

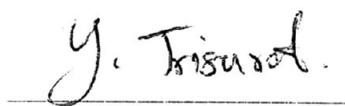
Narumol Noochplian 2006: Vegetation Classification Using Remotely Sensed Data, Geomorphometric Terrain and Topographic Parameter: A Case Study of Ngao Demonstration Forest, Lampang Province. Master of Science (Forestry), Major Field: Forest Biology, Department of Forest Biology. Thesis Advisor: Assistant Professor Yongyuth Trisurat, D.Tech.Sc. 86 pages.  
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This study aimed to improve vegetation map of Ngao Demonstration Forest, Lampang Province by using satellite imageries, geomorphometric and topographic data, and to compare the derived map with previous maps interpreted from aerial photos and satellite images. The research methodologies included collection of plant community, environmental factors e.g. altitude, slope, aspect, soil groups, rock types, precipitation and generated normalized difference vegetation index (NDVI). These data were converted to GIS database and integrated with Landsat 7 ETM+ for classifying vegetation map. The supervised classification technique of maximum likelihood decision rule was chosen for analysis.

The result showed that the vegetation of the study area can be divided into 4 main types, namely evergreen forest, mixed deciduous forest, dry dipterocarp forest and non forest area. Slope gradient was used to delineate limestone forest sub-type from other sub-types. This sub-type is distributed at slope greater than 30 degrees, covering 36.93 km<sup>2</sup>. Mixed deciduous forest is subdivided into 2 sub-types using elevation. Lower mixed deciduous forest is distributed at altitude lower than 500 msl, while upper mixed deciduous forest sub-types is scattered at altitude greater than 500 msl. The extents of these sub-types are 582.42 km<sup>2</sup> and 579.45 km<sup>2</sup>, respectively. Meanwhile, edaphic factor was chosen to discriminate dwarf dry dipterocarp forest and intact dry dipterocarp forest. Dwarf dry dipterocarp forest covers an area of 106.25 km<sup>2</sup> and intact dry dipterocarp forest occupies 44.80 km<sup>2</sup>. In addition the study shows that satellite imageries integrated with geomorphological and topographic factors can produce more classes than previous vegetation map derived from visual image interpretation by the Royal Forest Department. The overall accuracy of the new vegetation map is 72.28 %.



Student's signature



Thesis Advisor's signature

