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

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MONTHLY REPORT

**MARCH 2002** 

BY

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#### INTRODUCTION

No breeding occurred during the month of March although the females were mixed with Ara based on the ultrasound and their progesterone results. The bleeding procedure was carried out as usual, twice weekly. As for the bred females, blood will be collected once a week.

From March 10 to 15, a Rhino Team consisting six people visited the center to evaluate the status of the rhinos especially the females. Their findings and early recommendation was summarized in Table 4.

Prior to the visit, Minah was undergone a hormone therapy for fourteen consecutive days starting from March 5 to 18. Minah was given  $50\mu g/ml$  of GnRH and the therapy was summarized in Table 5.

#### RHINO MANAGEMENT

#### A) Daily Management

#### i) Night stall

#### Daily work

Adam, Shariff and Umor managed the night stalls. Shariff and Umor will clean the night stalls daily while Adam will 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 drinking water was changed daily and stress vet (multimineral powder) was mixed inside it. 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

Mohd Noor inspects the electric fencing every morning. The fencing was 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 looked for the rhino inside the enclosure and called 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

The females were introduced to Ara but no breeding occurred. On March 5, Rima was paired with Ara but positive behaviour observed and the rhinos were separated after 10 minutes.

From March 8 to 9, Seputeh and Mas Merah were paired with Ara and there was positive behaviour observed between Ara and Mas Merah. However, on March 10, the rhinos were paired again but no breeding occurred.

Based on the ultrasound result on March 13, Mas Merah had a 23mm follicle and Seputeh had a 24 mm follice but there was no breeding occurred when these two females were mixed with Ara. Instead, there was fighting occurred between Ara and Mas Merah and the female suffered minor injuries. As for Seputeh, no interest was observed from the female despite having an ovulatory follicle.

## ii) Bleeding Program

## a) Blood Collection

The bleeding was still carried out twice weekly. As for the bred females, the blood was collected once a week. The blood procedure was summarized in Table 1.

### b) Progesterone Hormone Profile

The latest blood result was attached below.

## **B) HEALTH STATUS**

Generally, all rhinos are in the good condition. Minah still recovering from the weight loss and she was monitored closely. Weighing was conducted monthly and the result is tabulated below.

Rhino ID	Feb (BW, kg)	Mar (BW, kg)				
Seputeh	738	752				
Mas Merah	612	591				
Panjang	532	In 100 acres				
Minah	462	450				
Rima	552	542				
Ara	610	588				

## Table 3: Rhinos' Body Weight (BW), February and March 2002

## **C) FEEDING**

No changes were made for the feeding program. A contractor will supply the browses, which deliver them around 9.00 a.m. daily. The feed was checked to ensure their quantity and quality upon receiving them. They were cleaned and weighed before giving to the rhinos. The rhinos were given about 40 kg of browses and 7.0g of fruits daily. All rhinos were given horse pellet to increase their body weight.

## Table 1: Blood Collection from the Rhinos, March 2002

Date	Rhino ID	Area taken	Remarks
04/03/02	Minah	Tail	Samples were taken from these females
[1] Y. M. BAR, R. M. Barris, Phys. Rev. B 199 (1994) 41 (2011)	Mas Merah	Tail	for P4 analysis. Blood was taken from
	Panjang	Tail	the males for testosterone analysis.
	Rima	Tail	
	Seputeh	Tail	
	Ara	Tail	
07/03/02	Rima	Tail	Samples were taken from the females
	Panjang	Tail	for P4 analysis. Blood was taken from
	Mas Merah	Tail	the males for testosterone analysis.
	Ara	Tail	
11/03/02	Rima	Tail	Blood was taken for the P4 and
	Seputeh	Tail	testosterone analysis
	Minah	Tail	
	Mas Merah	Tail	
	Panjang	Tail	
	Ara	Tail	
14/03/02	Minah	Tail	Samples were taken from all rhinos for
	Rima	Tail	P4 and testosterone analysis.
	Seputeh	Tail	
	Panjang	Tail	
	Mas Merah	Tail	
	Ara	Tail	
18/03/02	Rima	Tail	Get samples via tail from all females
	Mas Merah	Tail	except Seputeh.
	Panjang	Tail	
	Minah	Tail	
	Seputeh	Tail	
	Ara	Tail	
21/03/02	Minah	Tail	Blood was taken for the P4 and
	Mas Merah	Tail	testosterone analysis
	Panjang	Tail	
	Rima	Tail	
	Seputeh	Tail	
	Ara	Tail	
25/03/02	Minah	Tail	Blood was taken for the P4 and
	Mas Merah	Tail	testosterone analysis
	Panjang	Tail	
	Rima	Tail	
	Ara	Tail	
28/03/02	Seputeh	Tail	

