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SUMATRAN RHINOCEROS SURVEY IN THE UPPER SUNGAI SELAMA, PERAK

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ABSTRACT

A Sumatran rhinoceros survey in the upper Sungai Selama, Perak, was conducted between 11-21 July 1990. A total of 6 rhinoceros were estimated to be found in the 10,100 ha survey area. They were found at the lower and the upper reaches of Sungai Selama and its tributaries (Sungai Samar Gagak, Sungai Rambong, Sungai Sera Rimau) and also on the mountain ridge at Gunung Titiwangsa, Gunung Inas, Gunung Ulu Jernih and Gunung Ulu Teras.

BACKGROUND

The Ulu Selama (upper Selama) in Perak is known to house a population of Sumatran rhinoceros (*Dicerorhinus sumatrensis*). Hislop (1965) stated that the largest number of rhinos in Peninsular Malaysia occured in the mountain terrain within the Bintang Hijau forest reserve. Milton (1963) visited the upper Selama Perak area and observed an adult rhino near a well-known saltlick (Jenut Sira Rimau). Strickland (1967) and Stevens (1968) conducted a brief survey of Selama basin and found tracks of rhinoceros. Flynn and Abdullah (1984) estimated that 3 to 5 rhinoceros occur in this region. Khairiah (1983) made an initial survey in the forest and found that the rhinos occurred at 2 saltlicks, Sira Rimau and Sira Kemian. Since 1984, a Rhino Research Unit based at Ulu Selama made frequent field trips/ patrols and found that the rhino often visited Sira Kemian but Sira Rimau is seldom used. However, there is still lack of reliable information on the number of Sumatran rhinoceros and its ranges within Bintang Hijau forest reserve in Ulu Selama, Perak.

In June 1990, the Rhino Research Unit discovered Sumatran rhinoceros footprints, wallow, dungs and other signs made by an animal along a mountain ridge between Gunung Titiwangsa and Gunung Inas located in the east of Ulu Selama. With this information, this study was initiated to survey the occurrence, number and distribution of Sumatran rhinoceros in this area.

OBJECTIVE

This survey is carried out to determine the number of Sumatran rhinoceros and its ranges occuring in the Ulu Selama area, Perak.

SURVEY AREA

The survey area is located in the east of the Selama District. It covers about 10,100 ha of the lower and upper part of Selama river basin and to the top ridges of the Gunung Inas, Gunung Ulu Jernih and Gunung Ulu Teras (Figure 1). Part of the forest reserve especially the area near the rural settlement and some between the hills and mountain terrain in the south were logged. Access to this area is by logging roads. The habitat in the lowlands consists of primary and secondary forest and in the uplands is made up mostly of primary forest. The area is drained by Sungai Selama and its tributaries namely Sungai Samar Gagak, Sungai Tapah Kanan. Sira Kemian (saltlick) is situated at Sungai Laka. Sira Rimau is located at Sungai Sera Rimau. The area is hilly and mountainous where the altitude ranges from 500 m to 2000 m.

METHOD

The rhino track count method was used to estimate the number and distribution of Sumatran rhinoceros. All rhino tracks encountered on a survey route/transect were measured. The measurement of footprints is done only for the track of the hindleg. A series of 10 fresh footprints were measured for each animal found. Sample of the footprints were made by means of plaster cast. Other than fresh rhino tracks, old footprints, wallows, faeces, leaves browsed, sapling, twisted and fruits eaten were recorded to help in determining the range, habits use and distribution of the rhinoceros.

Four route surveys or transects were set up and the survey teams were organised accordingly (Figure 1) :

Route 1 : Kg. Seputih to Sg. Rambong, Gunung Ulu Jernih, Gunung Ulu Teras, Sungai Sira Rimau and Sungai Charok Durian.

Route 2 : Kg. Seputih to Sungai Samar Gagak, Sungai Gajah Mati, Gunung Titiwangsa and Gunung Inas.

Route 3 : Kg. Seputih to Sungai Selama, Sira Kemian, top ridge (grid reference 895265), Bukit Machang Api and Mahang.

Route 4 : Kg. Seputih to Belukar Hantu, Sungai Tapah Kanan, Bukit Ketam and Upper Sungai Buluh.

All survey teams were equiped with compass, altimeter, steel tape, data sheet, pencil, topographic map (Sheet No. 30: Lenggong), plaster cast powder, plastic bag and camera. The survey was conducted from 11-21 July 1990 and it involved 20 personnel. Each survey team consisted of a group leader and 4-5 wildlife rangers.

