

Pornpan Jerdassawasin 2011: Analysis of Risk Occurrence for Forestry Case Using Geographic Information System in National Forest Reserved, Tak Province. Master of Science (Forest Resource and Environmental Administration), Major Field: Forest Resource and Environmental Administration, Interdisciplinary Graduate Program. Thesis Advisor: Assistant Professor Wanchai Arunpraparut, D.Agr. 106 pages.

Objectives of the study were to apply of Geographic Information System for analyzing factors which relevant to forestry cases given the risky forest areas with high probable occurrence for forestry case, and to be used as a guideline for formulating the protective plan, and combat forest law guilt which occurred in the national forest reserved, Tak Province. Thus, GIS coupled with Logistic Regression Analysis and model analysis by Maximum Entropy were employed for the data analysis. Hence, the efficiency of such 2 methods will be compared to each other in order to find the suitable method which will be employed for analyzing the risk occurrence for forestry case, and then it will be used as the guideline for forest resource management and administration with the high efficiency.

According to the result, it was found that there were 5 factors having relationship with the occurrence of forestry case by the 2 mentioned methods. They were forest area of Tak Province, average income in Tambon, distance away from road, distance away from ranger station and distance away from village. The model formulated by Maximum Entropy method presented the AUC value of 0.861 while the model formulated by Logistic Regression Analysis represented AUC value of 0.848. In addition, the map of occurrence for forestry case being made by logistic regression analysis has the accuracy level of 72.78 percent, while the map is being made by Maximum Entropy, has the accuracy level of 71.11 percent. Hence, the models derived from both methods have similar efficiency. This will has the risk occurrence for forest case at a very high level this represented in Mae La Mao, Mae Ra Mad, Mae Klong and Um Phang National Forest Reserved. Mae Sod, Chong Cab and Mae Kon Ken National Forest Reserved. These forest area are along the boundary connecting to Myanmar. Result of this study could be applied as a guideline for managing the targeted area in order to protect forest area especially in the areas with high risk probable occurrence for forestry case.

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