

Assessing forest cover changes from Multi-temporal Landsat data for selected locations in Myanmar (Burma)

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Abstract

Myanmar is one of the most forested countries and great value for global efforts in biodiversity conservation in mainland South-east Asia. Earth Science Data Records (ESDR) of Global Forest Cover Change (FCC), was provided as basic data at fine resolutions (30- to 60-m) for four epochs: 1990, 2000, 2005 and 2010 to assess forest cover change within the selected areas.

The algorithm for mapping forest change using above images was the Training Data Automation and Support Vector Machines (TDA-SVM) method developed by Huang et al. (2008). Previous assessments showed that this method performed well in most forest biomes where forests have closed or near-closed canopy cover, but the performance was less satisfactory in different climate and phenology stages. An improving method by considering leaf-on / off season, cloud and shadow to remove terrain effects on classification and change detection so as to obtain more accurate estimates forest cover change map. The analysis concerns five classes: shadow, cloud, water, nonforest2forest and nonforest2nonforest.

The final forest change maps showed that the forests have declined by 0.3-0.5% annually. Major reasons for forest losses in these hotspots stemmed from increased agricultural conversion, fuelwood consumption, charcoal production, commercial logging and plantation development.

This research offers valuable information to understanding surface processes and interaction between human and the environment. Also, this information is useful to discover the driving forces of the forest changes and can provide policy decision supporting information to the local government in Malaysia.

Key Words: Forest Cover Changes; Landsat; TDA-SVM; Myanmar (Burma)