

# New ornithological records from Buru and Seram, south Maluku, Indonesia, 1995–2012

ANDREW HART REEVE, TRI HARYOKO, MICHAEL KØIE POULSEN, PIERRE-HENRI FABRE & KNUD ANDREAS JØNSSON

Although the islands of Buru and Seram in eastern Indonesia support unique avifaunas with many endemic and near-endemic species, these have been little studied and are poorly known. Basic data on the distribution, abundance and habitat use of these species are urgently needed to better understand their ecology and conservation needs. Here we present new information obtained during three ornithological expeditions to Buru (October–December 1995, May–June 1996, January–February 2011) and one to Seram (January–February 2012). Our records extend the known altitudinal ranges of 32 species, including rare or threatened endemics such as Salmon-crested Cockatoo *Cacatua moluccensis*, Purple-naped Lory *Lorius domicella* and Seram Thrush *Zoothera joiceyi*, and distinctive endemic subspecies of Variable Kingfisher *Ceyx lepidus* and Red-bellied Pitta *Pitta erythrogaster*. Notes are included on all species encountered that are endemic to south Maluku or have a designated IUCN threat category of Near Threatened or higher, including a new observation of the Endangered, rarely recorded Rufous-throated White-eye *Madanga ruficollis*. Although our records significantly improve understanding of the distribution of Buru and Seram's birds, they also highlight the need for further fieldwork on the upper slopes of the islands' highest mountains, particularly the unexplored high plateau of Buru's Gn Kapalat Mada.

## INTRODUCTION

The large Maluku islands of Buru, area 9,505 km<sup>2</sup>, maximum altitude 2,735 m, and Seram, area 18,410 km<sup>2</sup>, maximum altitude 3,027 m, lie within the biogeographical region of Wallacea, the transition zone between faunas of Asian and Australian origin, which is a well known hotspot of avian endemism (Wallace 1869, White & Bruce 1986, Coates & Bishop 1997). Both islands are designated Endemic Bird Areas (Stattersfield *et al.* 1998), with avifaunas characterised by a high proportion of range-restricted species including 10 endemics on Buru and 14 on Seram and its small satellite islands (Stattersfield *et al.* 1998). Recent work indicates that some endemic subspecies should be raised to species level (Rheindt & Hutchinson 2007b, Andersen *et al.* 2013, Collar *et al.* 2013, Irestedt *et al.* 2013) and a new species of owl has been described from Seram (Jonsson *et al.* 2013).

Despite the obvious ornithological interest of these islands, knowledge about the distribution and status of their birds remains very incomplete. Data obtained from the ornithological exploration of Buru and Seram up to the 1980s were summarised by White & Bruce (1986). In the following years, the Operation Raleigh Expedition visited Seram from July to September 1987 (Bowler & Taylor 1989, Bowler 2009), carrying out fieldwork in Manusela National Park including Gn Kobipoto and Gn Binaiya—reaching 2,850 m on the latter. In November 1989–January 1990 the Manchester Indonesia Islands Expedition carried out fieldwork on both islands (Marsden 1992, Jepson 1993, Marsden *et al.* 1997, Marsden & Fielding 1999, Jones *et al.* 2001, 2003). On Buru work was carried out on the north coast and inland to Danau Rana (770 m) in the centre of the island, and surveys were done up to 1,200 m. Data gathered by these expeditions were a major source of the information on Buru and Seram in Coates & Bishop (1997), the key ornithological reference for the region. From the mid-1990s to the present, we are aware of two large-scale projects on the islands. In 1995–1996, BirdLife International's Indonesia Programme surveyed Buru, working at both coastal and inland forest sites, and reaching 1,760 m on Gn Kapalat Mada (Poulsen & Lambert 2000). Their records broadened the known altitudinal ranges of many species. Cambridge University's Wae Bula Expedition to north-east Seram in July–September 1996 carried out the first major ornithological survey outside Manusela National Park (Isherwood *et al.* 1997, 1998, Ekstrom & Isherwood 2000). More recently, Rheindt & Hutchinson (2007a,b), Arndt & Persullessy (2010) and Lansley *et al.* (2011) have made shorter visits to both islands, as

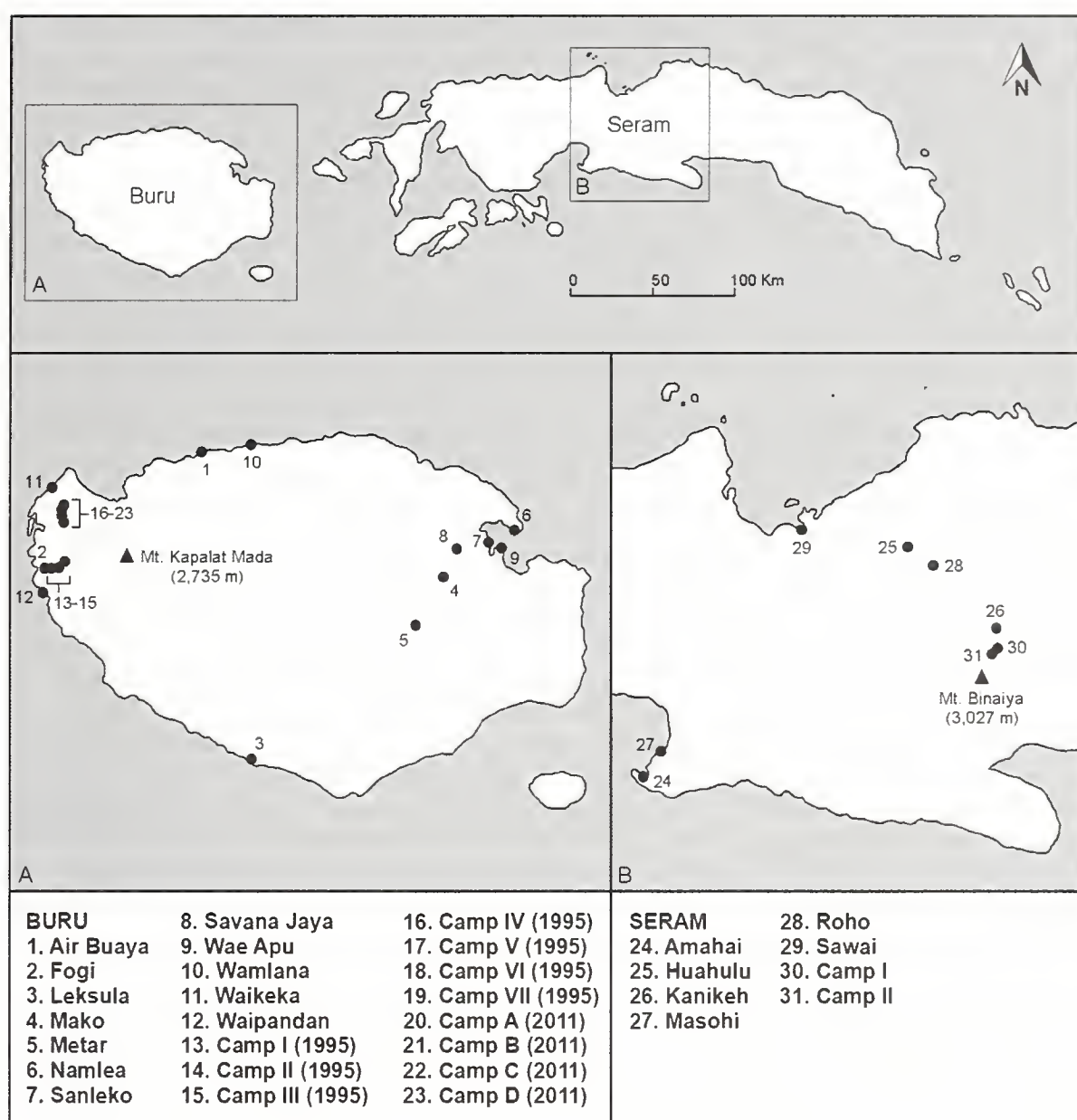
have birdwatching tour groups, notably recording the endemic Black-lored Parrot *Tanygnathus gramineus* on Buru (Robson 2013, 2014).