Rhino ID Pathology		Breed / Cycles	Remarks & Recommendation				
Minah	No	No	<ol> <li>U/S (Day 10 GnRH treatment): follicular activity observed (15mm follicle). Reevaluate by U/S on 15/3 &amp; 18/3</li> <li>If follicle size is about 20mm or more, continue GnRH for a week and breed when ready or mix with the male to stimulate cycling when in better condition.</li> <li>Reintroduce pellets ASAP to improve body weight: 500g per week and started increasing 500g each week until about 3 kg/day. Weighing once a week.</li> </ol>				
Mas Merah	Mass at the base of R & L ovary	3	<ol> <li>U/S on 13/3: 21mm follicle</li> <li>U/S on 14/3: 26 mm follicle, no breeding when mixed with male; probably miss the cycle.</li> <li>Continue to breed, still a good candidate</li> </ol>				
Rima	Lots of cysts (both types)	13	<ol> <li>U/S: multiple small follicles</li> <li>Continue to breed (not top priority?)</li> <li>Consider transvaginal biopsy / cervix</li> </ol>				
Panjang	Cervical mass, mineralized mass & cysts	2	<ol> <li>Endoscopy: cervical mass observed</li> <li>Cervical mass need to be removed before breeding</li> <li>Not cycling, possible mixing with male to stimulate cycling</li> </ol>				
Seputeh	Cysts & lots of mass	12	<ol> <li>Biopsy needed, U/S: 24mm follicle, no breeding when mixed with the male.</li> <li>Do not breed for now unless for semen collection</li> </ol>				
Ara	-	-	<ol> <li>Priority: Needs semen evaluation (from female after breeding)</li> </ol>				

## Table 4: Rhinos Evaluation and Recommendation - Sg. Dusun, 13 March 2002

General:

Improved fencing
 Get animals into larger enclosure to avoid visual or auditory contact
 Access road should be built around the 100 acres enclosure.

# Table 5: Minah Therapy Record Form: 50µg/ml Cystorelin (GnRH) BID

Rx Day Date		GnRH Dose		Ultrasound Findings and Behavior		rum nked	Comments
		AM	0.9 ml	U/S: Rhino jumping up &		$\checkmark$	
1 5 March		РМ	1.0ml	down, restless. MSF observed on right ovary.		$\checkmark$	
		AM	1.0ml				
2	6 March	PM	1.0ml		C.		
		AM	1.0ml	U/S: Not cooperative,		um	
3 7 March	PM	1.0ml	difficult to enter chute		en		
		AM	1.0ml				
4	4 8 March		1.0ml				
		AM	1.0ml	U/S: Rhino vocalize a lot in		um	
5	5 9 March	PM	1.0ml	the chut. Stop the U/S until the team arrived.	taken		
		AM	1.0ml				
6	10 March	PM	1.0ml				
		AM	1.0ml	U/S exam: Right ovary: 13 mm Fo Left ovary: NSF		V	
7	11 March	РМ	1.0ml			V	
		AM	1.0ml				
8	12 March	PM	1.0ml				
		AM	1.0ml	U/S exam:	Serum taken		
9	13 March	РМ	1.0ml	Right ovary: 13 & 15mm Fo Left ovary: Not examine (NE)			
	AM	1.0ml		Serum			
10	14 March	PM	1.0ml		taken		
11 15 Ma		AM	1.0ml	U/S exam: Right ovary: 15 mm Fo Left ovary: NE			
	15 March	РМ	1.0ml		ŝ		
12 16 M		AM	1.0ml		Ser	um	
	16 March	PM	1.0ml		tak	en	
	17 March	AM	1.0ml				
13		PM	1.0ml	1			
		AM	1.0ml	U/S exam:	Ser	um	
14 18 Mar	18 March	РМ	1.0ml	- Right ovary: 15 mm Fo Left ovary: MSF		en	

