatrana*	Fc	JM	IBC1516901	Hair-crested Drongo *Dicrurus hottentottus*	A	Sev	IBC1516899
Little Egret *Egretta garzetta*	R	JM	IBC1518588	Island Monarch *Monarcha cinerascens*	A	Sev	IBC1518184
Little Pied Cormorant *Microcarbo melanoleucos*	R	JM	IBC1518183	House Swallow *Hirundo javanica*	C	Sev	
Common Sandpiper *Actitis hypoleucos*	Lfc	Sev	IBC1516925	Barn Swallow *Hirundo rustica*	R (M)	Sev	
Barred Buttonquail *Turnix suscitator*	Fc	Sev	IBC1516926	Metallic Starling *Aplonis metallica*	R	JM	IBC1516900
Australian Pratincole *Stiltia isabella*	R	JM	IBC1516902	Moluccan Starling *Aplonis mysolensis* ‡	A	Sev	IBC1516905
Sulawesi Scops Owl *Otus manadensis* *	R (H)	JM, DOC	IBC1547710	Short-tailed Starling *Aplonis minor*	R	Sev	IBC1516917
Osprey *Pandion haliaetus*	Lfc	Sev	IBC1516908	Grey-sided Flowerpecker *Dicaeum celebicum* *	C	Sev	IBC1516922
Sulawesi Serpent Eagle *Spilornis rufipectus* *	R	Sev	IBC1516910	Brown-throated Sunbird *Anthreptes malacensis*	A	Sev	IBC1516935
White-bellied Sea Eagle *Haliaeetus leucogaster*	U	Sev	IBC1516924	Black Sunbird *Leptocoma aspasia*	A	Sev	IBC1516933
Lesser Fish Eagle *Icthyophaga humilis* NT	R	JM, NM		Olive-backed Sunbird *Cinnyris jugularis*	C	Sev	IBC1516936
Brahminy Kite *Haliastur indus*	U	Sev		Black-faced Munia *Lonchura molucca* ‡	Fc	Sev	IBC1516918
Rainbow Bee-eater *Merops ornatus*	Fc	Sev	IBC1516913	Eurasian Tree Sparrow *Passer montanus*	Lc	Sev	

to the east) or the result of escapees from the Indonesian cagebird trade, which has been responsible for the assisted colonisation of bird species in many localities (e.g. Fitzsimons *et al*. 2011). Another possibility is that these birds represent a variant of the mainland population of Sulawesi Hanging Parrot, in which reproductive isolation has led to minor differences in plumage colour.

Elegant Pitta *Pitta elegans*

A species endemic to the Lesser Sunda islands and south Maluku, although also infrequently reported from the Sulawesi region (BirdLife International 2018b, Erritzoe & de Juana 2018). It has been reported from Buton (Martin *et al*. 2017), the Banggai and Sula Islands (Erritzoe & de Juana 2018), Tangkoko Reserve in North Sulawesi and as far north as Sangihe (Verbelen *et al*. 2017). Hence its presence on Menui is not unexpected, and indeed it appears to be a common species here. Unfortunately no visual records were obtained during fieldwork, although vocalisations were positively identified on a daily basis from several point count surveys and soundscape recordings in the scrub (IBC 1537013).

Black-faced Cuckooshrike *Coracina novaehollandiae*

An austral winter migrant. Three individuals were observed on one occasion in an area of mangroves in the north-east tip of Menui on 6 August 2017 (IBC 1516915). This observation is a significant range extension for the species; previously it was only known to occur on the Banggai Islands (and Sula Islands) in the Sulawesi region, about 200 km to the north (Eaton *et al*. 2016, Taylor & Bonan 2018). It has never been detected on any of the large islands off the south and south-east coasts of Sulawesi, despite significant survey work on several of them (e.g. Martin *et al*. 2012, O'Connell *et al*. 2017).

White-rumped Triller *Lalage leucopygialis*

A Wallacean endemic; fairly common on Menui, it was frequently observed singly and in pairs in small pockets of forest, foraging in tree crowns. It is known to occur on many of Sulawesi's offshore islands, both large and small (Kelly & Marples 2010, Taylor 2018).