Our observations from expeditions to Buru and Seram made between 1995 and 2012 are reviewed here, including data from fieldwork on Buru with BirdLife International's Indonesia Programme in 1995–1996 not previously reported in Poulsen & Lambert (2000) or Robson (1996, 1997). In January–February 2011, a team from the Natural History Museum of Denmark and the Museum Zoologicum Bogoriense, Indonesia, conducted fieldwork on Buru, inland from Waikeka on Gn Kapalat Mada (2,729 m). This was a collecting expedition aimed primarily at obtaining tissue samples and skins for biogeographic studies (e.g. Fabre *et al.* 2014, Jonsson *et al.* 2014). The team returned to visit Seram in January–March 2012, with the same main objectives as in 2011, but with additional focus on collecting bird community structure data. Work was carried out on Gn Binaiya (3,027 m) in Manusela National Park and at a site on the north coast. We report many new altitudinal records, some of which significantly change the understanding of species distribution on Buru and Seram, together with notes pertaining to all southern Maluku endemic and threatened species encountered in order to address the currently limited knowledge of these islands' unique avifaunas.

## STUDY SITES AND METHODS

### *Buru: 1995–1996*

Yan Persullessy (YP), David Purmiasa (DP) and MKP participated in the British Ornithologists' Union/BirdLife International 1994–1996 Maluku Expedition to identify potential protected areas, making three visits to Buru in 1995 and 1996. In October–November 1995 the island was circumnavigated, mostly by canoe, and ornithological surveys carried out from 0–1,340 m, using point counts and mist-nets around three forest camps inland from Fogi village (03.336°S 126.043°E) in the foothills of Gn Kapalat Mada. Trapped birds were photographed and released. Altitude was measured with a Garmin GPS, as on all subsequent expeditions to Buru and Seram. Surveys covered an altitudinal range of a few hundred metres at each site: Camp I (03.331°S 126.055°E) in logged forest at 570 m (13–20 October) about 4 km inland from the west coast; Camp II (03.328°S 126.071°E) in logged forest at 670 m (21–23 October) about 2 km north-east of Camp I; Camp III (03.320°S 126.080°E) the boundary of logged forest and primary



**Figure 1.** Map of Buru and Seram showing localities mentioned in the text.

montane forest at 950 m (24–30 October) about 1.5 km north-east of Camp II. The team returned to Gn Kapalat Mada (22 November–13 December 1995) and worked at four forest camps inland from Waikeka village (03.148°S 126.058°E) on the north-west coast 20 km north of Fogi. Surveys from 0–1,760 m again used point counts and mist-nets: Camp IV (03.192°S 126.081°E) in logged forest at 300 m (26–28 November), about 5.5 km south-east of Waikeka; Camp V (03.207°S 126.077°E) in logged forest at 680 m (29 November–2 December) 2 km south-west of Camp IV; Camp VI (03.217°S 126.078°E) in primary montane forest at 1,100 m (3–5 December) about 1 km south of Camp V; Camp VII (03.230°S 126.082°E) in primary montane forest at 1,460 m (6–8 December) 1.5 km south of Camp VI. A base in Waikeka (10–12 December) was used to survey secondary forest and cultivated areas (0–100 m). Survey work during the third visit to Buru, from 28 May to 10 June 1996, focused on mangrove habitat and *Melaleuca*-dominated monsoon forest in the east of the island. Figure 1 shows important sites visited on our expeditions.

#### **Buru: 26 January–16 February 2011**

KAJ, TH, PHF and MKP participated in this collecting expedition, during which birds captured in mist-nets were photographed, measured and prepared as study skins, with tissue samples being taken; specimens are held at Museum Zoologicum Bogoriense (Indonesia) and the Natural History Museum of Denmark. This protocol was repeated during the 2012 Seram expedition (see below). During the visit, precipitation was relatively light, with irregular showers and heavy rain on only a few occasions. From

Waikeka, the 1995 expedition route up the north-west slopes of Gn Kapalat Mada was followed closely and mist-nets were set near four camp sites: Camp A (03.192°S 126.078°E) an old logging camp in secondary growth with many palm trees at 230 m (30–31 January)—secondary growth gave way to primary forest between Camps A and B, and the remaining fieldwork was carried out in undisturbed habitat; Camp B (03.192°S 126.078°E) at 690 m (2–3 February) about 1.5 km south of Camp A; Camp C (03.217°S 126.075°E) at 1,100 m (4–7 February) 1 km south of Camp B; Camp D (03.226°S 126.079°E) in cloud forest with heavy moss cover on the trees at 1,440 m (7–14 February) about 1 km south-east of Camp C. Attempts to reach the high plateau above 2,000 m failed, as steep cliffs impeded further progress and to the best of our knowledge this area remains unexplored.

#### **Seram: 30 January–23 February 2012**

All authors participated in the 2012 expedition during north Seram's rainy season with the main focus on collecting skins and tissue samples, although AHR carried out surveys each morning and afternoon at Camps I and II. From 31 January to 3 February, mist-nets were set up between 50–200 m in the hills behind Sawai village (02.961°S 129.201°E) on the north coast of central Seram. This area, lying close to the boundary of Manusela National Park, consisted of disturbed forest, interspersed with gardens planted with fruit trees, mostly durian; but many native tree species remained, with dense canopy cover in some places.

The second field site, Camp I (03.138°S 129.482°E) at 1,000 m in Manusela National Park on the lower slopes of Gn Binaiya, was



reached via the villages of Huahulu, Roho and Kanikeh. It is an area of primary forest crossed by many streams—some wide and deep—several km south of Kanikeh. Between 6 and 11 February, mist-nets were set up between 950–1,050 m and between 1,300–1,350 m. Surveys were made in a 1 km<sup>2</sup> area south of Camp I, mostly at 800–1,000 m, from February 7–11. KAJ and MKP departed on 12 February, leading to reduced mist-netting effort at Camp II (03.145°S 129.474°E) at 1,350 m, about 1.5 km south-west of Camp I (13–17 February). The weather was cool and very wet, with heavy rainfall every day. Surveys and mist-netting were concentrated on a single main trail from the camp to the summit, mostly below 1,630 m, with a few visits and very limited mist-netting up to about 1,900 m. The terrain here is steep, and covered by primary montane forest. Access to 3,000 m is possible on Gn Binaiya, but to our knowledge no extensive surveys have been undertaken above 2,000 m.

## RESULTS

The following notes include all species encountered in the field that are endemic to south Maluku or have a designated IUCN threat category of Near Threatened or higher, as well as other species for which novel data was collected. The present threat status as evaluated by BirdLife International (2014) is given next to the relevant species name. Subspecies are named (where known) for polytypic species, as many are highly distinctive; subspecies-level taxonomy follows del Hoyo *et al.* (1992–2011). The following records expand the known altitudinal ranges of the birds of Buru and Seram, contribute to knowledge of historical population trends, regional movements, and the occurrence of scarce species, document unusually high counts of some species, describe little-known plumage variations and report the establishment of introduced species.

### Buru species accounts

#### Moluccan Megapode *Eulipoa wallacei* (Vulnerable)

Near-endemic to Maluku. On 23–24 November 1995, MKP was shown 15 newly collected eggs at nesting grounds on sandy beaches at Air Buaya (see Figure 1). The collectors claimed to take 10–20 eggs daily and local people in Wamlana also reported collecting eggs. These localities were not visited in 2011, and no further observations were made.

#### Cattle Egret *Bubulcus ibis coromandus*

In 1995, two were recorded in Fogi village on 13 October; one in Waieka on 25 November and two between Wae Apu and Mako on 13 December. In 1996, 20 were observed at Wae Apu on 6 June and five at Mako on 9 June. The species was not seen in 2011, but little time was spent in suitable habitat. The Manchester Indonesia Islands Expedition recorded more than 20 birds at two sites in December 1989 (Jepson 1993); the only previous record is a note that it was collected by Denin on 30 October 1913 (Siebers 1930). The paucity of old records may indicate that this species has increased in the past century.

#### Lesser Frigatebird *Fregata ariel ariel*

Large flocks flew east past Leksula (3.781°S 126.563°E) on 10 and 11 October 1995—about 1,000 birds were counted each day, passing mainly between 16h30 and 18h45. About 75% were adult males and flocks included about 20 Great Frigatebirds *F. minor*. In 1921 Toxopeus recorded large numbers of Lesser Frigatebirds passing Leksula heading for a roost on Nusa Eglaten, a small island just east of Leksula, and was informed by local people that birds had previously roosted on Batu Kabal, another small island nearby (Siebers 1930). It appears that the species continued to roost in large numbers on islands east of Leksula, at least up to 1995.

