

## Breeding, Plumages and Vocalisations of the Pied Bush Chat *Saxicola caprata pyrrhonotus* on Kisar Island, Lesser Sundas

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**Summary:** The Pied Bush Chat *Saxicola caprata* occurs widely in South, South-east Asia, and the Papuan region with 16 subspecies recognised including *pyrrhonotus* in the Timor region. Observations on the small island of Kisar, 25 km north of eastern Timor-Leste, revealed that the females differed from those of Timor, and may represent an undescribed subspecies. Females on Kisar had a cream-coloured throat with grey-brown streaks, and the breast and belly were streaked with dark brown, whereas those on Timor and Wetar have these parts plain light brown or rufous. The song of the Kisar bird also differed from those on Timor, but there is substantial variation in vocalisations among individuals, making quantitative inter-island comparisons difficult. Breeding was evident in October and the fledglings were found to be sexually-dimorphic as reported elsewhere for this species.

**Ringkasan:** *Saxicola caprata* terdapat secara luas di Asia Tenggara dan Selatan serta kawasan Papua dengan 16 anak jenis termasuk *pyrrhonotus* yang ada di kawasan Timor. Hasil-hasil pengamatan di pulau Kisar, 25 km dari Timor Leste menunjukkan bahwa individu betina berbeda dari jenis yang berada di Timor dan mungkin mewakili anak jenis yang belum terdeskripsikan. Burung betina di pulau Kisar memiliki tenggorokan berwarna krem dengan garis-garis abu-abu coklat, serta bagian dada dan perut yang bergaris-garis coklat gelap. Sedangkan burung yang di Timor dan Wetar memiliki warna polos agak coklat terang atau coklat kemerahan pada bagian tenggorokan, dada dan perutnya. Suara burung yang terdapat di pulau Kisar juga berbeda dari burung yang terdapat di Timor, namun dalam hal vokalisasi ada variasi yang substantif diantara individu-individu burung tersebut sehingga jika dilakukan perbandingan kuantitatif diantara burung-burung di pulau-pulau tersebut menjadi sulit.

### Introduction

The Pied Bush Chat *Saxicola caprata* occurs widely in South and South-east Asia, Sulawesi, the Lesser Sundas, Philippines, New Guinea and the Bismarck Archipelago (Coates and Bishop 1997). The species exhibits extensive morphological variation and 16 subspecies are recognised (Collar 2005). Wallacea hosts five subspecies, including four that are endemic, with *S. c. fruticola* present from Lombok through Flores to Alor, *pyrrhonotus* in the Timor region (Savu, Roti, Dao, Doo, Semau, Timor, Wetar, Kisar and Atauro), *francki* in Sumba, *cognata* in Babar and *albonotata* in Sulawesi (White & Bruce 1986; Urquhart & Bowley 2002; Trainor & Soares 2004). Males of *fruticola* and *pyrrhonotus* are indistinguishable (Urquhart & Bowley 2002), but females of these two races differ in plumage, mainly on the underparts, those of *pyrrhonotus* being plain rufous brown without streaking,

while those of *fruticola* are noticeably streaked below. However both subspecies show subtle variations in plumage between islands. Female *pyrrhonotus* on Timor have rufous undertail coverts, but two specimens from Savu (Sabu) and Kisar have white undertail coverts. Savu females also have white bases to the greater wing coverts, whilst this patch is absent from female specimens from Timor and Kisar (Urquhart & Bowley 2002). The apparent divergence in female plumage on islands off Timor suggests that these populations may refer to unrecognised taxa.

Kisar is a small (117 km<sup>2</sup>) island lying 25 km north of eastern Timor-Leste, and administratively is part of the South West Maluku regency in Maluku Province. It is one of the driest islands (c. 900 mm/yr) in Indonesia, is heavily populated (145 persons per km<sup>2</sup>) and consequently is dominated by open savanna woodlands featuring Lontar Palm *Borassus flabellifer*, *Schleichera oleosa*, and *Acacia* and *Ziziphus* spp (Plate 1) and gardens in various states of regeneration. Heinrich Kühn collected six Pied Bush Chat specimens (three adult males, two females and a juvenile male) on Kisar in April and May 1901 (Hartert 1904). The species was also recorded on Kisar in 2001 (Trainor 2003) and in 2008 (B. King *in litt.* 2009) but there are no details available on the abundance, habitat or plumage of this population. I transited on Kisar from 26 to 31 October 2010 and made observations of Pied Bush Chats around the town of Wonreli. I also made notes of the plumage of an adult pair of Pied Bush Chats attending a nest with chicks near the airport in the north-east of the island, and of another pair with fledglings in the central-west, and took photographs to illustrate features.



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**Plate 1:** Typical lontar palm *Borassus flabellifer*-dominated savanna woodland on Kisar

### **Abundance, plumages and breeding**

The Pied Bush Chat is one of the most abundant and widespread birds on Kisar, with perhaps as much as 99% of the island providing suitable habitat such as savanna woodland or gardens or shrubland with occasional trees. I crudely estimated that each pair occupied c. 2 ha. Assuming an even population density, the population on the island may consist of over 2,800 pairs). As with populations on New Guinea

(Bell & Swainson 1985), birds on Kisar inhabit and successfully bred in heavily populated towns and villages.

