

Saksit Simcharoen 2008: Ecology of The Leopard (*Panthera pardus* Linn.) in Huai Kha Khaeng Wildlife Sanctuary. Doctor of Philosophy (Forestry), Major Field: Forestry, Interdisciplinary Graduate Program. Thesis Advisor: Associate Professor Utis Kutintara, Ph.D. 114 pages.

The ecology of leopards was researched in Huai Kha Khaeng Wildlife Sanctuary, west-central Thailand from 1994 to 1999. Sixteen leopards were captured in order to weigh and measure body size and fit them with radio collars to study their ecology and behavior. Data indicated that adult male leopards were significantly longer ($t=4.799$, $DF=6.404$, $p=0.003$) and heavier ($t=5.316$, $DF=9$, $p<0.001$) than adult female leopards. Eleven leopards were collared comprising four males and seven females. Radio telemetry data showed that home range size differed among sexes. However, home range size was found to be similar among leopards of the same sex. The average minimum convex polygon annual home range sizes (95%) were 45.3 ± 6.0 km², 22.3 ± 5.1 km² and 26.9 km² for adult males, adult females and sub-adult males respectively. Seasonal home range size of leopards was not found to be significantly different. Home range overlap was found between sexes (54.2%) and among females (38.6%), but overlap was not found among males. The average daily distances traveled were 2.30 km, 1.67 km and 1.71 km for adult males, adult females and sub-adult females respectively. Adult male daily movement was significantly different from that of adult female ($p<0.001$) or sub-adult female ($p<0.001$). The density estimate from radio telemetry was 6.1 ± 2.4 leopards/100 km². Using camera traps the density estimate from 1996 to 1999 based on capture-recapture statistical was 6.0 leopards/100 km² (range 9 to 29 leopards). Leopard densities decreased yearly over the study period from 7.9 to 5.2 and 4.9 leopards/100 km². A probable cause of density decrease was an increase in tiger density in the same area.

Leopards target a wide variety of prey including insects, reptiles and mammals. At least 22 species of mammals were found in leopard scats; the most common were ungulate (72.0%) and primate (16.3%). A comparison between tiger and leopard prey found that tiger selected larger mammals than leopard. Habitat selection varied to some degree between second and third order analysis. In general, leopards tended to select mixed deciduous forest types, low to medium slope types and areas close to stream channels. These results will help prioritize areas in Thailand for future leopard conservation efforts.

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Student's signature



Thesis Advisor's signature

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