#### Eagle sp. *Hieraetus* or *Lophotriorchis* sp.

In 1995 unidentified eagles were seen inland from Fogi (four days), and inland from Waieka (two days). All these birds were very similar in appearance to adult light-phase Booted Eagle *Hieraetus pennatus*, a species unknown from Wallacea. The 1989 Manchester Expedition also recorded an unidentified eagle on Buru (Jepson 1993), which was probably the same species—in this case, juvenile Rufous-bellied Eagle *Lophotriorchis kienerii* was suggested. Small eagles seen on Halmahera in 1989 and 1994, and on Seram in 1996, have been identified as Little Eagle *Hieraetus morphnoides* (King 1990, Coates & Bishop 1997). The Little Eagle subspecies *weiskei* found in New Guinea and Maluku is now considered to be a separate species—Pygmy Eagle *Aquila* (*Hieraetus*) *weiskei* (Gjershaug *et al.* 2009). All the above records from Halmahera, Seram and Buru are likely to be of Pygmy Eagle.

#### Great Cuckoo Dove *Reinwardtoena reinwardtii reinwardtii*

A single individual was photographed on 8 February 2011 above Waieka at 1,430 m—the only record. The previous highest record on Buru was 1,300 m (Poulsen & Lambert 2000).

#### Pompadour Green Pigeon *Treron pompadora aromatica*

The distinctive subspecies *aromatica*, endemic to Buru, may merit treatment as a full species (Rasmussen & Anderton 2005, Rheindt & Hutchinson 2007b, Collar 2011). The status and habitat requirements of this taxon are not well understood. Although it is considered to be moderately common on Buru (Coates & Bishop 1997), we never observed it in the wet forests of west Buru. Our only record, a single bird, was near sea-level at Wae Apu in west Buru, 4 June 1996.

#### Long-tailed Mountain Pigeon *Gymnophaps mada mada*

Endemic to Buru and Seram, this species occurs on Buru from the lowlands to 2,060 m (Coates & Bishop 1997), although it is doubtful whether any ornithologists have reached this altitude on Buru. In October 1995, 33 birds were seen inland from Fogi from 750–1,250 m; 11 were in a single tree. In November and December 1995, 75 birds were seen inland from Waieka between 650–1,760 m. In 2011, five birds were seen near Waieka, between 100–1,100 m.

#### Blue-fronted Lorikeet *Charmosyna toxopei* (Critically Endangered)

This Buru endemic was not found, despite interviewing many local people and conducting full-day searches for it at Air Buaya (24 November 1995) and Waieka (11 December 1995). Both sites are within 25 km of Teluk Bara, where a few observations had been reported in November and December 1989 (Jepson 1993, Marsden *et al.* 1997, BirdLife International 2001). No dedicated searches were made for the bird in 2011, and it was not observed. The only confirmed records of the species are the seven birds brought to Toxopeus in 1921–1922 (Siebers 1930). This species appears to be very rare.

#### Red-cheeked Parrot *Geoffroyus geoffroyi rhodops*

Common below 1,000 m in 2011; seen twice at 1,440 m inland from Waieka—two on 12 February and five on 13 February—well above 900 m, the highest previous record for Buru (Coates & Bishop 1997).

#### Black-lored Parrot *Tanygnathus gramineus* (Vulnerable)

This little-known and rarely recorded Buru endemic has been thought to be one of the world's very few nocturnal parrots (Siebers 1930). In 1995, calls in the night that were believed to be this species were heard inland from Waieka (see Rudyanto 1996, BirdLife International 2001, Collar 2006). Unidentified flight calls thought to be those of parrots were heard on several nights until three hours

after sunset in 2011, inland from Waikeka at 1,100–1,500 m. However, recent daytime observations of this species by other visitors (Robson 2013, 2014) call into question its supposed nocturnality.

#### **Buru Racquet-tail *Prioniturus mada***

Endemic to Buru. In 1995, 57 birds were recorded between 250–1,300 m in logged and primary forest inland from Fogi, and nearly 100 birds were seen from 0–1,750 m inland from Waikeka, where the species was also recorded in cultivation near the village. Birds were usually seen singly or in small flocks, the largest containing 16 birds. In 2011 there was only one observation—two birds inland from Waikeka at 1,100–1,450 m. We attribute the difference between 1995 and 2011 to a seasonal reduction in the local availability of preferred fruits rather than a population decline; there were noticeably fewer trees fruiting here in 2011, and consequently fewer feeding aggregations of pigeons and parrots.

#### **Common Paradise-kingfisher *Tanysiptera galatea acis***

In 2011, a juvenile perched at 1,100 m inland from Waikeka on 5 February was the only observation—well above 500 m, the highest previous record (Coates & Bishop 1997).

#### **Variable Kingfisher *Ceyx lepidus cajeli***

Andersen *et al.* (2013) suggest that subspecies *cajeli*, endemic to Buru, should be treated as a full species. Many of the 2011 records were above 920+ m the highest previous record for Buru (Coates & Bishop 1997). Nineteen birds were mist-netted inland from Waikeka between 3–11 February (1 at 700 m, 12 at 1,100 m, 6 at 1,440 m).

#### **Red-bellied Pitta *Pitta erythrogaster rubrinucha***

Irestedt *et al.* (2013) propose that subspecies *rubrinucha*, endemic to Buru, should be treated as a full species. One to three birds were calling inland from Fogi in primary forest at 200–1,000 m on most days between 14 and 30 October 1995; the call is similar to subspecies *piroensis* on Seram. One bird was caught on 25 October. Up to three birds were calling almost every night between 1–8 December 1995, inland from Waikeka in primary forest at 680–1,500 m. From 8 to 14 February 2011, two or three birds called every afternoon/evening at about 1,440 m, inland from Waikeka, and a single bird was caught here on 11 February.

#### **Black-faced Friarbird *Philemon moluccensis***

This south Maluku endemic was encountered very frequently on Buru. In 1995–1996 it was found from sea-level to at least 1,760 m, in all wooded areas including mangroves, and 598 individuals were recorded during 166 point counts, including eight mist-netted. Birds carrying nesting material were seen on 19 and 30 October 1995. In 2011, the species was common almost everywhere from sea-level to 1,500 m.

#### **Buru Honeyeater *Lichmera deningeri***

Buru endemic; in 1995, six were recorded, on 3 and 5 December in primary montane forest inland from Waikeka at 1,240–1,500 m. Between 11–14 February 2011 one or two birds could be seen at any given time visiting the flowers of a climbing vine inland from Waikeka at 1,450 m. We estimated that about 10 individuals were present each day. The only other 2011 record was a bird mist-netted about 100 m from the flowering vine on 13 February (Plate 1).

#### **Wakolo Myzomela *Myzomela wakoloensis wakoloensis***

Formerly considered conspecific with Scarlet Honeyeater *M. sanguinolenta*, this primarily montane honeyeater is endemic to Buru and Seram (Coates & Bishop 1997). In 1995, it was only seen inland from Fogi, where it was uncommon—two were recorded

on 18 October at 680 m, one on 25 October at about 1,000 m, and one on 30 October at 1,200 m. In 2011, 2–3 birds were seen daily from 11–13 February at the same flowering vine frequented by Buru Honeyeater (see above).

#### **Buru Cuckooshrike *Coracina fortis* (Near Threatened)**

A little-known Buru endemic (Coates & Bishop 1997). Nine birds were recorded inland from Fogi between 500–1,340 m, from 17–28 October 1995, but it was only recorded once inland from Waikeka, when YP saw two near sea-level on 10 December 1995. In 2011, six birds were recorded inland from Waikeka at 1,100–1,440 m, between 5–14 February.

#### **Drab Whistler *Pachycephala griseonota examinata***

In 1989, Marsden *et al.* (1997) found this Maluku and Sula Islands endemic to be at least moderately common in northern Buru. However, in 1995, only four birds were seen, although more were probably heard, so the species may have a patchy distribution across the island. Drab Whistler was not recorded in 2011. All 1995 records were from logged and primary forest inland from Fogi and Waikeka, where it was seen from 800–1,100 m, and probably heard from sea-level to 1,420 m. It is described as uncommon on Buru with an altitudinal range between about 500–1,300 m (Coates & Bishop 1997).

