Abstract

Currently, the management of forests in Malaysia is facing new challenges as harvesting of production forests experiences a shift from the generally rich, and productive undisturbed forests to logged-over forests. In the very near future, all forest harvesting is expected to take place only in logged-over forests. One of the main challenges involves the classification of the forests by stocking classes. This problem does not exist in the management of undisturbed forest as the forests are generally homogenous in terms of size class distribution, and as such, the implementation of pre-felling inventory throughout the whole compartment to assess the growing stock is adequate. However, second growth forests logged more than 20 years ago are more heterogeneous in nature with high variations in size class distribution due to the previous harvesting operations. This characteristic is expected to be more profound in forest types with high clumping features or where harvesting was unevenly implemented, thus creating a patchy nature.

To understand this, a study was conducted to assess and classify the second growth forests located in Tekam Forest Reserve in Pahang and Cherul Forest Reserve in Terengganu. A look at the stocking of second growth forests of various ages on both sites indicated that there was no particular trends of forest recovery. Classifying such forests based on years after logging was found to be unveiling. Since the study areas are large and heterogeneous, classification was made based on forest canopy densities. The approach was based on Forest Canopy Density (FCD) Model developed by the International Tropical Timber Organisation (ITTO) and was successfully tested in several tropical forest areas. Landsat 7 ETM+ imageries of the year 2003 were used for the classification. The classification yielded 4 FCD classes, namely Low (1-30%), Medium...
(31-50%), High (51-70%) and Very High (>70%). It was found that this approach gave a better reflection of the forest stocking classes and was more pragmatic to be implemented in large forest areas. The FCD classes could be used for forest classification although further refinement may be required to enhance forest management at the operational scale.

Author keywords
Forest canopy density; Forest classification; Logged-over forest

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