

STUDI KARAKTERISTIK EKOLOGI HARIMAU SUMATERA [*Panthera tigris sumatrae* (Pocock 1929)] BERDASARKAN CAMERA TRAP DI LANSEKAP TESSO NILO–BUKIT TIGAPULUH, RIAU

TESIS

**Diajukan sebagai salah satu syarat untuk
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Title : STUDY ON ECOLOGICAL CHARACTERISTIC OF SUMATRAN
TIGER [*Panthera tigris sumatrae* (Pocock 1929)] USING CAMERA
TRAP IN TESSO NILO – BUKIT TIGAPULUH LANDSCAPE, RIAU

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SUMMARY

Tiger, *Panthera tigris*, is a flagship species and because of its charismatic has always been used as an icon to many conservation efforts in several countries. Nevertheless, three of tiger sub-species categorized extinct and two sub-species among others found in Indonesia. Sumatran tiger, *P.t. sumatrae*, is the last tiger sub-species that still lives in Indonesia whose status critically endangered.

Although it is highly threatened, still the tigers hunt and their habitat reduced at alarming rate. Recently, Sumatran tiger distribution and population estimated occupying in remaining forests patch habitat in Sumatra Island. Sumatran forests have lost largely for various uses in the last two decades. In Riau, within last 15 years the forest loss 1,17 million hectares or equivalent by 78,000 hectares per year. It is primarily caused by, forest conversion such as to plantations (mainly acacia, oil palm, rubber, and mixed agriculture), transmigration, and other developments.

The aims of this research was to map spatial distribution spatially and to estimate population of Sumatran tiger and its preys, their activity and its preys, and their home range. The survey was conducted at four study areas

those are Tesso Nilo National Park (TNTN), Rimbang Baling Game Reserve (RBGR), Kerumutan Game Reserve (KGR) and former HPH PT. Industries et Forest Asiatiques (PT. IFA) using camera trap and standardized capture-mark-recapture method between May 2005 to December 2006. The whole area survey covered 2,123.87 km². Camera trap installed in pair at 20-22 locations, which were set up in strategic locations to get tiger pictures at the area. The cameras placed approximately 3.95 km in distant which refers to minimum tiger home range in Sumatra.

There were 7,389 pictures obtained from 86 camera trap locations and 134.06 effective trap nights at four study areas. In ranks, the numbers of pictures gathered from the locations are Tesso Nilo (32.81%), Rimbang Baling (28.47%), HPH PT. IFA (26.40%) and Kerumutan (14.12%). The cameras detected 50 species range from small animal to large ones, including mammals, reptiles, and birds.

The Sumatran tiger was identified in accordance to stripe patterns, sexes, and body sizes, there were nine individual tigers identified in the study areas, 4 individuals in Tesso Nilo, 2 individuals in Rimbang Baling and 3 individuals in Kerumutan. The cameras also captured potential preys in various numbers of photos. The highest rank number of photos of Sumatran tiger preys was pig-tailed macaque.

The results of this research find out that the distribution of Sumatran tiger ranged from 30 meter above sea level (asl) to 460 m asl. There were eight individual tigers found below the 150 m asl and another one ranged

from 292-460 m asl. Sumatran tigers also found that most foraging activities did not far from river with mean of 0.38 km distant. The high temperature spots in study areas indicated that in order to fulfill their needs of water the Sumatran tigers were spreading around the stream. Sumatran tigers also found in various land cover area, which consist dry lowland forest, peat swamp, industrial timber plantation (acacia) and palm oil plantation. Sumatran tigers also found far from the human proximity with the mean of 12.52 km in distant to villages and 6.43 km to roads. Roads and villages in close to the distribution areas of Sumatran tiger will tiger conflicts, whether they are tiger-human conflicts or tiger-livestock.

Using capture-mark-recapture method and extrapolation analysis, Sumatran tiger population is estimated to 5 in Tesso Nilo, 9 in Rimbang Baling and 28 tigers in Kerumutan. Estimated densities ranged from 1.3-2.9 per 100 km² in Tesso Nilo, 0.7-3.0 per 100 km² in Rimbang Baling and 1.3-6.1 per 100 km² in Kerumutan. The sex ratio bias in population of Sumatran tiger in the areas is unfavorable. According to the sexual identification, it is found out that sex ratio of male tigers to the female ones 2:1 in Tesso Nilo, 1:0 in Rimbang Baling, and 1:2 in Kerumutan.

Home ranges of male and female tigers were found overlapping in the areas of study. In Rimbang Baling the home range of an individual male tiger covered at minimum 12.48 km², while in Tesso Nilo 26.60 km². The minimum home range of an individual female tiger in Tesso Nilo covered 7.18 km², while in Kerumutan 15.76 km². The vast areas of habitation, the food

supplies, the dense of population, places to have offspring, predatory activities, mating season, and source of water influence the distribution of Sumatran tigers.

The results of this research also points up that tigers have tendency to be active at both night and day time. Sumatran tigers were largely diurnal because 48% of their time is active at night and 52% at day time. It seems there is a correlation where active time of Sumatran tigers at the same time of the active time of their preys. Pig tailed macaque active time is on day light (95%), barking deer about 78% at day time, mouse deer about 75% at day time, wild pig about 87% at day time and sambar deer about 69% at night time. The tigers are active by time when its major prey is available. Pig tailed macaque and barking deer are available abundantly as preys.

X + 107 pp.; 2 append; 9 plates; 8 tables

Bibliography: 80 (1977-2007)