Nattaphol Sisuruk 2012: Application of Geographic Information System in Evaluation of Habitat Suitability for Large Mammals in Huai Kha Khaeng Wildlife Sanctuary Master of Science (Forest Engineering), Major Field: Forest Engineering, Department of Forest Engineering. Thesis Advisor: Assistant Professor Wanchai Arunpraparut, D.Agr. 130 pages.

The objectives of this study is to find out the relationship between wildlife occurrences and environmental factors and to determine suitable habitats for five large mammals in Huai Kha Khaeng Wildlife Sanctuary. They are three meat-eating mammals, including leopard (*Panthera pardus*), tiger (*Panthera tigris*), leopard cat (*Prionailurus bengalensis*), and two even-toed ungulates, including barking deer (*Muntiacus muntjak*) and sambar deer (*Rusa unicolor*). The study used the occurrences data recorded from camera trap, Geographic Information System, physical and biological factors and Maximum Entropy algorithm to develop habitat suitability models, as well as to assess model accuracy using cross validation and overlay analysis method. The results indicated that considerable factors for meat-eating mammals were distance to road (49.8%), distance to ranger station (35.5%) and elevation (10.8%); and the accuracy of model was 59.52%. In addition, the considerable factors for even-toed ungulates were distance to road (69.8 %), distance to permanent stream (9.1%), slope (8.7%) and distance to seasonal stream (5.1%) and the model accuracy of even-toed ungulates group was 71.0%. The predicted suitable habitats for meat-eating mammals and even-toed ungulates cover 27.31% and 26.14% of the study area, respectively.

_____	_____	___ / ___ / ___
Student's signature	Thesis Advisor's signature	