

Monitoring of deforestation and fragmentation in Sarawak, Malaysia between 1990 and 2009 using Landsat and SPOT images

Abstract

Sarawak is the largest state in Malaysia that covers 37.5% of the total land area. Multitemporal satellite images of Landsat and SPOT were used to examine deforestation and forest fragmentation in Sarawak between 1990 and 2009. Supervised classification with maximum likelihood classifier was used to classify the land cover types in Sarawak. The overall accuracies of all classifications were more than 80%. Our results showed that forests were reduced at 0.62% annually during the two decades. The peat swamp forest suffered a tremendous loss of almost 50% between 1990 and 2009 especially at coastal divisions due to intensified oil palm plantation development. Fragmentation analysis revealed the loss of about 65% of the core area of intact forest during the change period. The core area of peat swamp forest had almost completely disappeared during the two decades.