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RHINO SURVEY IN TABIN WILDLIFE RESERVE LAHAD DATU

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ABSTRACT

There is a minimum of 3 rhinoceros occupying the surveyed area of Tabin Wildlife Reserve, with the population density of 1/3,000 hectares. Most of the rhino tracks found during the survey were in the Virgin Jungle Reserve Number 35, which was surveyed on foot for approximately 110 km. The total distance covered on the ground during this survey is estimated to have been 229 km.

INTRODUCTION

Tabin Wildlife Reserve formerly identified as Silabukan Forest Reserve is believed to contain the most viable population of Sumatran Rhinoceros *(Dicerorhinus sumatransis harrissoni)* in Sabah and perhaps the entire Borneo. Danum Valley Conservation Area, an area of about 438 sq. km situated 85 km west of Lahad Datu, Sabah was also reported to harbour a significant Sumatran rhino population (Darus A.B. 1987).

Tabin Wildlife Reserve, located at the central Dent Peninsular of eastern Sabah covered an area of 120, 521 hectares was gazetted by State Government in March 1984 primarily for the conservation of wild breeding population of Asian two horned Sumatran rhinoceros (*Dicerorhinus sumatransis harrisson*), Asiatic elephant (*Elaphas maximus)* and also Tembadau or Banteng *(Bos javanicus)* (Andau M; 1987).

More than 90 % of the Reserve has been logged previously. Whilst intensive logging activities has been generally accepted to disrupt wildlife population in tropical forest, selective logging operation is believed to have no long term harmfull effects on Wildlife (Payne J. 1980). Previous disturbance by logging activities in the Reserve may have displaced the rhinos and other wildlife to the "Core Area" of the reserve and to other seven Virgin Jungle Reserves within the Tabin Wildlife Reserve where no logging activities has ever taken place.

The presence of Sumatran rhino in the Reserve was first established by the Faunal Survey team, Game Branch, Sabah Forestry Department in March 1980 (Payne J. 1980). Similar surveys were conducted in 1982 and 1986 (Payne J. 1982 and Payne J. 1986) to estimate the rhino population in the reserve. Data obtained from the previous two surveys indicated that the rhino population in Tabin Wildlife Reserve is decreasing at a rapid rate; presumably due to increased poaching.

The objectives of this survey were to estimate the rhino population of Tabin Wildlife Reserve and to compare the result with survey data obtained in the same area since 1980.

MATERIALS AND METHODS

The area which is located approximately between 5'03" - 5'24" North and 118' 27" - 188' 57" East was surveyed on foot by six survey teams comprising four person in each team. Count sign technique (Schemnitz S.D. 1980) was employed and all data were recorded in the data sheet as previously reported (Mohd Zuber bin Mohd Zain; 1983). The distance taken on foot during the survey was recorded by a pedometer.

RESULTS

The survey routes traversed on foot are shown in Figure 1. The cummulative total of the distance covered on the ground by all six groups were approximately 229 kilometers.

Rhino footprints were found at locations indicated in Figure 1 and listed as follows:

1. TR1 - Track of about 2 months old, found on 9 th October 1988.

2. TR2 - Track of about 2.5 months old, found on 11 th October 1988.

3. TR3 - Track of about 3 months old, found on 12 th October 1988.

4. TR4 - Track of about 1.5 months old found on 13 th October 1988. Measured approximately between 21 cm - 22 cm.

5. TR5 - Old track, found on 13 th October 1988.

6. TR6 - Fairly recent track found; obscured tracks due to rain and flooding in the last two days. The tracks were found by the Tabin River bank. Width was 22 cm (clear)

7. TR7 - About a week's old track; intermingled with bearded pig's track. Found on 8 th October 1988 with maximum widths of 18.5 cm (unclear), 17.3 cm (unclear) and 19.0 cm (clear).

The footprints found at TR1, TR2, TR3 and TR5 were obscured and thus no measurement was taken. TR4 and TR6 possibly represented one animal after carefully taken the footprint's size into consideration. TR4 indicated that this particular rhinoceros utilized the logging forest and TR6 appears to be enroute to Tabin River.

