

## Reclassifying forest type to a new forest class based on vegetation and lithology characteristics using geographic information system at southern Johore, Malaysia

### ABSTRACT

Recently forest resources management with regard to precision forestry concept has been highlighted by forest managers, in order to fulfill the demand on quality and reliable information about forest area. According to the Malaysian National Forestry Act 1984, forest is classified into several types by general classification which is based on vegetation types broadly into dipterocarp forest, peat swamp forest and mangrove forest. In applying precision forestry approach, details classification and information are required to render more accurate about managed forest. Therefore, this study was carried out to reclassify forest type to a new forest class based on vegetation and lithology characteristic using GIS technique. Ten new classes were successfully generated and mapped by fusing layer of forest vegetation types and lithology layer in Southern Johore, namely Dipterocarp-Igneous, Dipterocarp-Sediment, Dipterocarp-Alluvial, Peat-Igneous, Peat-Sediment, Peat-Alluvial, Mangrove-Igneous, Mangrove-Sediment, Mangrove-Alluvial and Limestone forest. In this study, *Syzygium* spp. (19.83 %) was found in abundance in two new forest classes; Dipterocarp-Igneous and Dipterocarp-Sediment forest in Hulu Sedili Permanent Forest Reserve (PFR). Beside that, *Elateriospermum tapos* (9.92 %) and family of Lauraceae (7.22 %) were found to be the most dominant species in the Dipterocarp-Sediment forest, while *Macaranga* spp. (11.21 %) and *Elateriospermum tapos* (11.02 %) found dominant in Dipterocarp-Igneous forest. From the sample plot, Dipterocarpaceae family constituted only 3.09 % whereas the non-Dipterocarpaceae family was 96.91 %. Hence, this study indicated that there is variation in species dominancy at different lithology of the same forest vegetation site.

**Keyword:** Geographic information system, reclassify, new forest class, precision forestry, dominant species