

Pattanapong Chankum 2007: Application of Geographic Information System and Remote Sensing for Fire Risk Area Assessment in Mae-Huad Sector of Mae-Ngao Demonstration Forest, Amphoe Ngao, Changwat Lampang. Master of Science (Forestry), Major Field: Forest Management, Department of Forest Management. Thesis Advisor: Assistant Professor Prasong Saquantam, M.S. 92 pages.

The purpose of this study is to evaluate the forest fire risky area by using Geographic Information System (GIS) and Remote Sensing (RS). The integration and analysis of GIS and RS was conducted using some environmental factors. The factors using in the study were (1) elevation (2) aspect (3) slope (4) distance from road (5) distance from river (6) distance from village (7) distance from agriculture area (8) Normalized Difference Vegetation Index (NDVI) (9) Green Vegetation Index (GVI) (10) band ratioing and (11) fuel biomass. The study compare these factors due to fire area occurred during 2004 to 2005 by using Stepwise Multiple Regression Analysis related to high risk level to assess fire risk area.

The results reveal that band ratioing, NDVI, fuel biomass are strong related to high risk level. the medium risk level is impact by GVI, distance from village distance from road, and distance from agriculture area, and the low risk level risky is relatively depend on distances from river, elevation and slope. It is able to classify the risk area into 3 classes that are low, medium and high risky levels those cover on area of 111.96 (27.46%), 159.58 (39.14 %) and 136.17 (33.40%) sq.km., respectively.

It is concluded that the study is useful for forest fire protection planning in part of fuel management and can predict the fire risk area. The mention above makes forest fire planning and operation in Mae-Ngao Demonstration Forest more efficient.

Pattanaopong Chankum

Student's signature

PRASONG Sa.

Thesis Advisor's signature

26 / Mar / 2007