Metallic Starling *Aplonis metallica*

A rare species on Menui; a flock of some 20 birds, including juveniles, was seen in low scrub adjacent to a coastal lagoon (IBC 1516900), and another flock of 3–4 birds was observed in mangroves. This record appears to be new evidence of the species in the Sulawesi region, the nearest known population being in Taliabu, Sula Islands, about 220 km to the north-east (Craig & Feare 2018a).

Moluccan Starling *Aplonis mysolensis*

An abundant species on Menui, it was recorded regularly across the island, mostly in low scrub, and was by far the commonest of the three *Aplonis* species observed—12 individuals were captured in the mist-netting surveys. The population here appears to be an outlier of its overall distribution: it occurs widely throughout Maluku and the west Papuan islands but in the Sulawesi region it is only found in the Banggai and Sula islands (Taliabu), about 200 km to the north (Eaton *et al* 2016, Craig & Feare 2018b), being absent from the major islands off south-east Sulawesi (e.g. Martin *et al*. 2012, O'Connell *et al*. 2017). The Moluccan Starling population on Menui was previously reported by Iqbal & Tepu (2014); given its isolation it may be interesting to complete a genetic analysis to determine its taxonomic relationship with other populations.

Grey-sided Flowerpecker *Dicaeum celebicum*
This Wallacean endemic is a common species on Menui, frequently observed in scrub feeding alongside Brown-throated Sunbird *Anthreptes malacensis* and Black Sunbird *Leptocoma aspasia*. It is found on many other islands off the coast of south-east Sulawesi (Kelly & Marples 2010, Martin *et al*. 2012, O'Connell *et al*. 2017). Due to the separation of some of these island populations, there is ongoing discussion of the taxonomy of this species (Cheke & Mann 2018) and full species status has been proposed for some existing subspecies (Kelly *et al*. 2014). Future genetic analysis will hopefully determine which subspecies (or species) is present on Menui.

DISCUSSION

Our results are the first detailed account of the avifauna of Menui. Only Moluccan Starling and Sacred Kingfisher had been previously reported, by, respectively, Iqbal & Tepu (2014) and O'Connell *et al*. (2018). However, considering that the majority of species recorded are present on mainland south-east Sulawesi (Eaton *et al*. 2016, del Hoyo *et al*. 2018), most of them are not unexpected, with the notable exceptions of Black-faced Cuckooshrike and Metallic Starling. The avifauna of Menui appears to be somewhat typical of a fairly small, isolated Wallacean island. Conforming with the theory of island biogeography (MacArthur & Wilson 1967), its avifauna is relatively depauperate compared to its larger neighbours, with 48 species detected across its 9,000 ha compared with 160 on Buton, about 560,000 ha, (Martin *et al*. 2012, 2015, 2017), 89 on Kabaena, about 87,000 ha, (O'Connell *et al*. 2017) and 71 on Wawonii (Wowoni), about 65,000 ha (O'Connell 2019). The avifauna of Menui shows a lower incidence of endemism than neighbouring islands: 10% of species detected here are endemic to the Wallacean biodiversity hotspot, compared with 33% on Buton and 30% on Kabaena. Many specialised forest endemics may have failed to colonise smaller, more isolated islands which lack substantial forest cover; however, our results also show that a small number of Wallacean endemics appear to be well enough adapted to do so. For example, White-rumped Triller and Grey-sided Flowerpecker are regularly sighted both on Menui and the small, isolated Wakatobi Islands (Kelly & Marples 2010).

Perhaps surprisingly, *Zosterops* species—a genus often considered classic island colonisers (Moyle *et al*. 2009)—are conspicuous by their absence from Menui. The Lemon-bellied White-eye *Z. chloris* is present on many other small, isolated islands in the Sulawesi region (Coates & Bishop 1997, Kelly & Marples 2010, van Balen 2018); the reason why it does not seem to have been able to colonise Menui remains uncertain. It is possible that the species does occur on Menui but undertakes local post-breeding movements in the June–September dry season, as has been noted on some islands in the Lesser Sundas (van Balen 2018), thus explaining its absence during our visit. However, the distance from Menui to the Sulawesi mainland (about 50 km) is considerably greater than the examples of local movements described elsewhere. Additionally, such movements have not been documented in the course of extensive fieldwork focused on *Zosterops* spp. on other offshore islands in south-east Sulawesi (O'Connell *et al*. 2019). We therefore believe it to be more likely that *Z. chloris* has failed to colonise Menui.