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Mas Merah	Minah	Panjang	Rima		Seputih
Date Day P4 (ng/ml)	Date Day P4 (ng/ml)	Date Day P4 (ng/ml)	E2 (pg/r Date Da	y P4 (ng/ml)	Date Day P4 (ng/ml)
1-Jan-02 1	1-Jan-02 1	1-Jan-02 1	1-Jan-02 1		1-Jan-02 1 2-Jan-02 2
2-Jan-02 2 3-Jan-02 3	2-Jan-02 2 3-Jan-02 3	3-Jan-02 3	3-Jan-02 2		3-Jan-02 3
4.300-02 4	4-Jan-02 4	4-Jan-02 4	4-Jan-02 4		4 Jan-02 4
5-Jan-02 5	5-Jan-02 5	5-Jan-02 5	5-Jan-02 5		5-Jan-02 5
6-Jan-02 6	6-Jan-02 6	6-Jan-02 6	6-Jan-02 6		6-Jan-02 6
7-Jan-02 / 8-bo.02 R 0.55	7-Jan-02 / 8-Jan-02 8	7-Jan-02 / 8-Jan-02 B	7-Jan-02 / 8-Jan-02 R	0.22	8-Jan-02 8 0.08
9-Jan-02 9	9-Jan-02 9	9-Jan-02 9	9-Jan-02 9		9-Jan-02 9
10-Jan-02 10	10-Jan-02 10	10-Jan-02 10	10-Jan-02 10	D	10-Jan-02 10
11-Jan-02 11	11-Jan-02 11	11-Jan-02 11	11-Jan-02 11		11-Jan-02 11
12-Jan-02 12	12-Jan-02 12	12-Jan-02 12	12-Jan-02 12	2	12-Jan-02 12 12-Jan-02 13
13-Jan-02 13	13-Jan-02 13	14-tap-02 14	14-Jan-02 14	4	14-Jan-02 14
15-Jan-02 15	15-Jan-02 15	15-Jan-02 15	15-Jan-02 15	5	. 15-Jan-02 15
16-Jan-02 16	16-Jan-02 16	16-Jan-02 16	15-Jan-02 16	6	16-Jan-02 16
17-Jan-02 17	17-Jan-02 17	17-Jan-02 17	17-Jan-02 1	7	17-Jan-02 17
18-Jan-02 18 0.07	18-Jan-02 18 U.27	15-Jan-02 10 19-Jan-02 19	18-Jan-02 10	9 0.55	18-Jan-02 10 19-Jan-02 19
20-Jan-02 20	20-Jan-02 20	20-Jan-02 20	20-Jan-02 20	0	20-Jan-02 20
21-Jan-02 21	21-Jan-02 21	21-Jan-02 21	21-Jan-02 21	1	21-Jan-02 21
22-Jan-02 22	22-Jan-02 22	22-Jan-02 22	22-Jan-02 22	2	22-Jan-02 22
23-Jan-02 23	23-Jan-02 23	23-Jan-02 23	23-Jan-02 2	3	23-Jan-02 23
25-Jan-02 25 0.94	25-Jan-02 25 0.36	25-Jan-02 25 0.42	25-Jan-02 25	5 1.25	25-Jan-02 25
26-Jan-02 26	26-Jan-02 26	26-Jan-02 26	26-Jan-02 20	6	26-Jan-02 26
27-Jan-02 27	27-Jan-02 27	27-Jan-02 27	27-Jan-02 2	7	27-Jan-02 27
28-Jan-02 28	28-Jan-02 28	28-Jan-02 28	28-Jan-02 2	8	28-Jan-02 28
29-Jan-02 29 30-Jan-02 30	29-Jan-02 29 30-Jan-02 30	29-Jan-02 29 0.26 30-Jan-02 30	29-Jan-02 21 30-Jan-02 34	0	29-Jan-02 29 0.06 30-Jan-02 30
31-Jan-02 31 3.03	31-Jan-02 31 0.16	31-Jan-02 31	31-Jan-02 3	1 1.16	31-Jan-02 31 0.16
1-Fob-02 32	1-Feb-02 32	1-Feb-02 32	1-Feb-02 3	2	1-Feb-02 32
2-Feb-02 33	2-Feb-02 33	2-Feb-02 33	2-Feb-02 3	3	2-Feb-02 33
3-Feb-02 34	3-Feb-02 34	3-Feb-02 34	3-Feb-02 3	5 0.71	3-Feb-02 34
6-Feb-02 35 1.40	4-Feb-02 35 0.10	5-Feb-02 36	4-reo-u2 3 5-Feb-02 3	6	5-Feb-02 36