RESULTS

Route 1 : Fresh rhinoceros tracks were found between Sungai Rambong and Gunung Ulu Jernih. An adult rhino was sighted between the ridge of Gunung Ulu Jernih and Gunung Ulu Teras. Old track, wallow, faeces, twisted sapling and fruit eaten were also observed at Gunung Ulu Jernih and Gunung Ulu Teras.

Route 2 : Rhinoceros tracks, faeces, feeding sign and earth scraping were found. Old wallows and faeces were also found in the same area. Along the mountain ridge between Gunung Titiwangsa and Gunung Inas there were many wallows, faeces and saplings browsed made by rhinoceros. Some of the rhinoceros trails overlaped with elephant and tapir.

Route 3 : Sumatran rhinoceros tracks were found between Sungai Selama and its upper reaches. Rhinoceros tracks were also observed near a saltlick, Sira Kemian and Sungai Bintang.

Route 4 : Old wallow was found at Bukit Ketam.

The result of rhinoceros ranges and footprint measurements are summarised in Tables 1 and 2.

Table 1. Sumatran rhinoceros ranges found in Ulu Selama Perak in July 1990.

Location	Altitude (meters)	Grid reference	Signs of rhino
Sungai Rambong	510	185785	Fresh track, sapling twisted, fruit eaten (*Mangifera sp.*), Dung and urination.
Sg. Rambong	780	197765	Old tracks
Gunung Ulu Jernih	1554	211751	Old track, dung and mud wallow.
Gunung Ulu Jernih-Gunung Ulu Teras	1500	228763	An adult rhino sighted in the mïïing.
Gunung Ulu Teras	1526	252775	Old wallow, faeces and leaves browse.

Sungai Samar Gagak	750	252833	Fresh track, faeces, twisted sapling, and scratch marking.
Sungai Samar Gagak	900	268845	Old track, well used wallow.
Gunung Titiwangsa	1726	286845	Old rhino track
Gunung Inas	1800	292830	Old rhino trail, faeces and wallows.
Sungai Samar Gagak	750	262835	Old track, wallow and twisted plant.
Sungai Samar Gagak	900	268826	Old rhino track
Sungai Samar Gagak	510	232833	Fresh track
Sungai Selama	1276	232845	Fresh track
Sungai Selama	1118	235865	Fresh track
Sungai Bintang Kanan	929	246900	Fresh track
Batu Ketam	1116	858195	Old wallow

Table 2. Sumatran rhinoceros footprint measurement found by survey teams at upper Ulu Selama, Perak in July 1990.

Day	Sumatran rhinoceros track measurements			
	Team 1	**Team 2**	**Team 3**	**Team 4**
1	d13 (18.0-20.2) n=7 d2(6.8-7.9) n=7	-	-	-
2	-	d13(19.5-20.0) n=4 d2(8.0-8.5) n=2	-	-
3	-	-	d13(19.1-20.6) n=10 d2=(8.3-3.9) n=10	-
4	d13(22.5-23.0) n=2 d2(8.0-8.5) n=2	-	d13(19.1-20.6) n=10 d2(8.1-9.0) n=10	-
5	-	-	-	-
6	-	-	d13(18.0-19.9) n=5 d2(7.5-7-8) n=5	-
7	-	-	-	-
8	-	d13(18.5-20.0) n=9 d2(7.5-9.0) n=11	-	-
9	-	-	-	-
10	-	-	-	-

Note : *d13 - Measurement between digits 1 and 2 in cm*
d2 - Measurement of digit 2 or midtoe in cm
n - number of samples

DISCUSSION AND CONCLUSION

The number of Sumatran rhinoceros occuring in this area was estimated by comparing the sizes of footprint. Tabel 2 shows a total of 7 fresh rhino tracks taken by team 1,2 and 3. They were found at different altitude and location.

The measurements of footprint taken by Route 1 showed different size for both d13 and d2. It can then be estimated that 2 rhinos exist in the Sungai Rambong area. For Route 2 the average size did not show a distinct range between the 2 tracks measured. Thus, these tracks were made by the same rhino. In route 3, the tracks of 2 rhinos were found at Sungai Selama and 1 at the upper ridge. These tracks were from 3 different individuals.

Old tracks and signs of rhinoceros were not included in the estimate of the number of rhinoceros because of its difficulty to measure. However, it can be used for determining the range and distribution.

The results suggest that there were 6 Sumatran rhinoceros occuring in the 10,100 ha area surveyed. They were found at the lower and the upper reaches of Sungai Selama, Sungai Samar Gagak, Sungai Rambong, and Sungai Sera Rimau. They ranged up to the mountain ridges of Gunung Titiwangsa (1726m), Gunung Inas (1800m), Gunung Ulu Jernih (1526m) and Gunung Ulu Teras (1526m) (Figure 1). The rhinoceros still use a saltlick (Sira Kemian) near Sungai Selama. However there was no sign of rhinoceros found around the other saltlick (Sira Rimau).