#### **Black-eared Oriole *Oriolus bouroensis bouroensis***

Endemic to Buru and Tanimbar. Described as ‘common on Buru where usually mistaken for the less numerous Black-faced Friarbird (Wallace 1863)’ by Coates & Bishop (1997). This was not the case during our visits—the oriole was common but well outnumbered by the friarbird here. However, separating these species in the field can be confusing, which may explain why the Manchester Indonesia Islands Expedition failed to record any orioles on Buru in 1989 (Jepson 1993). In 1995, the species was recorded inland from Fogi, but its abundance there could not be assessed as team members were still learning to separate it from the friarbird. Later in 1995, Black-eared Oriole was found to be rather common inland from Waikeka in secondary, logged and primary forest from sea-level to 1,460 m. In 1996, five were recorded from Wae Apu on 4 June, and several more near Metar in dry forest dominated by *Melaleuca leucadendra*—one on 7 June, 18 on 8 June, and seven on 9 June. In 2011, twelve were seen and several photographed inland from Waikeka between 220–1,430 m.

#### **Tawny-backed Fantail *Rhipidura superflua***

Buru endemic. In 1995, 20 birds were seen and another four mist-netted, all in primary montane forest inland from Fogi and Waikeka between 950–1,750 m. About 20 birds were observed in 2011 inland from Waikeka (including three mist-netted) at 1,400–1,450 m between 8–14 February.

#### **White-naped Monarch *Monarcha pileatus buruensis***

Although described as moderately common on Buru (Coates & Bishop 1997), only four birds were seen in 1995, in logged and primary forest inland from Fogi and Waikeka from 160–900 m. It was unexpectedly recorded near Metar in dry forest dominated by *Melaleuca leucadendra* on 8 June 1996. No observations were made in 2011.

#### **Black-tipped Monarch *Monarcha loricatus***

Buru endemic. In 1995, four birds were mist-netted and another 25 seen in secondary, logged and primary forest inland from Fogi and Waikeka between 0–1,270 m. In 2011, three were seen and another eight mist-netted inland from Waikeka at 700–1,440 m between 3–7 February (Plate 2). This is the highest altitude at which the species has been recorded.



**Dark-grey Flycatcher *Myiagra galeata buruensis***

This Maluku endemic is uncommon on Buru between 0–800 m (Coates & Bishop 1997). In 1995, 16 were seen and another 18 heard from 0–900 m, mostly in secondary forest near Waikeka, but also in logged forest inland from Fogi and Waikeka. In 1996 there were records from Metar, in dry forest dominated by *Melaleuca leucadendra* (a habitat typical of eastern Buru), including eight on 7 June, 19 on 8 June, and five on 9 June. A few more were recorded in mangroves at Kajeli Bay in May and June 1996. In 2011, six were seen and one caught inland from Waikeka in 2011 between 0–1,450 m, the highest altitude at which the species has been observed on Buru.

**Golden Bulbul *Alophoixus affinis mysticalis***

Collar *et al.* (2013) suggested that the Buru subspecies *mysticalis* should be treated as a full species. This is supported by our molecular data which suggests a relatively long period of isolation between the Buru and Seram forms, with individuals from the two islands showing 11.1% uncorrected pairwise distances in the mitochondrial gene ND2. In 1995–1996, it was common up to 1,750 m (Poulsen & Lambert 2000). In 2011, it was fairly common in both degraded and primary forest inland from Waikeka (0–1,450 m), where at least 25 individuals were seen between 30 January–17 February.

**Chestnut-backed Bush Warbler *Bradypterus castaneus disturbans***

Although the species is described as being not uncommon on Buru (Coates & Bishop 1997) it was seldom recorded, with no observations in 1995–1996 and only three in 2011—two sightings and one bird mist-netted inland from Waikeka between 9–14 February, all in primary forest at 1,430–1,450 m.

**Mountain White-eye *Zosterops montanus montanus***

In 2011 on 1 February, a most unexpected observation was a foraging flock of about 150 Mountain White-eyes moving quickly through the canopy of secondary forest at only 480 m, inland from Waikeka. The birds' abdomens were grey-coloured, sometimes showing a yellow central stripe, precluding confusion with Buru Yellow White-eye *Z. buruensis*, which has yellow underparts. Apparently, this common and widespread species has not previously been recorded below 500 m anywhere in its broad range (Coates & Bishop 1997, van Balen 2008). The species's altitudinal range on Buru is 1,200–2,000 m (Coates & Bishop 1997) and all other observations of Mountain White-eye in 2011 were between 1,100–1,440 m.

**Buru Yellow White-eye *Zosterops buruensis***

Buru endemic. More than 200 birds were recorded during 1995, in logged and primary forest inland from Fogi and Waikeka between 100–1,750 m. In 2011, about 50 were seen inland from Waikeka between 1,100–1,450 m. Birds were generally observed in small flocks.

**Rufous-throated White-eye *Madanga ruficollis* (Endangered)**

This species is the sole representative of the genus *Madanga*, endemic to Buru. On 7 December 1995, DP and MKP saw two birds in a mixed-species feeding flock in montane forest (1,460 m) inland from Waikeka (Robson 1996, Poulsen & Lambert 2000, BirdLife International 2001)—the first record of the species since it was described in 1923. One bird was climbing up and down mossy tree trunks in a nuthatch-like manner. On 11 February 2011, PHF photographed a bird inland from Waikeka at 1,430 m, again behaving in a nuthatch-like manner in a mixed-species flock. The only other records we are aware of since 1995 are two birds photographed by Rheindt & Hutchinson (2007a) above Memboli in central Buru at 1,750 m on 31 August 2006. They observed the same nuthatch-like behaviour and noted that 'the birds seemed to

be restricted to a peculiar type of montane forest that is characterised by strong epiphytic growth and stunted tree growth'. This corresponds exactly with our observations. However, we disagree with their suggestion that the species is probably common in this habitat type, as a total of 11 field days spent in appropriate habitat in 1995 and 2011 yielded sightings of only three individuals. It is probably not safe to say very much about the overall abundance of this montane species as the higher altitudes of Buru remain unexplored. Rheindt & Hutchinson (2007a) mentioned another sight record from the 1990s, citing C. Robson (*in litt.* 2006), but this refers to the 7 December 1995 sighting by DP and MKP.

**Buru Thrush *Zoothera dumasi* (Near Threatened)**

This Buru endemic montane species is found from 600–1,520 m (Coates & Bishop 1997, Poulsen & Lambert 2000). It was not recorded with certainty in 1995–1996, but in 2011 six were mist-netted in dense primary montane forest inland from Waikeka—three caught at 1,100 m on 6–7 February (Plate 12), and three at 1,440 m on 9–13 February.

**Streaky-breasted Jungle Flycatcher *Rhinomyias additus* (Near Threatened)**

This Buru endemic was described in 1900, and then went unrecorded from 1921 (Siebers 1930) to 1995 (Robson 1996). In 1995 it was rather common in logged and primary forest inland from Fogi at altitudes from 470–1,100 m; here it was seen almost daily with a total of nearly 40 birds recorded. Birds in the previously unknown juvenile plumage were also caught here (Plate 3). It was less common inland from Waikeka, where five birds were observed in 1995 at 680–1,460 m. In 2011, ten were seen and another four mist-netted inland from Waikeka; the birds were caught at 1,100 m (one on 5 February) and 1,440 m (three on 13 February). All records were from primary forest. This species sits upright on bare branches, sallying out to catch passing insects, or hunts through foliage after prey. Birds frequently follow mixed-species feeding flocks. The songpost is often a bare branch in the forest mid-storey and the species only occasionally descends into the undergrowth.

**Cinnamon-chested Flycatcher *Ficedula buruensis buruensis***

In 1995, this southern Maluku endemic was recorded at 900–1,500 m, with five caught inland from Fogi between 25–28 October, and four caught inland from Waikeka between 2–7 December. Similar numbers were seen in both areas. In 2011, one bird was seen and a total of eight were caught in mist-nets inland from Waikeka at 480–1,430 m.