Menui's geographical position, closer to the Banggai Islands, Sula Islands and Maluku than any other part of south-east Sulawesi, coupled with its different climax vegetation, means that it does support several species typical of east Wallacea which are either rare or absent elsewhere in the Sulawesi region. Menui therefore makes an important contribution to the overall diversity of the region, in the shape of the Black-faced Cuckooshrike, Metallic Starling and Moluccan Starling, which regionally were previously known to occur only in the Banggai and Sula Island groups. As with the unidentified *Loriculus* sp., the presence of either *Aplonis* species could be the result of escaped captive birds—members of this genus are known to be popular in the cagebird trade (Harris *et al*. 2015). However, as these species occur naturally on the relatively close Banggai and Sula Islands, and as both have been able to colonise isolated islands elsewhere in their range (Craig & Feare 2018a,b), natural colonisation of Menui would appear plausible. While the results of this study provide an effective overview of the avifauna of Menui, it is important to note their limitations. The ten days of survey effort here would have been insufficient either to detect all species occurring on the island or to develop robust abundance estimates for the species that were detected. Certain habitats were surveyed more extensively than others during our fieldwork, and this may have led to bias in our results. For example, the inaccessibility of the more heavily forested south-west meant that proportionally less survey effort was directed there. Furthermore, little effort was expended on surveying pelagic birds in the waters surrounding Menui, although there are likely to be several species there. For example, a single unidentified frigatebird *Fregata* sp. was observed circling over the island, and an offshore seabird survey made prior to our visit recorded Brown Booby *Sula leucogaster* and Greater Crested Tern *Thalasseus bergii* (Iqbal 2015). Given that our surveys were restricted to August, our species inventory may also lack many boreal passage migrants and wintering species. Further fieldwork on Menui focusing on dry forests and offshore pelagic habitats, as well as being conducted in months (September–March) when boreal migrants may be present, is therefore recommended. In addition, it would be valuable for future fieldwork to investigate Menui's two satellite islands, Padea-besar and Padea-kecil, which lie about 5 km and 4 km off Menui's north coast. The avifauna of both of these islands remains entirely unknown at present. Observations from the Menui ferry indicate that Padea-besar is largely covered in palm trees, with areas of coastal mangroves and beaches, while satellite images suggest that both islands are surrounded by extensive reefs. Depending on the extent of their degradation, these habitats may provide important sanctuaries for coastal species, and an assessment of their conservation value could yield valuable results.

Finally, we draw attention to conservation issues on Menui. While relatively substantial tracts of forests remain in the inaccessible south-west of the island, the remainder is intensively cultivated and only a few fragments of forest remain. It also seems that a growing island population, coupled with better transport links to the mainland (allowing for the sale of timber), are increasing deforestation pressures on the south-west forests—chainsaws were heard each time we visited this area. This is concerning, as the dry monsoonal forests found on Menui are unique on the islands of south-east Sulawesi, and are key habitats for many species, such as the Great-billed Parrot *Tanygnathus megalorynchos*, which relies on tall deciduous trees for nesting sites (Collar *et al*. 2018). This may also be the case with the unidentified hanging parrot on Menui. However, these forests are not extensive. The main south-west tract is only about 2,350 ha and even limited deforestation could substantially reduce and fragment the remaining area. The cagebird trade may also be a threat to Menui's avifauna. Residents reported that birds were captured and transported to the mainland, and a tethered Great-billed Parrot was observed on the ferry when we left the island. Given that Menui supports species not present elsewhere in south-east Sulawesi, we highlight the quantification of deforestation rates and cagebird trapping here as important monitoring objectives for the near future.

ACKNOWLEDGEMENTS

We thank Kementerian Riset, Teknologi, Dan Pendidikan Tinggi and the Indonesian Institute of Science for providing the necessary permits and approvals for this study (Permits 159/SIP/FRP/E5/Fit.KIVII/2017 and 160/SIP/FRP/E5/Fit.KIVII/2017). We thank two anonymous reviewers for their helpful and constructive comments. We also thank Operation Wallacea for providing us with logistical support while working in Indonesia, and James Eaton, Dave Bakewell, Nial Moores and Nick Brickle for help with species identification. Finally, we thank the residents of Menui for their assistance and hospitality.

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