

**SUMATRAN RHINO CONSERVATION CENTRE
DEPARTMENT OF WILDLIFE AND NATIONAL PARKS
SUNGAI DUSUN, SELANGOR
MALAYSIA**

MONTHLY REPORT

MAY 2003

BY

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&

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INTRODUCTION

There was no breeding recorded this month although the routine procedures including blood collection, ultrasound and rhino mixing were carried out throughout the month.

Ultrasound was conducted on the females including Minah, Panjang and Mas Merah. Minah had an ovulatory follicle but no breeding occurred although she was paired with Ara. Scanning was attempted on Seputeh but she did not cooperate during the procedure, jumping up and down in the chute. Seputeh was also mixed with Ara and good breeding behavior was observed but no copulation occurred.

Following the FSH therapy on Panjang on April 28, she was scanned and paired with Ara but no breeding achieved and the observation was summarized below.

RHINO MANAGEMENT

A) Daily Management

i) Night stall

Daily work

Starting this month, Mohd Noor will manage the night stalls together with Shariff and Umor. Shariff and Umor will clean the night stalls daily while Mohd. Noor inspected the food supply when it arrived around 9.30 a.m. The browse and fruits were weighed and cleaned before giving to the rhinos. About 40 to 50 kg of browses and 7kg of fruits including papaya, banana and sweet potatoes were given daily. The rhinos were also given horse pellet about 2.0kg every morning. Every Monday and Thursday morning, blood samples will be collected from all rhinos.

The rhinos

The rhinos were let out first before cleaning the night stalls. After cleaning, the browses were put in the feed trough and the rhinos were let in for their morning meal. The water trough was cleaned and the drinking water was changed on daily basis. Daily observation was made and recorded in the workbook for each rhino. The rhinos were fed twice daily: 9.00 a.m. and 3.00 p.m.

ii) Ten acres enclosure

Daily Work

Adam will inspect the electric fencing every morning. The fencing will be cleaned from any foreign objects such as spider web, dried leaves or creepers to avoid short circuit. Voltmeter was used to ensure that the voltage of the fencing is about 7.0 kV. They will also inspect the fencing for any damages.

During the inspection, the ranger will look for the rhino inside the enclosure and call the rhino for their morning meal. The rhino was confined in the quarter acre first before putting their browse in the feeding trough. The amount given was about 100kg for each rhino per day.

B) Breeding Program

i) Breeding Introduction

a) Minah

Minah was paired with Ara based on the ultrasound findings. Although she had an ovulatory follicle, no breeding occurred but some interest was observed on both rhinos.

b) Seputeh

There was a good breeding behaviour observed when Seputeh was paired with Ara. Ara mounted her on a few occasions without any successful copulation. Head butting was observed and the rhinos were separated to avoid fighting.

c) Panjang

Panjang was given FSH therapy to stimulate her to cycle but no positive result achieved. Ultrasound was conducted and there was an ovulatory follicle but no breeding took place.

d) Mas Merah

Mas Merah was released into the 10 acres enclosure and blood was collected once weekly. She was scanned but there was not much follicular activity observed.

ii) Bleeding Program

a) Blood Collection

The blood collection was carried out twice weekly, every Monday and Thursday. The bleeding procedure was summarized in Table 1.

b) Progesterone Hormone Profile

Blood samples were sent to UPM for hormonal analysis.

C) HEALTH STATUS

Minah showed an improvement and her weight is being monitored on weekly basis. The result is tabulated in Table 4. The other rhinos were weighed once a month.

Table 3: Rhinos' Body Weight (Kg), May 2003

Month/ Rhino ID	Jan	Feb	Mar	Apr	May	June	July	Aug	Sept	Oct	Nov	Dec
MAS MERAH	610	*	603	*	*							
MINAH	522	530	539	534	535							
SEPUTIH	762	762	772	774	776							
PANJANG	572	566	569	550	548							
ARA	614	615	623	627	635							

