

Nitchanun Boonyasup 2011: Application of Remote Sensing and GIS to Analyze Forest Corridors and Forest Management Guidelines in The Eastern Forest Complex. Master of Science (Forest Resource Management), Major Field: Forest Resource Management, Department of Forest Management. Thesis Advisor: Assistant Professor Kankhajane Chuchip, Dr.rer.nat. 117 pages.

The study aimed to determine forest corridors and prepare forest management guidelines in the eastern forest complex using Remote Sensing and Geographic Information System (GIS). Satellite image was used to identify forest cover and delineate as patches. Measurement and analysis of forest patches were carried out based on spatial statistics in landscape ecology approach. Forest corridors were then performed by means of spatial analysis using GIS. 6 criteria were adopted in the analytic hierarchy process (AHP) in order to prioritize group of derived corridors. The criteria are corridor length, corridor size, area of forest patch after performing corridor, legal status of land where corridor situated, length of water body within corridor boundary, and length of roads within corridor boundary. Some high rank corridors were selected to conduct field survey. Finally, the ecological status of the selected corridors was pointed out, and then appropriate management guidelines were introduced.

In the study, forest cover was classified as terrestrial forest covering an area of 3,276.13 km² or 21.55 % of the study area. Based on patch analysis, it indicates that the eastern forest complex has been fragmented into 652 patches with widely range of coverage area (SD = 7,869.11 sq.km.). Based on spatial analysis, 3,076 forest corridors have been created and prioritized. These corridors cover an area of varying size (widely from 0.0009 to 16.87 km²). Corridors with high-priority ranking are the ones that connect contiguous patches in the range of 100 to 300 meters wide. The most possible corridor which provides the linkage between protected areas could be established, namely, (1) a corridor established between Khao Khitchakut National Park and Kho Soi Dao Wildlife Sanctuary and (2) a corridor established among fragmented forest patches of Ao Kung Khaben Non-hunting Area. According to forest survey in the mentioned areas, it was found that both corridor sites have diverse flora and fauna species. The results from these investigations could lead to prepare guidelines for the management of the selected corridor as need.

Student's signature

Thesis Advisor's signature