The results of this rhinoceros survey could have been affected by operational and climatic factors. Active logging and human presence could have disturbed rhinoceros activities in its habitat especially near Sira Rimau. Steep and difficult terrain, dense bamboo vegetation in the secondary forest, heavy rain and cold weather in the high altitude had affected the progress of the survey groups. Limited manpower and lack of knowledge of the area are other factors that hinder a total survey coverage of the Ulu Selama region.

RECOMMENDATION

1. Further censuses should be carried out on the northern part of Ulu Selama area to determine the whole population and distribution of Sumatran rhinoceros.
2. A permanent study should be concentrated at the upper part of Ulu Selama and the mountain ranges as these areas have been constantly visited by rhinoceros. A long-term ecological study on the rhinoceros can be carried out modelled on the Endau Rompin rhino study done during 1974-81 by R. W. Flynn (Flynn and Abdullah 1984).

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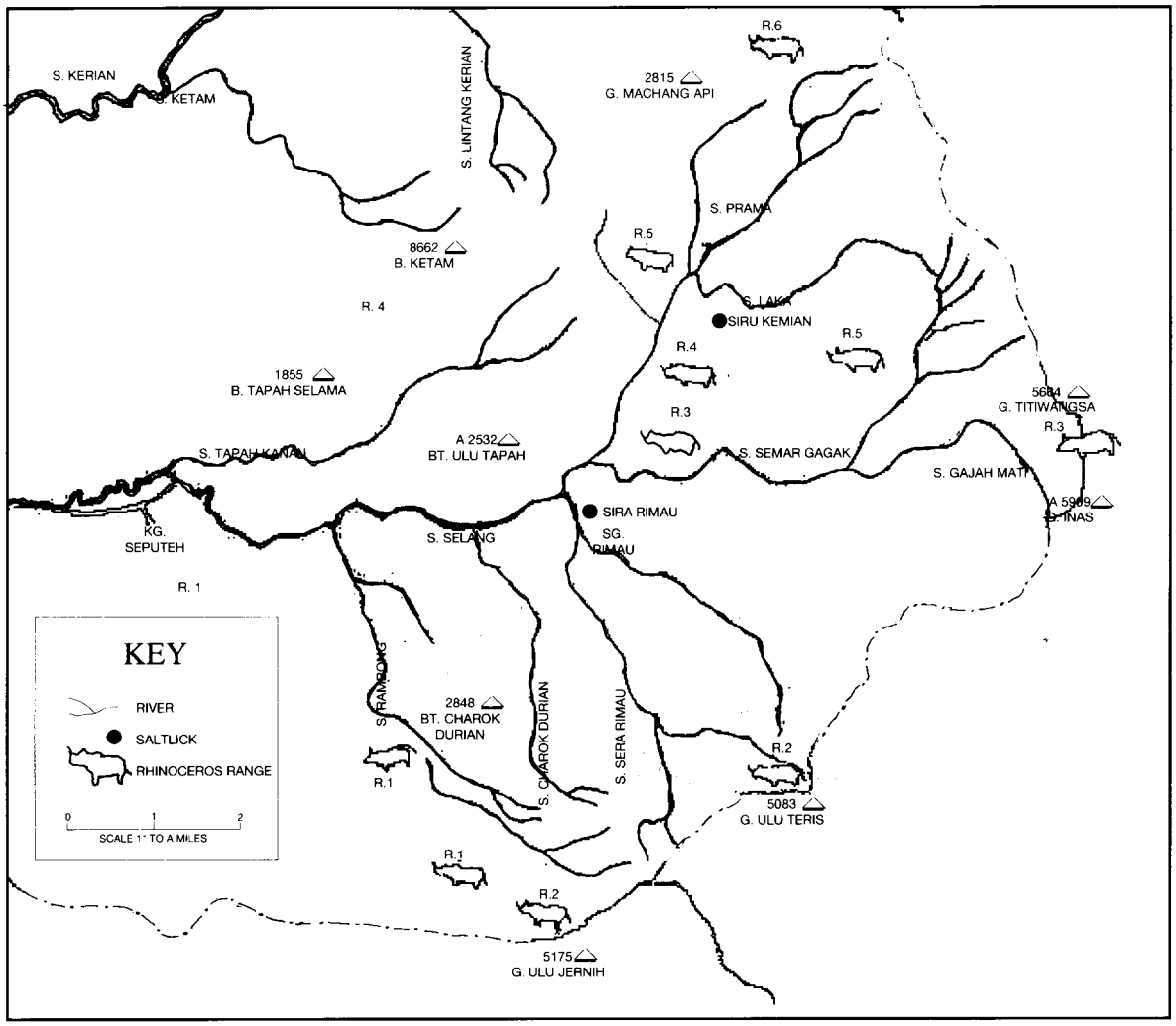

