

DIVERSITY OF UNDERSTOREY RESIDENCE BIRD IN RECENTLY DISTURBED
AND REGENERATED FOREST IN PENINSULAR MALAYSIA

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ABSTRACT

The understanding of the relationship between avian community structure and environmental/ecological change has become the priority for biodiversity conservation processes and predicting the environmental health. Microhabitat change due to logging is one of the components that affects the species composition in the forest understorey. Forest regeneration allows the recovery of understorey bird species to almost as unlogged forest. However, the process generally will take a long period. The aim of this study is to document diversity and composition of understorey bird species inhabiting two forests of about 30 and 50 years after logging. Mist-netting technique was applied in both study areas during twelve visits from January to December 2007. A total of 1423 birds, belonging to 108 species (24 families) were trapped. Of this, 1043 individuals (from 100 species and 24 families) were recorded in the 30 years-old forest and 380 individuals (from 54 species and 15 families) were trapped in the 50 years-old regenerated forest. Species similarity between both regenerated forests was less than 50%. The family Pycnonotidae and Nectariniidae formed considerable proportion (>50%) of total species captured in both areas. Several primary forest babblers such as Short-tailed Babbler (*Malacocincla malaccensis*) and Black capped Babbler (*Pollerneum capistratum*) was abundantly caught and had successfully recolonized both forests. This could be due to the presence of undisturbed forest patches that was left untouched during logging activity and the restoration/regeneration process to a well develop canopy and sparse ground cover. Although considered as species that is sensitive to disturbance, several species of woodpeckers were also recorded in both regenerated forests. Some upper strata specialist such as Black and Yellow Broadbill (*Eurylaimus ochromalus*), Dark throated Oriole (*Oriolus xanthonotus*) and Crested Jay (*Platylophus galericulatus*) were captured by mist-nets indicating that the birds were

foraging at lower strata, perhaps due to more food resources at lower strata. The presence of 23 nearly threatened species and two vulnerable species (Brown chested Jungle Flycatcher, *Rhinomyias brunneata* and Blue banded Kingfisher, *Alcedo euryzona*) in both study areas indicates that the reserves possess valuable resources for survival of critical species even after original forest structure was disturbed by logging activity.

ABSTRAK

Memahami perhubungan antara struktur komuniti burung dan perubahan alam sekitar/ekologi telah menjadi keutamaan dalam proses pemuliharaan biodiversiti dan dalam meramalkan kesihatan alam sekitar. Perubahan habitat mikro disebabkan oleh aktiviti pembalakan merupakan komponen yang mempengaruhi komposisi spesies burung bawah kanopi hutan. Sesaran hutan mengikut masa membenarkan pemulihan spesies burung menyamai spesies yang mendiami hutan asli yang tidak dibalakan namun mengambil masa yang agak lama. Tujuan utama kajian ini adalah untuk merekodkan diversiti dan komposisi spesies burung bawah kanopi yang mendiami dua hutan iaitu 30 dan 50 tahun selepas dibalakan. Teknik jaring kabut telah digunakan di kedua-dua kawasan kajian untuk merekodkan diversiti burung dalam dua belas lawatan dari Januari hingga Disember 2007. Sejumlah 1432 ekor burung tergolong ke dalam 108 spesies (24 famili) telah ditangkap. Daripada jumlah tersebut, 1043 individu (daripada 120 spesies dan 24 famili) telah direkodkan di hutan 30 tahun selepas dibalakan dan sebanyak 380 individu (daripada 54 spesies dan 15 famili) pula ditangkap di hutan 50 tahun selepas dibalakan. Nilai kesamaan spesies burung bagi kedua-dua hutan kajian adalah kurang daripada 50%. Spesies burung dari famili Pycnonotidae dan Nectariniidae adalah yang paling banyak ditangkap di kedua-dua hutan (>50%). Beberapa spesies burung hutan primer seperti Rimba ekor pendek (*Trichastoma malaccense*) dan Rimba kepala hitam (*Pellorneum capistratum*) juga banyak ditangkap dan telah berjaya menguasai kedua-dua hutan. Ini kemungkinan disebabkan kehadiran kawasan hutan yang tidak diganggu atau kawasan yang mengalami gangguan yang minima semasa aktiviti pembalakan berserta dengan pemulihan hutan kepada pembentukan kanopi dan lantai hutan yang mempunyai vegetasi yang minima. Walaupun dianggap spesies yang sensitif terhadap gangguan,

beberapa spesies belatuk juga direkodkan di kedua-dua kawasan kajian. Beberapa spesies yang biasanya mendiami strata atasan seperti Takau kasturi (*Eurylaimus ochromalus*), Burung kunyit bercoreng (*Oriolus xanthonotus*) dan Burung menjerit (*Platylophus galericulatus*) juga telah ditangkap menggunakan jaring kabut, menunjukkan spesies tersebut menggunakan lapisan strata bawahan untuk mencari makanan. Ini kemungkinan disebabkan terdapat banyak makanan di strata bawahan. Kehadiran 23 spesies hampir terancam dan dua spesies terancam (Sambar Hutan, *Rhinomyias brunneata* and Binti-Binti Besar, *Alcedo euryzona*) di kedua-dua kawasan kajian menunjukkan hutan simpan tersebut mempunyai sumber yang masih bernilai untuk kemandirian species kritikal walaupun selepas mengalami gangguan teruk dari aktiviti pembalakan.

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