Jutamas Tifong 2007: Homerange and Habitat Use of Rufous-necked Hornbill (*Aceros nipalensis*) determined by Radio Tracking in Huai Kha Khaeng Wildlife Sanctuary, Uthai Thani Province. Master of Science (Forestry), Major Field: Forest Biology, Department of Forest Biology. Thesis Advisor: Assistant. Professor. Vijak Chimchome, Ph.D. 138 pages.

The objectives of this research were to estimate home range size and habitat suitability for Rufous-necked Hornbills, using radio tracking within hill evergreen forest at Huai Kha Khaeng Wildlife Sanctuary. The duration of field work was from May 2004 to May 2007 and home range size between seasons and individuals were compared. GIS was used for data analysis and running the model variables and coefficients were determined using Logistic Regression.

Three Rufous-necked Hornbills from two nests, a male and a pair, were captured for back-mounting of radio transmitters suitable for hornbills. The mean home range size of all hornbills was $25.86 \pm$ S.D. 1.7 km^2. The differences in home range size between seasons were significant ($Z = -2.439$, $P = 0.015$), but not between genders ($Z = -0.456$, $P = 0.648$) or between males ($Z = -0.293$, $P = 0.770$). Home ranges for territorial males in the breeding and non-breeding seasons tended to be larger than for the female. The differences in daily movement between individuals and between seasons were significant ($t = 1.993$, $df = 2,874$, $P = 0.046$) and ($t = -4.403$, $df = 2,967$, $P = 0.000$) respectively. Daily movement of hornbills was further in the non-breeding season than the breeding season. A map of habitat suitability throughout the year showed that four environmental factors were significant influencing detection of hornbills and their habitat utilization. The factors consisted of elevation (DEM), slope, forest type and distance to streams. The modeling result can guide management of hill evergreen forest in Huai Kha Khaeng Wildlife Sanctuary for conserving the Rufous-necked Hornbill and other hornbill species.

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