**Little Pied Flycatcher *Ficedula westermanni***

The first records of this montane flycatcher on Buru were made inland from Fogi at 1,340 m in 1995 (Robson 1996). Vocalisations that were judged to be this species were tape-recorded in 1995 inland from Waikeka at 1,460 m, and on 14 February 2011 it was photographed in the same area at 1,450 m.

**Records of widespread, mostly migratory species from Buru**

Here we summarise observations of six globally widespread (and primarily migrant) species that are infrequently recorded from south Maluku, made on Buru in 1995, 1996 and 2011; these may help to clarify their status and movements within the region:

**Peregrine Falcon *Falco peregrinus*:** rare migrant/resident—one at Namlea, 27 January 2011.

**Common Tern *Sterna hirundo*:** migrant; movements in Maluku poorly known—14 at Leksula, 10 October 1995; 10 at Wamlana, 1 November 1995.

**Sooty Tern *Sterna fuscata*:** record high counts for Buru—650–700 between Waipandan and Fogi, 12 October 1995, and 70 near Air Buaya, 23 November 1995.

**White-winged Tern *Chlidonias leucopterus*:** few records from Buru—30 near Leksula, 10 October 1995; 29 between Leksula and Fogi, 12 October 1995; 20 near Wamlana, 1 November 1995; 5 at Savana Jaya, 1 June 1996; and 3 at Mako, 4 June 1996.

**Fork-tailed Swift *Apus pacificus*:** migrant, movements in Maluku poorly known—8 near Leksula, 10–11 October 1995, 25 Waikeka 10–11 December 1995, 4 Namlea 27 January 2011.

**Chestnut Munia *Lonchura atricapilla*:** about 30, Namlea 27 January 2011; second record for Buru, probably introduced.

### **Seram species accounts**

#### **Southern Cassowary *Casuarus casuaris* (Vulnerable)**

This species was probably introduced to Seram from New Guinea (White 1975). On 21 February 2012, in Huahulu village we met a villager carrying a live medium-sized juvenile bird, captured in the surrounding forest. This was the only evidence we obtained of its presence here. Bowler & Taylor (1989) also found it rare in Manusela National Park, but it may be more common in east Seram (Isherwood *et al.* 1998).

#### **Moluccan Megapode *Eulipoa wallacei* (Vulnerable)**

One was caught in a mist-net at 1,000 m on the lower slopes of Gn Binaiya on 8 February 2012 (Plate 4), slightly above the previous highest record (900 m) for Seram (Coates & Bishop 1997). Megapodes were flushed on three occasions when we were working at 1,000 m, but Orange-footed Megapode *Megapodius reinwardt* cannot be excluded due to the poor views obtained.

#### **Pacific Baza *Aviceda subcristata reinwardtii***

Observed on three occasions in lowland forest in 2012, including a group of four seen at Roho (100 m) on 4 February. On 8 February, a single bird was seen in flight at 1,000 m on Gn Binaiya, significantly above the previous highest record (200 m) for Seram (Coates & Bishop 1997). Elsewhere in Maluku, it is known to occur to 450 m on Halmahera (Coates & Bishop 1997) and 730 m on Buru (Poulsen & Lambert 2000).

#### **Rufous-necked Sparrowhawk *Accipiter erythrauchen ceramensis***

Maluku endemic. In 2012, the only definite record was on 15 February when an adult bird flew to a branch in the forest mid-storey at 1,450 m on Gn Binaiya. This is slightly above the previous highest record (1,370 m) for Seram (Coates & Bishop 1997).

#### **Gurney's Eagle *Aquila gurneyi* (Near Threatened)**

In 2012, this species was identified on two occasions from among the more numerous Indian Black Eagles *Ictinaetus malayensis* near Kanikeh village. An immature bird was soaring over forest at about 750 m on 18 February, and a different immature individual was being harried by a Brahminy Kite *Haliastur indus* at about 600 m on 19 February.

#### **White-throated Pigeon *Columba vitiensis halmaheira***

Coates & Bishop (1997) give no information about the altitudinal range of this species on Seram. In 2012, it was fairly common between 1,350–1,610 m on Gn Binaiya, where several observations were made daily between 13–17 February. It was particularly vocal in the early morning, calling *WOOM woom*, the first note loud and forceful, the second much quieter and slightly lower in pitch.

#### **Brown Cuckoo Dove *Macropygia amboinensis amboinensis***

In 2012, this species was common in the lowlands, but less frequent to 1,000 m, the upper altitudinal limit for Seram (Coates & Bishop 1997). However on 14 February, a single calling bird was seen at 1,510 m on Gn Binaiya.

#### **Great Cuckoo Dove *Reinwardtoena reinwardtii reinwardtii***

Rheindt & Hutchinson (2007a) reported this species at 1,600 m on Gn Binaiya, in contrast to the published highest record of '1,000+ m' (Coates & Bishop 1997). In 2012, also on Gn Binaiya, we recorded one or more individuals most days from 8–17 February, between 900–1,600 m, but mostly above 1,300 m.

#### **White-bibbed Fruit Dove *Ptilinopus rivoli prasinorrhous***

In 2012, the species was recorded regularly on Gn Binaiya up to 1,525 m, the highest reported altitude for Seram (Coates & Bishop 1997). However, a single bird was calling at 1,630 m on 14 February.

#### **Long-tailed Mountain Pigeon *Gymnophaps mada stalkerii***

Coates & Bishop (1997) give the altitudinal range of this species as 400–2,250 m on Seram. In 2012, seven birds were observed near Roho at 100 m on 4 February (Bowler [2009] erroneously gives the altitude of Roho as 300 m). The species was frequently recorded from this altitude upwards, and was found to be particularly common between 1,300–1,700 m. Large flocks were regularly encountered at these altitudes; a flock of about 50 birds was counted on 10 February 2012 at 1,350 m. The pigeon's display flight was observed on the afternoon of 16 February at 1,500 m, with two birds performing amongst a resting group of about 15. This resembled the impressive display of Papuan Mountain Pigeon *G. albertisii*, which flies almost vertically upwards before plummeting back down. However, the flight paths of the birds on Seram were neither as high nor as steep as those of Papuan Mountain Pigeons observed by AHR in Papua New Guinea, and the birds continued on a forward flight path after dropping from the stall, rather than making an immediate return descent to the original perch.

#### **Red-breasted Pygmy Parrot *Micropsitta bruijnii pileata***

Although Coates & Bishop (1997) give the species's altitudinal range as 700–900 m on Seram, Bowler (2009) describes a probable sighting at 1,500 m, and local people reported that it occurs up to the treeline on Gn Binaiya at 2,700 m (Arndt & Persulesy 2010). The few records from 2012, 11 birds in total, extend its known altitudinal range only marginally. It was observed on five occasions between 6–9 February, from 900–970 m on the lower slopes of Gn Binaiya. Arndt & Persulesy (2010) found that these parrots frequently occur in large flocks of up to 100 during the wet season in Seram, but we observed only small groups of up to five birds.

#### **Salmon-crested Cockatoo *Cacatua moluccensis* (Vulnerable)**

Endemic to Seram and its satellite islands. In 2012, this vocal and conspicuous species was observed in both disturbed and mature lowland forest below 800 m, with two additional records at and above 1,000 m, which is given as its upper altitudinal limit (Coates & Bishop 1997). We observed nine above Sawai (31 January–2 February), five at Roho (4 February), 15 between Roho and Kanikeh (5 February), 14 near and above Kanikeh (6 February), and heard one calling at 1,370 m on Gn Binaiya (10 February); we also recorded one bird resting at 1,000 m on Gn Binaiya (12 February), six between Camp I and Roho (12 February), two between Roho and Huahulu (13 February), four between Camp I and Kanikeh (19 February), 10 between Kanikeh and Roho (20 February) and one between Roho and Huahulu (21 February).