*Inside the 10 acres enclosure

Table 4: Minah's Weekly Body Weight (Kg), May 2003

Rhino ID / Date	8/5	16/5	21/5	29/5
Minah	532	539	535	532

Table 1: Blood Collection from the Rhinos, May 2003

Date	Rhino ID	Area taken	Remarks
May 1	Mas Merah Rima Minah Panjang	Tail Tail Tail Tail	Samples were taken from the females for P4 analysis.
May 5	Panjang Mas Merah Rima	Tail Tail Tail	Samples were taken from the females for P4 analysis.
May 8	Rima Minah Panjang Seputeh Mas Merah	Tail Tail Tail Tail Tail	Blood was taken for P4 analysis
May 12	Minah Panjang Mas Merah Seputeh	Tail Tail Tail Tail	Samples were taken from all females for P4 analysis.
May 16	Minah Seputeh Panjang	Tail Tail Tail	Samples were taken from the females for P4 analysis.
May 19	Minah Panjang Mas Merah Seputeh	Tail Tail Tail Tail	Samples were taken from the females for P4 analysis.
May 22	Minah Seputeh Panjang Mas Merah	Tail Tail Tail Tail	Blood was taken for the P4 analysis
May 26	Panjang Minah Mas Merah Seputeh	Tail Tail Tail Tail	Samples were taken from the females for P4 analysis
May 29	Panjang Minah Seputeh	Tail Tail Tail	Samples were taken from the females for P4 analysis

Table 2: Observation on the Rhinos During Introduction, May 2003

Date	Rhino ID	Observation
May 1	Panjang & Ara	Ara sniffed Panjang & followed her for a while but she vocalized a lot. Ara lost interest & walked back to the night stall.
May 2	Panjang & Ara	Ara checked Panjang but she walked away & Ara ignored her. Later, Ara approached Panjang, she vocalized & went back to the night stall. Ara kept eating fruits.
May 3	Panjang & Ara	AM: Ara checked Panjang then followed her & tried to mount but she walked away, vocalizing & blowing. PM: No interest observed, Panjang vocalized a lot when Ara approached her.
May 4	Panjang & Ara	AM: Ara checked Panjang & followed her for a while. Panjang vocalized & she wanted to fight. Separated. PM: Panjang vocalized and blowing when Ara approached her.
May 5	Panjang & Ara	AM: Ara sniffed Panjang but she walked away & Ara ignored her. No interest observed. PM: Ara checked Panjang but no following when she walked away.
May 6	Panjang & Ara	AM: Ara followed & tried to mount but Panjang walked away, vocalizing a lot. PM: Panjang vocalized & blowing, she looked afraid when Ara approached her.
May 7	Panjang & Ara	AM: Ara followed for a while but Panjang vocalized & both rhinos went separate ways. Ara approached Panjang again but she vocalized & blowing. PM: Not much interest observed. Ara checked Panjang but ignored her when she walked away.
May 8	Panjang & Ara	AM: Ara followed Panjang for a while & then lost interest. He approached Panjang again but she vocalized & blowing PM: Ara followed for a while & both rhinos went separated ways. Not much interest observed.

Date	Rhino ID	Observation
May 9	Panjang & Ara	AM: Ara checked Panjang then followed her for a while. He lost interest & both rhinos went separate ways. PM: No mixing
May 10	Panjang & Ara	Ara followed for a while, Panjang vocalized frequently. Ara lost interest & both rhinos went separate ways.
May 11	Panjang & Ara	No interest. Ara checked Panjang but ignored her when she walked away.
May 12	Panjang & Ara	No interest. Ara checked Panjang but ignored her when she walked away.
May 13	Minah & Ara	Not much interest. Head butting too much.
May 14	Minah & Ara	Ara checked Minah but nothing happened. Ara approached Minah again, head butting occurred. No interest observed.
	Seputeh & Ara	Seputeh wanted to fight with Ara.
May 15	Minah & Ara	Ara checked Minah & walked away, Minah followed. Both rhinos were side by side, flanking. Ara sniffed Minah and followed her when she walked away. Minah turned around, head butting occurred. Series of head butting observed. Ara lying down, Minah mounted him. He stood up, bite Minah & she ran away. Ara chased Minah, separated.
May 16	Minah & Ara	AM & PM: Ara checked Minah & followed for a while. Head butting a lot. Ara lying down, Minah mounted & pushing him too much. Ara stood up, bite Minah & she ran way. Ara chased Minah, separated.
	Seputeh & Ara	Too much head butting & she wanted to fight.
May 17	Minah & Ara	Ara checked Minah & followed her for a while then walked away, Minah followed him. Side by side. Ara lying down, Minah mounted & he stood up. Head butting occurred.