The adult male on Kisar was black with a white shoulder patch as described for Timor and Wetar. The adult female, however, had the throat cream with grey-brown streaks, the breast and belly streaked with dark brown (Plate 2a), whereas females on Timor and Wetar have these parts plain light brown or rufous (Plate 2b), as portrayed in Coates & Bishop (1997). On 26 October I observed and then took a series of photographs of an adult female Pied Bush Chat (Plate 2a) with a cricket (Orthoptera: Gryllinae) in tall roadside-verge grass. Unbeknown to me, I was sitting very close to its nest. The female flew to the nest which was constructed of grass stems and twigs between the fronds of a Lontar (Plate 3) at 1.8 m above the ground. She fed the cricket to fledglings, which vocalised but I did not record or note down the calls. Although the nest was not inspected, at least two nestlings were heard.



**Plate 2:** (a, left) Adult female Pied Bush Chats on Kisar, with cricket in bill; (b, right) adult female on Wetar on 29 September 2010. Note the streaked pale rufous breast and belly on former, and the bright but unstreaked rufous underparts on the latter.

On 29-30 October 2010, I regularly observed and photographed an adult female bird feeding two fledglings (Plate 4) and made recordings of vocalisations given by the latter. The fledglings were obviously sexually dimorphic, the male being mostly black, with a buff belly becoming lighter on the vent, and extensive cream patches on the greater wing coverts. Its primaries, secondaries and scapulars were edged with white or cream (Plates 4, 5). The female fledgling, on the other hand, was predominantly buff brown, with a rich rufous rump (Plates 4, 6). However, both sexes were dotted with buff on the chest, belly, crown and back, and had blackish legs and yellow-orange rictal flanges (gape). Another female Pied Bush Chat fledgling was photographed at 2,400 m on Mount Mutis on 3 January 2010 (Plate 6) which had similar plumage to the female fledgling on Kisar.



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**Plate 3:** Nest of Pied Bush Chat between fronds of Lontar palm, Kisar island



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**Plate 4:** Adult female Pied Bush Chat on Kisar, with fledgling female (left) and fledgling male (right). Note streaked chest and belly on adult female



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**Plate 5:** Male fledgling Pied Bush Chat on Kisar island (left); Female fledgling Pied Bush Chat on Kisar (centre) and Mount Mutis, West Timor (right), on 3 January 2010

## Vocalisations

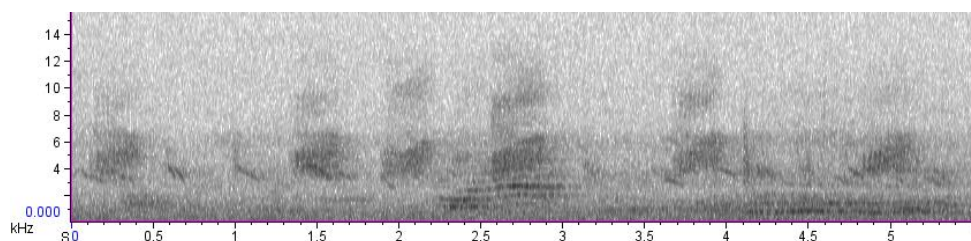
Only adult males of the species produce a song, which has accurately been described as ‘a short, high pitched, musical, warbled phrase of variable pattern, repeated at intervals of a few seconds’ though highly variable between islands and subspecies (Coates & Bishop 1997), and perhaps time of day and individual. The song of males on Kisar was complex with a thrush-like quality, comprising at least 15 notes. A similar type of call, ‘a very fast series of c. 15 notes somewhat stilted, medium pitched whistled notes’ has been described for the Sumba subspecies *francki* (Coates & Bishop 1997).

The frequency range of a male on Kisar was similar (3,000-6,000kHz) to that of males on Timor, but the former was higher pitched than the latter (Fig. 1a,b). Both the Flores and Timor (but not Kisar) song recordings end in a brief trill-like set of notes (Fig. 1c,d). Both the male and female fledglings gave buzzy moderately high-pitched ‘grive’ notes at 3,000-6,000kHz which were given for several minutes at least, with 0.4-0.6 secs between notes (Fig. 1c). Previously ‘rasping creek creek’ notes had been described for near-fledglings (Urquhart & Bowley 2002).

