

Mapping of year-to-year deforestation area in insular Southeast Asia

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Accurate mapping of year-to-year variability of the spatial distribution of deforestation is important to evaluate the biodiversity, ecosystem functions and services in tropical ecosystems under rapid human activities. In Malaysia and Indonesia, deforestation and vegetation plantation establishment by planting oil palm or acacia have continued. Here, we examined the ratio of the number of days of Terra and Aqua MODIS satellite-observed daily green-red vegetation index (GRVI) < 0 to number of days of all GRVI with high quality (mainly without cloud contamination) for each year from 2001 to 2014 in insular Southeast Asia. We found that the area of deforestation and vegetation recovery were detected each year in southern part of Malay Peninsula, lowland area in Sumatra, and Sarawak and Central Kalimantan in Borneo. Our finding suggests that the biodiversity, ecosystem functions and services may be deteriorating in large areas in Malaysia and Indonesia.

Keywords: satellite observation, deforestation, year-to-year variability, insular Southeast Asia