Summary - Sumatran Rhino Reproductive Examination, May 2003

Exam Date	Female ID	Ultrasound Data	Behaviour
May 1	Panjang	R: MSF (<10mm). L: 15, 14 & 14mm	Ara sniffed & followed for a while but Panjang vocalized a lot.
May 2	Panjang	R: MSF L: 17, 15 & 14 mm	Ara checked but ignored Panjang when she walked away. Panjang blowing & vocalized when saw Ara again.
May 3	Minah Panjang	R: 19-20mm (regressing follicle) L: 12mm R: NE L: 19.16 & 14mm	No mixing Ara checked, followed & tried to mount but Panjang walked away, vocalizing a lot. Tried again in the PM but no interest.
May 4	Panjang	R: MSF L: 20mm	Ara sniffed, followed for a while but Panjang vocalized a lot, wanted to fight. No interest in the PM.
May 5	Minah Panjang	R: 17mm (regressing follicle) L: 13mm R: MSF L: 21mm	No mixing Ara checked Panjang but nothing happened. No interest observed in the PM.
May 6	Panjang	R: NE L: 21mm	AM: Ara followed & tried to mount but Panjang walked away, vocalizing. PM: Panjang vocalized a lot when Ara approached her.
May 7	Panjang	R: L: 20mm	Ara followed for a while, Panjang vocalized & both went separate ways. Ara approached but Panjang vocalized & blowing a lot.

Exam Date	Female ID	Ultrasound Data	Behaviour
May 8	Panjang Minah	R: 14mm L: 14mm (regressing)	No mixing
May 10	Panjang	R: 15-16mm L: 13mm	No mixing
May 12	Minah	R: 18mm L: MSF	Head butting too much.
May 15	Minah	R: MSF L: 14-15mm	No mixing
May 16	Panjang	R: 20mm L: MSF	.
May 17	Minah	R: 22mm L: MSF	AM: No interest during the first 10 minutes, then Ara sniffed & followed Minah for a while. Minah turned back & head butting too much. Ara chased Minah. PM: Ara checked Minah but she turned around and head butting too much.
May 19	Panjang Minah	13mm, MSF R: 22mm L: MSF	No interest. AM: Ara followed Minah for a while, she turned around and head butting occurred. Ara lying down, Minah pushed him, Ara chased Minah away. PM: Ara followed Minah but head butting too much

Exam Date	Female ID	Ultrasound Data	Behaviour
May 21	Minah	R: L: 22mm	Ara checked Minah but ignored her when she walked away. No interest observed in the PM.
May 22	Panjang	15, 14mm	No mixing
May 27	Mas Merah	MSF; <10mm	No mixing
May 29	Panjang	17mm. MSF & CL (20mm)	No mixing
May 30	Minah	14 become 15mm 25 regressed to 22mm	No interest observed during the pairing.

Panjang FSH / PGF Hormonal Therapy

Date	FSH / HR Post - FSH	Ultrasound Data	Behaviour
April 28 9.00 am 8.45 pm	40mg FSH + 15mg PGF IM 40mg FSH IM	R:NSF L:MSF (10-12mm)	No mixing
April 29 8.30 am 8.15 pm	30mg FSH + 15mg PGF IM 30mg FSH IM		No mixing
April 30 8.15 am 8.00 pm	20mg FSH IM 20mg FSH IM		No mixing
May 1 8.05 am 8.00 pm	10mg FSH IM 10mg FSH IM	R: MSF L:15mm,14mm,14mm	Ara checked Panjang & followed her for a while but Panjang vocalized a lot.
May 2	96 Hrs Post - FSH	R: MSF L:17mm,15mm,14mm	Ara sniffed Panjang but ignored her when she walked away. Ara approached Panjang again but she blowing and vocalized a lot.
May 3	120 Hrs Post – FSH	R:MSF L:19mm,16mm,14mm	AM:Ara checked Panjang, then followed her and tried to mount but Panjang walked away from Ara. PM: No interest
May 4	144 Hrs Post – FSH	R:MSF L:20mm,17mm,15mm	AM:Ara sniffed Panjang & followed her for a while but Panjang vocalized a lot & wanted to fight. PM: No interest. Both rhinos went separate ways, Panjang blowing & vocalized when Ara approached.

Date	FSH / HR Post - FSH	Ultrasound Data	Behaviour
May 5	7 days Post – FSH	R:NE L:21mm,17mm	AM:Ara checked Panjang, no interest observed. Ara kept eating when Panjang walked away. PM: No interest observed.
May 6	8 days Post – FSH	R:12mm L:21mm,17mm	AM:Ara followed Panjang closely & tried to mount but Panjang sit & then walked away under him. Panjang vocalizing & blowing a lot. PM:Panjang vocalized & blowing a lot when Ara approached her and she looked afraid.
May 7	9 days Post – FSH	R: MSF L: 20mm,15mm	AM:Ara followed Panjang for a while, Panjang vocalized frequently & then both rhinos went separate ways. Ara approached Panjang again but she blowing and vocalizing. PM:Ara checked Panjang but ignored her when she walked away.
May 8	10 days Post – FSH	R: MSF L: 20mm,15mm	AM:Ara sniffed Panjang and followed her for a while, then lost interest. Ara approached Panjang again but she blowing & vocalizing. PM:Ara followed Panjang but then lost interest, both rhinos went separate ways.