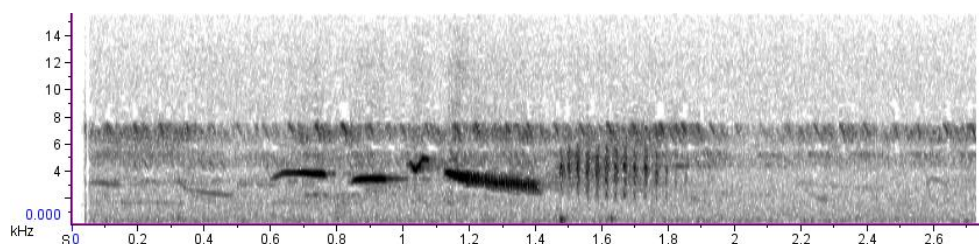
## Discussion

The Pied Bush Chat on Kisar may represent an undescribed form, as the underparts of the adult female are streaked, whereas the illustration of *pyrrhonotus* in Urquhart & Bowley (2002) shows uniform rufous underparts. Curiously, the illustration of this race in Collar (2005) shows faint streaking on the whole of the underparts. My observations from Kisar suggest there is greater morphological variability within *pyrrhonotus* than previously recognised, and that relatively weak island isolation can promote differentiation in this species. Unfortunately there is no description of females from Atauro Island (21 km off Timor), the avifauna of which has only recently been described (Trainor & Soares 2004; Trainor & Leitao 2007). Interesting, populations of the ‘Timor-endemic’ White-bellied Bushchat (*S. gutturalis*) on Roti and Semau lying just 10 and 3 km off southwest Timor respectively, have songs distinctive from the nominate Timor bird (Trainor 2005, unpubl data).

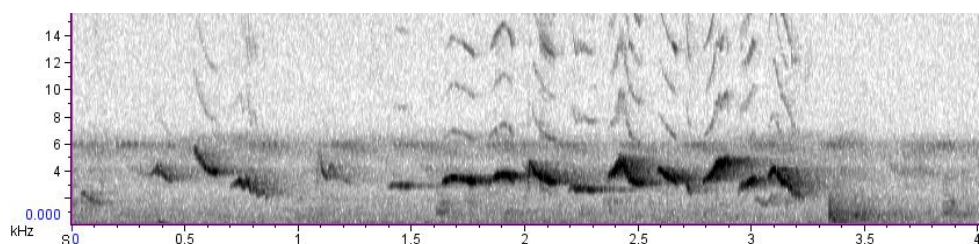
Pied Bush Chats are known to nest in earth burrows, tree hollows and in the walls of houses and wells (Bell & Swainson 1985). They are known to have double or triple broods (Bell & Swainson 1985) so are likely to have a long breeding season. On Flores, *fruticola* breeds during the dry season from July to November, with 94 of 132 records (71%) during October and November (Verheijen 1964). Breeding records in Timor suggest egg laying in October (2), November (2), January (1) and February (1) (Noske 2003). On Roti a nest with chicks was found in October (Johnstone & Jepson 1996). The incubation period of the species in New Guinea is 14 days, and young fledge after 18 days in the nest (Bell & Swainson 1985), suggesting that eggs were laid at Wonreli in early October. The Kisar breeding observations thus fall within the apparent peak breeding period of October-November which seems timed so that juveniles are independent at the start of the wet season when insect abundance at ground level might be expected to be high.



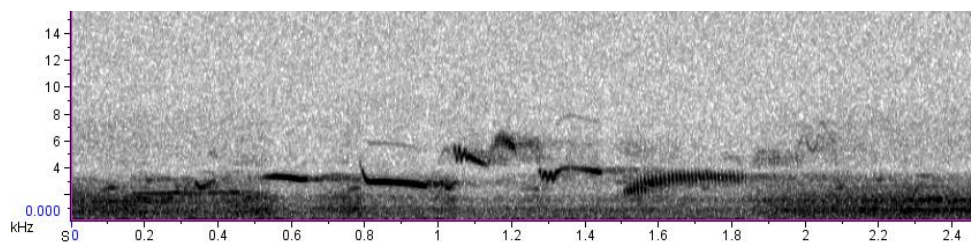
**Figure 1a:** Notes given by a fledgling bird on Kisar island



**Figure 1b:** Complex thrush-like song given by adult male bird on Kisar, shortly before dusk



**Figure 1c:** A typical song of *pyrrhonotus* on Timor (Colin Trainor, [XC36764](#))



**Figure 1d:** Song of *fruticola* on Flores (Allen T. Chartier, [XC31442](#))

The juvenile plumage of Kisar birds is consistent with descriptions for the species as a whole (Urquhart & Bowley 2002). Bell & Swainson (1985) discovered that young birds can be readily sexed before they leave the nest. Females lose juvenile plumage about 6-8 weeks after leaving the nest (Bell & Swainson 1985).

The variability in songs between individuals probably reduces the potential value of vocalisations in determining the distinctiveness of the various races, but further work including greater sampling intensity of island populations in the Lesser Sundas would be useful in determining the degree of song variability. The song of the Pied Bush Chat is a complex series of warbled or whistled notes, given mostly before or after dawn, and before dusk; individual birds also have a repertoire of several tunes (Urquhart & Bowley 2002).

## Acknowledgements

I thank Richard Noske for providing some references and for helping to improve the text, and Craig Robson and an anonymous reviewer for their useful comments on earlier drafts.

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