



## **Thesis Abstract**

### **A GIS-Based Forest Resources Management System for Gibbon Protected Area in Trung Khanh Nature Reserve, Cao Bang Province, Vietnam**

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This study was conducted to develop a GIS-based forest resource management system for the Gibbon Protected Area in Trung Khanh District, Cao Bang Province, Vietnam. The study gathered primary vegetation data from 34 sample plots in the Cao Vit Gibbon Protected Area. Primary socio-economic data are also gathered through interviews with 74 households of the nearby villages. SPSS Regression is used to analyze the correlation between some socio-economic factors and Gibbon habitat. GAME model is used to develop a database system of forest resource management in the study area using ArcView software.

Analysis shows that there is a total of 131 trees, shrub, vine and herb species from 59 families found in the research area. Floristic composition analysis shows that the research area is dominated by some species such as *Cephalomappa sinensis*, *Dendrocnide urentissima*, *Radermachera sinica*, *Acer tonkinensis* Lecomte, and *Excentrodendron hsienmu*.

The study shows that local people rely on agricultural production, animal husbandry, forest products, gardening, fishery and wage labor for their income. Forest products rank third as main source of income in the nearby villages. However, firewood collection, timber cutting and livestock grazing pose a big threat to the Cao Vit Gibbon Protected Area. This is also reflected and affirmed through the correlation analysis. The study site has a generally steep topography with an elevation range of 500 – 1000masl and interrupted by lowland depressions. The analysis shows that human activities are mostly carried out in areas near the villages, at lower altitude, and less steep slope where accessibility is much easier.

Databases for forest resource management system are created through the GAME Model. The area and location of the suitable gibbon habitat are identified by GPA - FRMS. The study confirms that limited habitat and degraded vegetation, especially food plant species for gibbon, are reasons for larger number of Cao Vit gibbon in group (5 – 7 individuals). The potential Gibbon habitat is also assessed by using the GPA - FRMS, and own assumptions in lieu of very few studies on gibbons. The study is really useful not only for forest resources management in the Gibbon Protected Area but also for other protected areas in Vietnam.