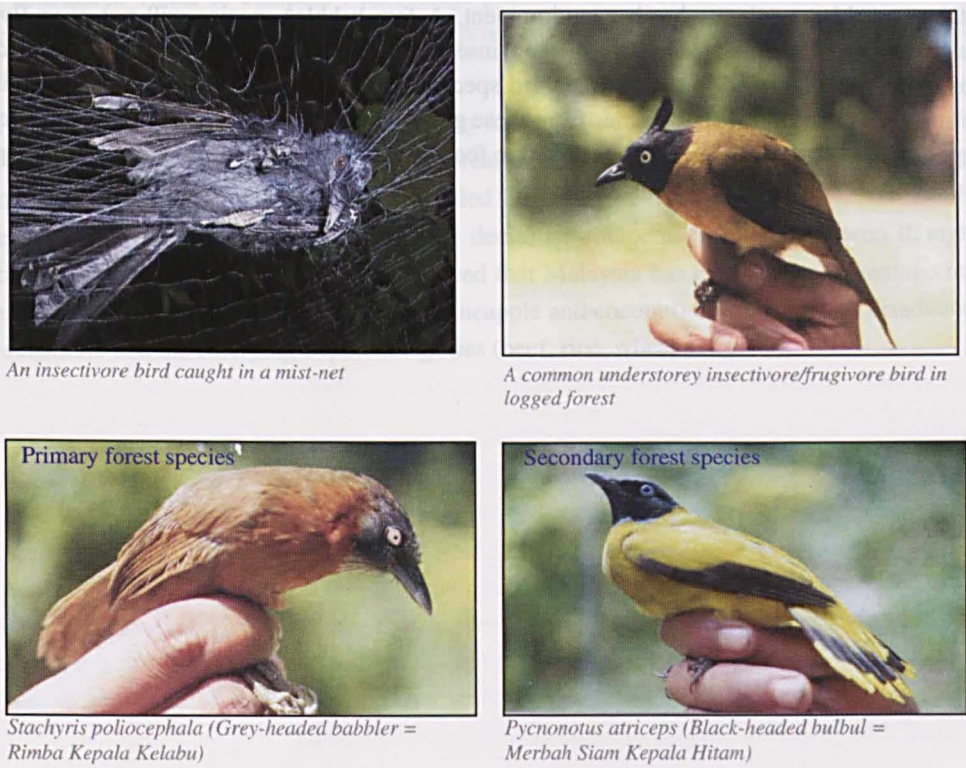


Immediate Effects of Selective Logging on the Feeding Guild of the Understorey Insectivorous Bird Species



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Many of the wildlife species such as birds (e.g. babblers, flycatchers and broadbills) in the tropic prefer to occupy the primary rainforests as their main habitat (Zakaria and Nordin 1998). Although the primary forest in the world is being destroyed everyday and will become a secondary forest, the forest is still able to provide food source and shelter for many wildlife species to survive (Zakaria and Francis 2001). One of the important impacts of primary forest destruction on bird population is a decrease in species number and change in bird community (Zakaria and Francis 2001). Understorey species have been suggested to be affected mostly when the forest structure is altered (Zakaria et al. 2002). This is because understorey species are highly sensitive to high temperature and light intensity. Moreover, the forest regeneration rates will remain a long time before it can recover to original condition.



This study examined in detail the feeding guilds of understorey insectivorous birds in primary forest (before logging). The same study was repeated immediately after the forest was logged and the information obtained was compared to see whether there were any changes to the feeding guilds. This study was conducted in Ulu Muda Forest Reserve, Kedah, Malaysia. The area was considered a primary hill forest that covers an area of 791.2 ha. The main objective of this study is to determine the changes of feeding guild of the understorey insectivorous birds before and immediately after logging. Mist-netting method was used to obtain the information on the birds. Pre-logging data collection was conducted from January to December 1997. Post-logging data collection was started from January to December 2000 that is immediately after the completion of logging activities 1.

Results indicated that before logging, 70.3% of the understorey birds were dominated by insectivore group and insectivore/frugivore (16.0%) and frugivore groups (5.1%). However, the insectivore/frugivore group dominated the area immediately after logging (47.3%), followed by insectivore (28.2%) and nectarivore/insectivore/frugivore groups (13.0%). Analysis of feeding guild also shows that primary forest was dominated mainly by the species that belongs to arboreal foliage gleaning insectivore (33.3%), but they decreased to 29.6% in area immediately after logging. In term of the number of individuals, 37.7% of the insectivore guild was recorded in primary compared to only 14.8% in logged area. The arboreal foliage gleaning insectivore/frugivore was found to be higher in term of number of species (28.2%) and individuals (47.3%) in area immediately after logging. Therefore this study suggested that logging has changed the feeding guild structures of the understorey insectivorous birds.

Some species showed positive while others showed negative impacts due to logging. It has been suggested that the changes may be due to alteration in microclimate condition (temperature, light intensity and humidity). Large gaps may increase the temperature, increase light intensity and lower the humidity of the forest interior. It was found that some species, particularly the understorey insectivore babblers and flycatchers could not tolerate harsher environment. A few babbler species will not even fly across sunlit patches. However, species from the insectivore/frugivore (bulbul species) and nectarivore/insectivore/frugivore (flowerpecker/sunbird species) groups were recorded higher following logging. This suggested that most of the species from these guilds could tolerate the harsh microclimate condition in logged forest. They also have been observed to feed on insects and small fruits of secondary plants.

Reader Enquiry

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