**Red Lory *Eos bornea bornea***

Maluku endemic. Coates & Bishop (1997) state that it occurs from sea-level to about 750 m, occasionally to 1,220 m on Seram, but our observations in 2012 contradict this assessment. Although common at lower altitudes, it was one of the most frequently encountered species on the lower slopes of Gn Binaiya, from 800 to 1,150 m (7–11 February). Higher up the mountain, a perched pair were calling at 1,300 m (12 February), and birds were recorded flying overhead in small numbers on three occasions between 1,370 and about 1,500 m. Our highest record was at 1,630 m (14 February), when a single bird was perched in close proximity and seen well, precluding confusion with Blue-eared Lory *E. semilarvata*. Red Lory was probably slightly under-recorded at higher altitudes, as it was not always possible to identify overflying lorries (see below).

**Blue-eared Lory *Eos semilarvata***

In 2012, this Seram endemic was recorded quite commonly above about 1,350 m on Gn Binaiya, but also observed at 950 m on one occasion on 18 February, when we found a mixed group of about 7–8 Red Lorries and 7–8 Blue-eared Lorries foraging in a flowering tree. The altitudinal replacement of Red Lory by Blue-eared Lory is gradual, occurring over at least 700 m. Identification in the area of overlap can be problematic, as views are usually of backlit birds flying rapidly overhead. The best means of identification in such cases is by voice: although this is variable in both species, the calls of Blue-eared Lory are typically less harsh and grating.

**Purple-naped Lory *Lorius domicella* (Endangered)**

Between 6–11 February 2012, this Seram endemic was found to be fairly common in primary forest from 800–1,000 m above Kanikeh, with daily observations of 5–15 individuals—largest groups 2–3 birds. This slightly increases the highest altitude at which this species is known to occur from 900 m (Coates & Bishop 1997). The species was not recorded close to Kanikeh, possibly due to trapping pressure or habitat disturbance; much of the forest here had been cleared for gardens or appeared to be secondary re-growth. Trapping is evidently ongoing—we heard captive Purple-naped Lorries calling from houses in Roho and Kanikeh, and met a villager walking from Kanikeh towards Roho carrying a single live bird.

**Moluccan King Parrot *Alisterus amboinensis amboinensis***

On Seram this species is reported up to '1,400+ m' (Coates & Bishop 1997); we recorded it a few times from the lowlands up to this elevation and a single raucously calling bird was observed in flight at 1,510 m on Gn Binaiya on 14 February 2012.

**Channel-billed Cuckoo *Scythrops novaehollandiae***

There are confirmed breeding records of this species for a few Wallacean islands, including Buru, but its status remains poorly known in the region. Other records from Maluku have been during the southern winter (early April–November) and are thought to be winter visitors from Australia (Mason & Forrester 1996, Coates & Bishop 1997). Marsden (1998) recorded this species on Seram during surveys in December 1989 and January 1990. Between 30 January and 3 February 2012, we observed small numbers around Sawai on most days. The situation on Seram is similar to New Guinea, where Channel-billed Cuckoo has been observed during all months of the year, but breeding has never been confirmed (Coates 1985).

**Seram Masked Owl *Tyto almae***

There is one previous record of a *Tyto* owl on Seram: a bird observed and photographed by Rudi Badil and Sukianto Lusli in Manusela National Park during the 1987 Operation Raleigh Expedition, which was identified as Lesser Masked Owl *T. sororcula* by Coates & Bishop (1997: 358). Uncertainty regarding this identification

was expressed, however, by Bruce (1999) and BirdLife International (2001), and K. D. Bishop (*in litt.* 2000) suggested that the photographed bird may be closer to Taliabu Masked Owl *T. nigrobrunnea*. On 10 February 2012 we caught a single *Tyto* owl in a net at 1,350 m on Gn Binaiya (Plate 5). Subsequent DNA analysis on tissue collected from this specimen revealed that the Seram bird diverged from the lineage that gave rise to its closest living relatives around 1.7 million years ago and it has been described as a new species, Seram Masked Owl *Tyto almae*, in Jonsson *et al.* (2013), where habitat details and conservation status are discussed.

**Moluccan Scops Owl *Otus magicus magicus***

Coates & Bishop (1997) provide no information about this species's altitudinal range on Seram, but Rheindt & Hutchinson (2007a) describe an encounter at 1,000 m on Gn Binaiya. We recorded it at sea-level in degraded forest at Sawai, where at least three were heard calling on 31 January 2012. All other records were from Gn Binaiya: three birds caught around 1,000 m on 6 and 7 February 2012; one bird caught at 1,370 m on 19 February 2012; and two birds heard calling nightly at 1,350 m from 12–17 February 2012. The highest was at 1,630 m, where a male was caught on 17 February 2012 in primary forest on Gn Binaiya.

**Lazuli Kingfisher *Todiramphus lazuli* (Near Threatened)**

Endemic to Seram, Ambon and Haruku. Records from 1996 are documented in Poulsen (2004). In 2012 only one bird was recorded, at 100 m on 12 February, at Roho, a known site (Poulsen 2004).

**Variable Kingfisher *Ceyx lepidus lepidus***

Andersen *et al.* (2013) suggest that subspecies *lepidus*, endemic to Seram, Ambon, and nearby small islands, should be treated as a full species. Coates & Bishop (1997) give the species's altitudinal range on Seram as 0–640 m, but in 2012, apart from two birds at about 100 m (Plate 6), all our other observations were above 900 m on Gn Binaiya: one at 900–1,000 m on 10 February, three mist-netted at 1,000 m between 7–10 February, and two caught at 1,350 m on 14 and 16 February.

**Papuan Hornbill *Aceros plicatus***

In 2012 this species was most common in the lowlands, becoming increasingly scarce at higher altitudes. Nevertheless, based on observations from Gn Binaiya, its altitudinal range appears to extend significantly higher than 1,200 m (Coates & Bishop 1997). On 16 February, a small group was seen at about 1,340 m, and a single bird was calling at 1,510 m. Another single bird was flying over forest at 1,900 m on 17 February.

**Red-bellied Pitta *Pitta erythrogaster piroensis***

Irestedt *et al.* (2013) suggest that subspecies *piroensis*, endemic to Seram, should be treated as a full species. Described as uncommon, with an altitudinal range of 0–750 m (Coates & Bishop 1997), it is infrequently reported from the island. In 1996, there were five records at altitudes up to 950 m during an expedition to Wae Bula (Isherwood *et al.* 1997). In 2012, our observations (Plate 7) were at considerably higher altitudes (1,350–1,600 m) on Gn Binaiya, where it was fairly common and very vocal in the morning and late afternoon, with small numbers recorded daily (13–17 February). It is possible that earlier visitors to Gn Binaiya failed to record this species due to the seasonal nature of its vocal activity.

**Grey-necked Friarbird *Philemon subcorniculatus***

In 2012, this Seram endemic was common from sea-level up to 1,100 m, the highest altitude at which it was previously reported (Coates & Bishop 1997). Three records were made above this elevation: two were calling at 1,350 m on 13 February; another two were calling at 1,500 m on 16 February; and one was calling at 1,540 m on 15



February. Although none of these birds was seen, we are confident that the loud, familiar calls were not given by Grey-collared Oriole *Oriolus forsteni*—known to produce vocalisations very similar to the friarbird's. While the friarbird was one of the most common and conspicuous species from 800–1,100 m, where we had ample opportunity to learn its calls, only a single oriole was recorded this high, probably being commoner in the lowlands (see below).

#### Seram Honeyeater *Lichmera monticola*

This Seram endemic was one of the commonest species at higher altitudes in 2012; although not always easily seen, it was highly vocal and thus easy to detect. More than 20 birds were observed daily on Gn Binaiya from 1,350–1,650 m (13–17 February). It was recorded only twice below 1,000 m, on the lower slopes of Gn Binaiya: one at about 920 m (7 February) and one at 870 m (9 February).

#### Drab Myzomela *Myzomela blasii*

Endemic to Seram, Boano and Ambon, this species is inconspicuous, uncommon and poorly known (Coates & Bishop 1997). Three brief observations of four individuals were made in 2012 on the lower slopes of Gn Binaiya from 800–900 m, the first being of one bird in the company of a Seram Honeyeater (9 February), followed by two (10 February), and one (11 February).

#### Wakolo Myzomela *Myzomela wakoloensis elisabethae*

South Maluku endemic. The altitudinal range on Seram is 600–1,400 m (Coates & Bishop 1997). However, Rheindt & Hutchinson (2007a) found it from 2,000–2,300 m, the highest it is known to occur. In 2012, we found it to be common on Gn Binaiya (13–17 February) with groups of up to 10 birds from 1,350–1,550 m, where all our records were made.

