

Permsak Kanishthajata 2013: Habitat Use and Home Range Size of Brown Hornbill (*Anorrhinus tickelli*) in Huai Kha Kheang 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. 116 pages.

The study of habitat use and home range size of Brown Hornbills, BH (*Anorrhinus tickelli*) by radio telemetry was aimed to estimate home range size, movement and their habitat utilization. The study was started from April 2005 to May 2008 in Huai Kha Khaeng Wildlife Sanctuary, Thailand. The 6 male BH from 4 nests were caught and tagged with the radio transmitter. The attempt to determine bird locations were carried out on every hour between 05.00 hr to 20.00 hr from two stations, 7-10 days a month.

By using Minimum Convex Polygon (MCP) at 95%, the average of home range size in breeding season, non-breeding season, and all year were $31.42 \pm 22.15 \text{ km}^2$, $32.73 \pm 14.12 \text{ km}^2$ and $32.41 \pm 15.88 \text{ km}^2$, respectively (n=3). The percentage of home range overlap in same nest in breeding season, non-breeding season, and all year were 70.20, 77.14 and 84.77 while the percentage of home range overlap between nest were, 22.78, 70.16 and 69.50, respectively. The percentage of home range of BH between breeding and non-breeding season was 83.22. The average of daily movement in breeding season, non-breeding season and all year were $4.78 \pm 1.79 \text{ km}$, $8.58 \pm 0.99 \text{ km}$ and $8.99 \pm 1.41 \text{ km}$, respectively. By Maximum Entropy method, the models indicated that the environmental factors influencing BH distribution were elevation (400-1,100 msl), forest types (dry evergreen, mixed deciduous and hill evergreen), NDVI (0.1-0.2), distance from stream (< 100 m) and slope (<160% or 58 degrees).

The overall results from this study show that BH potentially use large area from foothill to hill. BH are able to use and move among different types of forest. To protect the habitats used of BH adding with other management activities not only protect this species but also protect other species and biodiversity in Huai Kha Kheang Wildlife Sanctuary.

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