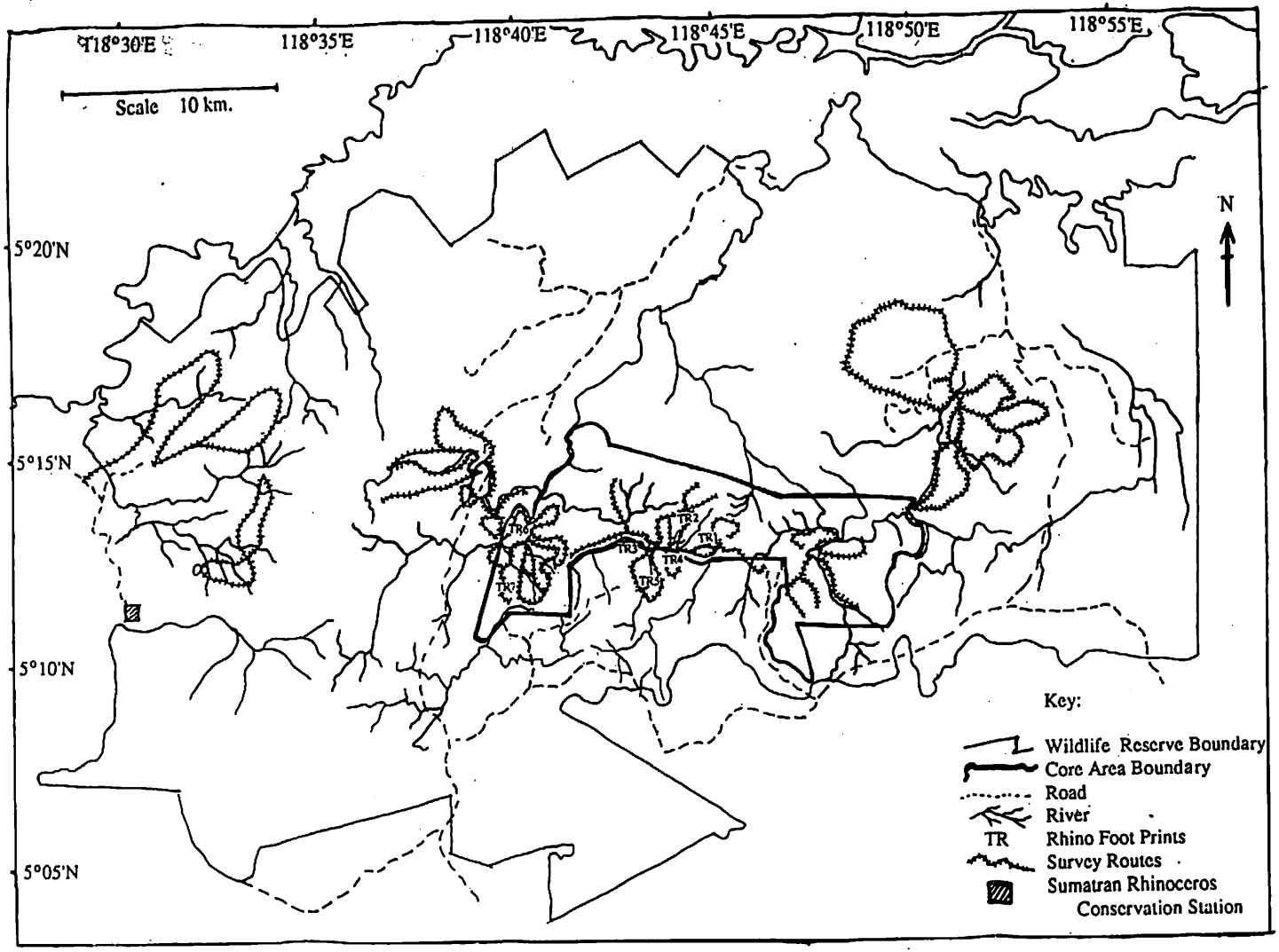

Figure 1 : Rhino survey in Tabin Wildlife Reserve

Rhinoceros in Sabah tend to stay in undisturbed forest, away from recently logged forest and would return only after the canopy has begun to grow over. Further, they were reported to follow and cross streams very frequently (Davis G. et al. 1982). If TR4 and TR6 represented one animal, it can be estimated that the animal have traversed a distance of about 5 to 10 km. Such deduction is quite possible, because studies on the same species in Indonesia indicated revealed that the average home range of female rhinoceros is 20 sq. km., 25 sq. km.; for sub adult and between 25 to 30 sq. km. for males, with daily movements of 777 meters for a single rhinoceros (Strien N.J. 1985). An estimate of 30 - 60 sq. km. home range has been reported in Silabukan Sabah (Davies G. *et al.* 1982). The footprint found at TR7 indicated two possible rhinoceros. The tracks were found near a mud wallow measuring 370 cm. long and 250 cm. wide. Based on our data, it can be estimated that there are a minimum of two or three adult rhino residing in the core area.

The rhino survey carried out in 1982 revealed at least 7 rhinos living partly or entirely within the remaining 28,000 ha of primary forest of Tabin Wildlife Reserve. Our survey reported here covered a distance of 250 km approximately on the ground by 5 team in 8 working days. In 1986, a similar survey was carried out in the same area by 3 teams involving 7 working days. The distance covered on the ground then was estimated to have been approximately 157 km. The survey reported here thus covered a smaller area of the "Core Area" compared to previous rhino surveys carried out in Tabin Wildlife Reserve.

Perhaps the most valuable aspect of the 1988 survey is that the rhino tracks were actually spotted within in the core area. The 1986 survey of the same area provided evidence of a minimum of 6 rhinos using the core area of Tabin Wildlife Reserve and the adjacent undisturb forests which has an area of about 11,700 ha. Only 3 rhinoceros are estimated to use this same area in 1988 survey. Thus comparing the 1986 and 1988 results as quantitatively as available data allows, the minimum population density of rhino in 1986 was 1 rhino/2000 ha. whereas in 1988 1 rhino/ 3000 ha. It should be cautioned that with animals existing in such low number, chance plays a significant part. Therefore, the quantitative estimate present here should be used merely to show that the population density of the rhino in the Tabin Core Area is lower than it was in 1986 probably twice as low.

There are two constraints that may have affected the results of our survey, rain and time duration. It was raining constantly throughout the survey period. Heavy rain occurred particularly at night or early down till morning.

A minimum of three rhinoceros is estimated to reside in the area surveyed. The result of this particular survey is alarming. However our result could have been affected by or more of the following factors; i) The rhino population could have been displaced due to logging to areas not surveyed; (ii) logging activities in the area may have caused a decline in birth rate; (iii) rainfall may have obscured

footprints; (iv) rhinoceros population may be actually declined due to poaching; and (v) coverage of the area in our survey was somewhat less than areas on covered on previous surveys.

Regardless, an urgent follow-up survey to substantiate the declining number of rhinoceros population should be carried out at much regular intervals by relevant authorities.

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