#### Golden Whistler *Pachycephala pectoralis macrorhyncha*

In 2012, this species was seen frequently at sea-level, caught in large numbers above 900 m and common on Gn Binaiya up to at least 1,630 m, where four were caught (15 February). According to Coates & Bishop (1997) it occurs no higher than 1,430 m on Seram.

#### Grey-collared Oriole *Oriolus forsteni*

Seram endemic. Seen only twice in 2012—a group of three near Sawai at 150 m (2 February) and one at 870 m on the lower slopes of Gn Binaiya (9 February). This species's visual and vocal mimicry of Grey-necked Friarbird and the identification problems this presents were noted by Diamond (1982) and Ekstrom & Isherwood (2000). We found that, despite the similarity in appearance, they can be confidently differentiated when seen reasonably well. The friarbird is typically vocal, conspicuous and active, and the body is often held horizontal. It has a strong, down-curved bill, and the bare skin of the head is often visible through a thin layer of feathers. In contrast, the Grey-collared Oriole was quiet, still and inconspicuous with a well-feathered head and straighter, shorter bill. We sometimes heard distinctively oriole-like liquid-sounding calls in the forest near Sawai, and once saw Grey-collared Oriole producing them—these calls were not heard elsewhere.

#### Streaky-breasted Fantail *Rhipidura dedemi*

A common and conspicuous Seram endemic, this species was observed frequently in 2012 above 150 m. Records included up to 20 birds daily at 800–1,100 m (7–11 February), and 10–15 daily at 1,350–1,700 m (13–17 February).

#### Spectacled Monarch *Monarcha trivirgatus nigrimentum*

In 2012, we were surprised to find that on Seram this species occurs in two conspicuously different plumages. One resembled the illustration in Coates & Bishop (1997), with a black eye-mask and

throat-patch (Plate 8). These typical 'spectacled' birds were observed near Sawai, at 0–200 m; a total of 11 were seen (1 and 2 February), and another two were caught at 100 m on 1 February. The second type completely lacked any black colouration on the head and throat—these feathers were the same shade of grey as the crown (Plate 9). Such 'non-spectacled' birds were otherwise identical to spectacled birds. This second plumage type on Seram was noted by Rheindt & Hutchinson (2007b), who seem to have observed only non-spectacled birds on the island. We found these to be common at locations further inland. A total of 15 were recorded during surveys on Gn Binaiya at 800–1,000 m (7–11 February), and nine (including adult males and females) were mist-netted between 950–1,050 m (7–8 February). These records are above the previous highest altitudinal record for Seram of 950 m (Coates & Bishop 1997). Non-spectacled birds were also recorded at lower altitudes, including at least three between Roho and Kanikeh at about 600 m (5 February), and two (one at 210 m and another at 140 m) between Roho and Huahulu (21 February).

Further investigation revealed that morphological measurements of spectacled and non-spectacled birds were virtually identical and comparison of the mitochondrial gene ND2 from both types revealed no difference between them. It is curious that the two types were never recorded from the same locations, and that intermediate forms seem to be mostly absent—although Rheindt & Hutchinson (2007b) report non-spectacled birds with a 'tiny black chin-spot'. Bogor Zoological Museum holds 12 *M. t. nigrimentum* specimens, collected from Ambon in the 1950s; these include nine non-spectacled birds, three spectacled birds, and one intermediate, sexed as a male, with a relatively small but distinct black throat-patch, and a dark grey eye-mask.

#### Slender-billed Crow *Corvus enca violaceus*

In 2012 fairly common up to 1,000 m—the highest altitudinal record for Seram (Coates & Bishop 1997). However, we encountered a calling bird on Gn Binaiya at about 1,400 m, which, although it was not seen, was identified confidently based on its familiar, distinctive vocalisations.

#### Golden Bulbul *Alophoixus affinis affinis*

Collar *et al.* (2013) suggested that the Seram subspecies *affinis*, together with the Ambon subspecies *flavicaudus*, should be split from the Golden Bulbul complex as *Alophoixus affinis*; our molecular data supports the split from at least the Buru form (see above). This taxon was common on Seram in 2012 with the largest numbers found in the lowlands near Sawai, where up to 20 birds were recorded daily from 0–200 m (31 January–3 February). It was also noted regularly on the lower slopes of Gn Binaiya, with about five seen daily between 800–1,000 m (6–11 February). A single female caught at 1,000 m (8 February) was marginally higher than the previous highest record (950 m) for Seram (Coates & Bishop 1997).

#### Chestnut-backed Bush Warbler

##### *Bradypterus castaneus musculus*

Bowler & Taylor (1989) found this skulking species common from 1,000–1,750 m in July–August on Gn Binaiya. In 2012, we recorded it only three times on Gn Binaiya, from 1,370–1,510 m, including two netted birds. It was not heard calling, and it seems likely that our low number of observations can be attributed at least in part to a seasonal drop-off in vocal activity.

#### Seram White-eye *Zosterops stalkerii*

Seram endemic. We observed this species singly or in twos, usually in mixed-species feeding flocks, on four occasions between 8–11 February 2012, at 870–970 m on the lower slopes of Gn Binaiya. The highest altitudinal record reported in Coates & Bishop (1997) is 900 m.





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**Plate 1.** Buru Honeyeater *Lichmera deningeri* caught at 1,440 m inland from Waikeka, Buru, 13 February 2011.



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**Plate 2.** Black-tipped Monarch *Monarcha loricatus* caught at 700 m inland from Waikeka, Buru, 3 February 2011.



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**Plate 3.** Streaky-breasted Jungle Flycatcher *Rhinomyias additus* juvenile caught inland from Fogí, Buru, October 1995.



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**Plate 4.** Moluccan Megapode *Eulipoa wallacei* caught at 1,000 m on Gn Binaiya, Seram, 8 February 2012.



PIERRE-HENRI FABRE

**Plate 5.** Seram Masked Owl *Tyto almae* caught at 1,350 m on Gn Binaiya, Seram, 10 February 2012.



PIERRE-HENRI FABRE

**Plate 6.** Variable Kingfisher *Ceyx lepidus lepidus* caught at 150 m near Sawai, Seram, 31 January 2012.



PIERRE-HENRI FABRE



**Plate 7.** Red-bellied Pitta *Pitta erythrogaster piroensis* caught at 1,370 m on Gn Binaiya, Seram, 15 February 2012.



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**Plate 10.** Grey-hooded White-eye *Lophozosterops pinaiae* caught at 1,370 m on Gn Binaiya, Seram, 14 February 2012.

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**Plate 8.** 'Spectacled' type Spectacled Monarch *Monarcha trivirgatus nigrimentum* caught at 100 m near Sawai, Seram, 1 February 2012.



PIERRE-HENRI FABRE

**Plate 11.** Seram Thrush *Zosterops joiceyi* female caught at 1,600 m on Gn Binaiya, Seram, 15 February 2012. Note the lack of an eye-ring, the scaled pattern created by the white-edged black feathers of the sides and flanks, the all-black ear-coverts, and the gradation in colour from the rufous-brown crown to the sooty olive-brown mantle, all of which distinguish this species from Buru Thrush (Plate 12). This individual is moulting its white-tipped median wing-coverts, so the single wing-bar pattern formed by these is somewhat obscured.

PIERRE-HENRI FABRE



**Plate 9.** 'Non-spectacled' type Spectacled Monarch *Monarcha trivirgatus nigrimentum* caught at 1,000 m on Gn Binaiya, Seram, 7 February 2012. Apparent difference in upperparts colouration from bird in Plate 8 is due to lighting.



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**Plate 12.** Buru Thrush *Zosterops dumasi* male caught at 1,100 m inland from Waikeka, Buru, 6 February 2011. The pale eye-ring, brown colouration on the sides and flanks and the partially brown ear-coverts distinguish this species from Seram Thrush *Zosterops joiceyi* (Plate 11).



**Bicoloured White-eye *Tephrozosterops stalkerii***

Seram endemic. In 2012, eight birds in groups of 2–3 were seen near Kanikeh on the path from Roho, at about 600 m, on 5 February. Another individual was seen at 870 m on the lower slopes of Gn Binaiya on 9 February. All were in mixed-species feeding flocks in primary forest.