FIGURE. 2: SUMATRAN RHINOCEROS RANGES DISTRIBUTION

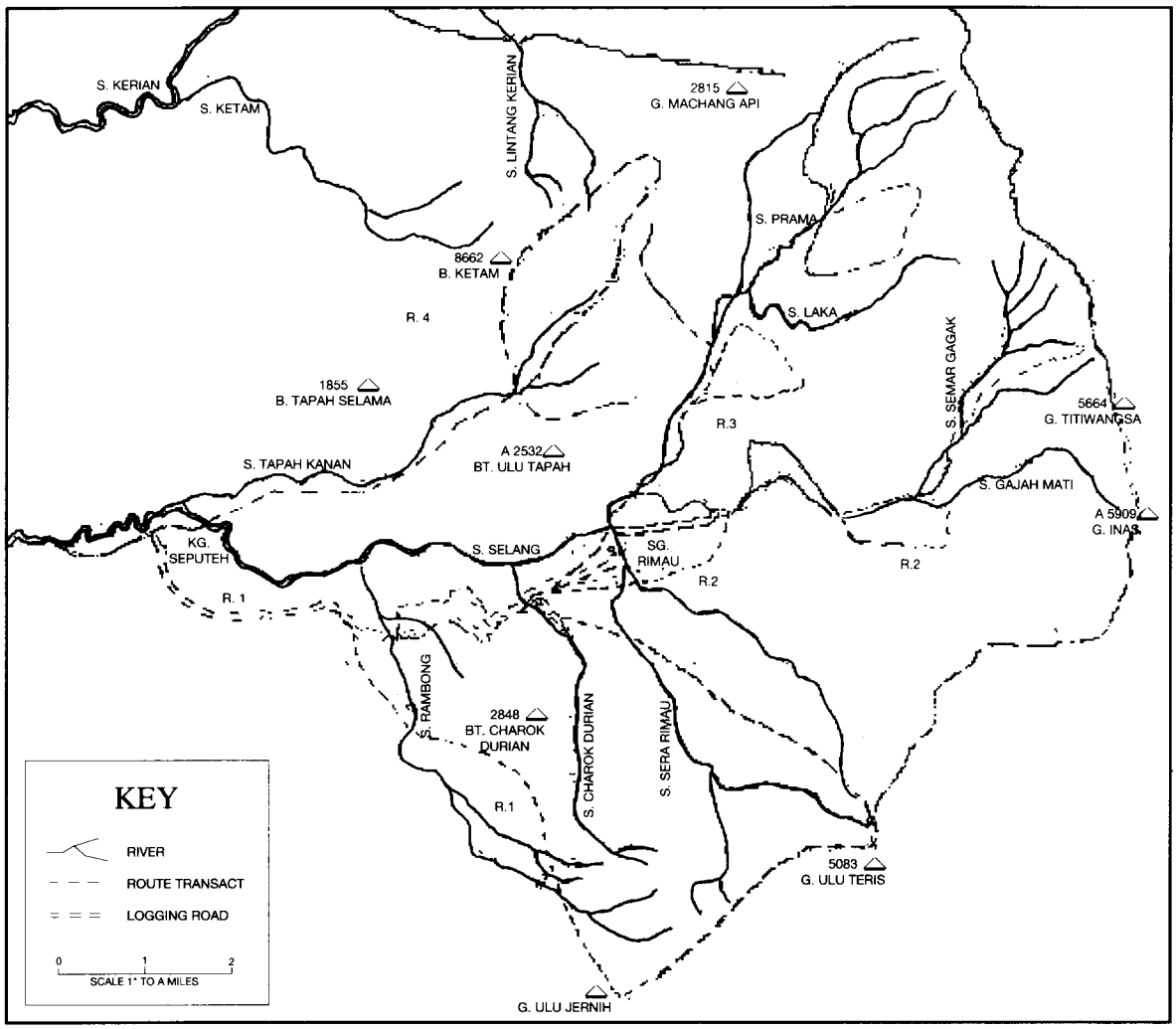

FIGURE 1: SUMATRAN RHINOCEROS SURVEY ROUTES IN THE UPPER SUNGAI SELAMA, PERAK.