

Supittra Nathomtong 2014: Forest Types Classification Using the Hyperspectral Data in Phluang Wildlife Sanctuary, Loei Province. Master of Science (Forest Resource Management), Major Filed: Forest Resource Management, Department of Forest Management. Thesis Advisor: Assistant Professor Weeraphart Khunrattanasiri, Dr.rer.nat. 69 pages.

The main objectives of this study entitled “Forest Types Classification Using the Hyperspectral Data in Phluang Wildlife Sanctuary, Loei Province” are to study on spectral reflectance characteristics, to produce spectral library of each forest type such as hill evergreen forest, dry evergreen forest, pine forest, mixed deciduous forest and dry dipterocarp forest and to produce forest map and database. The reference spectrum each forest in the study area have been collected by using spectrometer. Then the forest classification were calculated from the field data by using the spectral angle mapper method.

The study reveals that there is low spectral reflectance value from vegetation for the visible range band. For near infrared band (NIR) shows that there is high spectral reflectance value. The spectrum library of each forest type have been produces from the different of spectral signature.

The range of spectral reflectance, or signature, of hill evergreen forest, pine forest, dry evergreen forest, mixed deciduous forest and dry dipterocarp forest are 0.0590-0.3441, 0.1212-0.3247, 0.0781-0.2505, 0.1330-0.5111 and 0.0786-0.3293. The accuracy of forest classification by using hyperspectbral image for hill evergreen forest, dry evergreen forest, pine forest, mixed deciduous forest and dry dipterocarp forest are 82 73 60 70 and 70 percentage. The overall accuracy is 80 percentage with Kappa index is 0.76.

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Student's signature

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Thesis Advisor' s signature