**Grey-hooded White-eye *Lophozosterops pinaiae***

Seram endemic (Plate 10). In 2012, this species was moderately common at higher altitudes. At least 20 birds were observed between 1,370–1,630 m on Gn Binaiya (13–17 February).

**Long-crested Myna *Basilornis corythaix***

Seram endemic. In 2012, 2–6 individuals were seen daily at Roho (100 m) on 3, 4, 12, 13 and 20 February. One bird was seen on the trail between Roho and Kanikeh (about 200 m) on 4 February. According to Coates & Bishop (1997), the species occurs mostly between 200–900 m, and we attribute our paucity of records primarily to the short time we spent in this altitudinal range.

**Seram Thrush *Zoothera joiceyi* (Near Threatened)**

In 2012, a single adult female caught in the lowest section of a mist-net at 1,600 m on Gn Binaiya (15 February) was our only definite record (Plate 11). This rarely seen endemic had previously been recorded from 800–1,280 m (Bowler & Taylor 1989, Ekstrom & Isherwood 2000). Our net was placed near the edge of a fairly extensive, very open level area—unusual in the otherwise steeply-sloping terrain—surrounded by tall moss-covered trees which formed a canopy over it; the vegetation consisted of small saplings and larger tree-ferns. We are not sure if the clearing was created by a flood or human disturbance. The conditions at this site correspond well with past observations made in similar isolated flat areas in montane forest; it has been hypothesised that the species is reliant on deep leaf-litter, which accumulates in such areas (Collar 2004). Although there were large deposits of leaf-litter where the bird was caught, there were similar accumulations on the surrounding slopes, where the uneven terrain caused it to collect.

Seram Thrush has recently been split from the closely related Buru Thrush *Z. dumasi* following Collar (2004); ten diagnostic morphological characters were found to differentiate between the two, but as only one specimen of Seram Thrush existed at the time of the study, it was not known if these differences were consistent across individuals. We can confirm that our female specimen clearly shows nine of the ten diagnostic traits, including ‘the progressive loss of dull rufous from mantle to tail’, ‘the possession of only a single row of wing-spots’ and the lack of an eye-ring. Only the colouration of the feet and tarsi of the specimens we collected do not exactly match Collar’s description (we found these to be greyish-pink in live birds of both species). As the Seram Thrush specimen examined by Collar (2004) was unsexed, and ours is a female, there is a possibility that the male shows different plumage characteristics; this is unlikely, however, as both sexes of Buru Thrush appear identical, and because sexual dimorphism does not appear in other Indonesian *Zoothera* thrushes (Collar 2004). Our molecular data further support this split; uncorrected pairwise distances in the mitochondrial gene ND2 between individuals from Buru and Seram are 7.1 %, suggesting isolation over a relatively long time. In 2011, six Buru Thrushes were caught on Buru (see above), which supports the contention that Seram Thrush is the rarer taxon (Coates & Bishop 1997).

**Island Thrush *Turdus poliocephalus deningeri***

In 2012 there were many observations of this species on Gn Binaiya below 1,800 m, the lowest altitude it had previously been recorded on Seram (Bowler & Taylor 1989, Coates & Bishop 1997). Our

lowest record was a single bird foraging and calling at 1,500 m on 16 February, but the species was seen daily in small numbers from this point to 1,660 m (13–17 February) and was notably commoner above 1,800 m. Two birds were mist-netted at 1,600 m on 16 and 17 February.

**Cinnamon-chested Flycatcher *Ficedula buruensis ceramensis***

The altitudinal range of this south Maluku endemic on Seram was reported to be 650–900 m (Coates & Bishop 1997), but Rheindt & Hutchinson (2007a) found the species up to 1,250 m on Gn Kobipoto. Between 6 and 11 February 2012 it was fairly common but inconspicuous on the lower slopes of Gn Binaiya and more were caught than seen: six were netted between 950–1,050 m, and four were seen between 800–1,000 m.

**Island Flycatcher *Eumyias panayensis harterti***

In 2012 there were three observations on Gn Binaiya; two were above the previous highest altitudinal record (1,150 m) for Seram (Coates & Bishop 1997). One was seen at 1,100 m on 9 February, at least two were in a mixed-species feeding flock at 1,510 m on 13 February, and a single bird was caught at 1,300 m on 18 February.

**Ashy Flowerpecker *Dicaeum vulneratum***

This south Maluku endemic was common from sea level at Sawai up to the lower slopes of Gn Binaiya at 1,000 m, with up to 10 records daily between 31 January–11 February 2012, and on 19 February 2012.

**Black Sunbird *Nectarinia aspasia aspasioides***

On 11 February 2012 a male and at least one female were seen in a mixed feeding flock at 970 m above Kanikeh on Gn Binaiya. The previous highest record for Seram was 700 m (Coates & Bishop 1997).

**Eurasian Tree Sparrow *Passer montanus***

An introduced species in Wallacea, we have found no previous records in the literature (e.g. Coates & Bishop 1997) for Seram. The species was very common in the coastal towns of Masohi (30 January 2012) and Amahai (22 and 23 February 2012) and has presumably been overlooked by ornithologists visiting the island in recent years.

**Blue-faced Parrotfinch *Erythrura trichroa pinaiae***

This species is apparently rare and local throughout most of its Wallacean range (Coates & Bishop 1997). A single bird was recorded on Gn Binaiya at 1,320 m on 11 February 2012.

**Black-faced Munia *Lonchura molucca molucca***

On Seram Bowler & Taylor (1989) found this species to be ‘apparently absent from gardens in the hills’ and Coates & Bishop (1997) noted that it occurs in ‘lowlands only’. Our only observation, a group of four birds in cleared garden land below Kanikeh at 560 m on 19 February 2012, may be a new altitudinal record for Seram.

**DISCUSSION**

The above observations extend the known altitudinal ranges of 32 species occurring on Buru and Seram. Many species’s altitudinal distributions were no doubt previously underestimated due to the islands being understudied, particularly at higher elevations. Some birds, such as Red-bellied Pitta, appear to be seasonally vocal, which presumably led to their being overlooked by earlier visitors. In addition, the importance of concerted mist-netting efforts was underscored on these expeditions, as inconspicuous species such

as Seram Masked Owl, Buru and Seram Thrushes, and Variable Kingfisher would otherwise have frequently gone undetected. Both Buru and Seram have now received reasonable coverage by ornithologists from sea level to about 1,800 m, but there remains a severe lack of distributional data for certain rare endemic species which occur at these altitudes, particularly Black-lored Parrot, Blue-fronted Lorikeet, and Rufous-throated White-eye on Buru, and Seram Masked Owl on Seram. In addition, bird distributions on the highest elevations of Buru and Seram remain poorly known. Intensive surveying from 1,800 m to the 3,027 m peak of Gn Binaiya would most probably yield a number of range extensions, but the most glaring knowledge gaps undoubtedly exist on Buru. Buru's eastern highlands remain unexplored by ornithologists; so too does the extensive high plateau area above 2,000 m in the west. While difficult to access, this plateau is of considerable interest, not least because surveying work here would help to clarify the distributional limits of Rufous-throated White-eye.

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- Andrew H. REEVE**, Center for Macroecology Evolution and Climate at the Natural History Museum of Denmark, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen Ø, Denmark. Email: hrt506@alumni.ku.dk
- Tri HARYOKO**, Museum Zoologicum Bogoriense, Research Center for Biology, Indonesian Institute of Sciences, Jl. Raya Jakarta-Bogor KM. 46, Cibinong 16911, Indonesia. Email: trih007@gmail.com
- Michael K. POULSEN**, Nordic Agency for Development and Ecology (NORDECO), Skindergade 23, DK-1159 Copenhagen K, Denmark. Email: mkp@nordeco.dk
- Pierre-Henri FABRE**, Center for Macroecology Evolution and Climate at the Natural History Museum of Denmark, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen Ø, Denmark. Email: phfmourade@gmail.com
- Knud A. JØNSSON**, Center for Macroecology Evolution and Climate at the Natural History Museum of Denmark, University of Copenhagen, Universitetsparken 15, DK-2100 Copenhagen Ø, Denmark. Email: KAJonsson@snm.ku.dk