Date	FSH / HR Post - FSH	Ultrasound Data	Behaviour
May 9	11 days Post – FSH	NE, no electricity	AM: Ara sniffed Panjang but ignored her when she walked away. Both rhinos went separate ways.
May 10	12 days Post – FSH	R: 12mm L: 18mm, 13mm (regressing)	AM: No interest observed. Ara checked Panjang but ignored her when she walked away.
May 11	13 days Post – FSH	Not examine (NE)	AM: Ara checked Panjang but ignored her when she walked away. No interest observed.

Rhinos' Breeding Dates at Sg. Dusun, 2000 – 2003.

Date(s)	Rhinos	Remarks
5/10/00	Rima & Ara	Bred for 46 minutes.
14/10/00	Panjang & Ara	Bred for about 35 minutes.
19/10/00	Seputeh & Ara	35 minutes.
29/10/00	Rima & Ara	Rima was bred for about 35 minutes.
8/11/00	Seputeh & Ara	Intromission was observed and lasted about 23 minutes.
9/11/00	Seputeh & Ara	Seputeh was bred for about 30 minutes.
10/01/01	Rima & Ara	Bred for 20 minutes after assisted intromission.
26/01/01	Seputeh & Ara	Bred for 30 minutes in the afternoon.
31/01/01	Rima & Ara	Bred for 20 minutes.
01/02/01	Rima & Ara	Bred for 32 minutes.
16/02/01	Seputeh & Ara	Bred for 29 minutes.
17/02/01	Seputeh & Ara	Bred for 35 minutes.
22/02/01	Rima & Ara	Bred for 55 minutes.
15/03/01	Rima & Ara	Bred for 14 & 5 minutes.
16/03/01	Rima & Ara	Bred for 10, 5 & 13 minutes.
08/04/01	Seputeh & Ara	Bred for 32 minutes.
11/04/01	Rima & Ara	Bred for 25 minutes.
03/05/01	Rima & Ara	Bred for 36 minutes.
25/05/01	Rima & Ara	Bred for 25 minutes.
31/05/01	Panjang & Ara	Bred for 26 minutes.
08/06/01	Seputeh & Ara	Bred for 13 & 19 minutes.
16/06/01	Rima & Ara	Bred for 35 minutes.
17/06/01	Rima & Ara	Bred for 30 minutes.
30/06/01	Seputeh & Ara	35 minutes
21/07/01	Seputeh & Ara	30 minutes
22/07/01	Seputeh & Ara	23 minutes
23/07/01	Seputeh & Ara	30 minutes
30/07/01	Rima & Ara	35 minutes
13/08/01	Seputeh & Ara	30 minutes
29/08/01	Mas Merah & Ara	2 minutes
03/09/01	Seputeh & Ara	27 minutes
04/09/01	Seputeh & Ara	15 mins, 32 minutes
25/09/01	Seputeh & Ara	43 minutes
26/09/01	Seputeh & Ara	34 minutes
17/10/01	Seputeh & Ara	30 minutes
18/10/01	Seputeh & Ara	30 minutes
23/10/01	Rima & Ara	30 minutes
08/11/01	Seputeh & Ara	55 minutes
13/11/01	Rima & Ara	20 mins, 20 minutes
24/11/01	Mas Merah & Ara	20 minutes

Date(s)	Rhinos	Remarks
18/01/02	Mas Merah x Ara	Bred for 35 minutes
04/04/02	Seputeh x Ara	Bred for 40 minutes
26/04/02	Seputeh x Ara	Bred for 15 & 35 minutes
17/05/02	Seputeh x Ara	Bred for 25 minutes
06/07/02	Seputeh x Ara	Bred for 25 minutes
29/09/02	Seputeh x Ara	Bred for 16 minutes
19/10/02	Seputeh x Ara	Bred for 15 minutes
20/10/02	Seputeh x Ara	Bred for 23 minutes
22/10/02	Rima x Ara	Bred for 28 minutes
10/11/02	Seputeh x Ara	Bred for 30 minutes
04/12/02	Seputeh x Ara	Bred for 52 minutes
17/12/02	Rima x Ara	Bred for 7 & 15 minutes
20/01/03	Rima x Ara	Bred for 25 minutes
21/01/03	Rima x Ara	Bred for 17 minutes
04/02/03	Seputeh x Ara	Bred for 10 minutes
05/02/03	Seputeh x Ara	Bred for 52 minutes
23/02/03	Rima x Ara	Bred for 19 minutes
12/04/03	Rima x Ara	Bred for 51 minutes