6-Feb-02 37 0.81	6-Fob-02 37 0.15	6-Feb-02 37 0.39	6-Feb-02 3	7 0.75	6-Feb-02 37 0.11
7-Feb-02 38	7-Feb-02 38	7-Feb-02 38	7-Feb-02 3	8	7-Feb-02 38
8-Feb-02 39 1.13	8-Feb-02 39	8-Feb-02 39	8-Feb-02 3	9 0.84	8-Feb-02 39 0.08
9-Feb-02 40	9-Feb-02 40	9-Feb-02 40	9-Feb-02 4	1	9-Feb-02 40
11-Feb-02 42 1.28	11-Feb-02 42 0.19	11-Feb-02 42 0.29	11-Feb-02 4	2 1.56	11-Feb-02 42 0.07
12-Feb-02 43	12-Feb-02 43	12-Feb-02 43	12-Feb-02 4	3	12-Feb-02 43
13-Feb-02 44	13-Feb-02 44	13-Feb-02 44	13-Feb-02 4	4	13-Feb-02 44
14-Feb-02 45 1.67	14-Feb-02 45 0.29	14-Feb-02 45 0.35	14-Feb-02 4	5 1.29	14-Feb-02 45 0.08
15-Feb-02 40	16-Feb-02 40	16-Feb-02 40	16-Feb-02 4	7	16-Feb-02 47
17-Feb-02 48	17-Feb-02 48	17-Feb-02 48	17-Feb-02 4	8	17-Feb-02 48
18-Feb-02 49 1.78	18-Feb-02 49 0.41	18-Feb-02 49 0.37	18-Feb-02 4	9 0.11	18-Feb-02 49 1.02
19-Feb-02 50	19-Feb-02 50	19-Feb-02 50	19-Feb-02 5	0	19-Feb-02 50
20-Feb-02 51 21-Eab-02 52 1.21	20-Feb-02 51 21-Feb-02 52 0.25	20-Feb-02 51 21-Feb-02 52 0.28	20-Feb-02 5 21-Feb-02 5	2 121	20-Feb-02 51 21-Feb-02 52 0 14
22-Feb-02 53	22-Feb-02 53	22-Feb-02 53	22-Feb-02 5	3	22-Feb-02 53
23-Feb-02 54	23-Feb-02 54	23-Feb-02 54	23-Feb-02 5	54	23-Fob-02 54
24-Feb-02 55	24-Feb-02 55	24-Feb-02 55	24-Feb-02 5	5	24-Fob-02 55
25-Feb-02 56	25-Feb-02 56	25-Feb-02 56	25-Feb-02 5	5	25-Feb-02 55
27-Feb-02 58 0.93	27-Feb-02 58 0.39	27-Feb-02 58 0.35	27-Feb-02 5	8 0.16	27-Feb-02 58 0.24
28-Feb-02 59	28-Feb-02 59	28-Feb-02 59	28-Feb-02 5	9	28-Feb-02 59
1-Mar-02 60	1-Mar-02 60	1-Mat-02 60	1-Mar-02 6	50	1-Mar-02 60
2-Mar-02 61	2-Mar-02 61	2-Mar-02 61	2-Mar-02 6		2-Mar-02 61
4-Mar-02 63 0.44	4-Mai-02 63 0.35	4-Mar-02 63 0.26	4-Mar-02 6	3 0.72	4-Mar-02 63 0.09
5-Mar-02 64	5-Mar-02 64	5-Mar-02 64	5-Mar-02 6	54	5-Mar-02 64
6-Mar-02 65	6-Mar-02 65	6-Ma/-02 65	6-Mar-02 6	5	6-Mat-02 65
7-Mat-02 66 0.95	7-Mar-02 66 0.66	7-Ma:-02 66 0.71	7-Mar-02 6	x6 2.08	7-Mar-02 66 0.13
9-Mar-02 68 0.59	9-Mar-02 68	3-Mar-02 68	8-Mar-02 6	38	9-Mar-02 68
10-Mat-02 69	10-Mai-02 69	10-Mar-02 69	10-Mar-02 6	39	10-Mar-02 69
11-Mar-02 70 0.56	11-Mar-02 70 0.50	11-Mar-02 70 0.39	11-Mar-02 7	4.13	11-Mar-02 70 0.23
12-Mar-02 71	12-Mar-02 71	12-Mar-02 71	12-Mar-02 7		12-Mar-02 71
13-Mar-02 72 14-Mar-02 73 0.26	13-Mar-02 72 0.74	13-Mar-02 /2 14-Mar-02 73 0.45	13-Mar-02 7	3 367	13-Mar-02 72 14-Mar-02 73 0.00
15-Mar-02 74	15-Mar-02 74	15-Mar-02 74	15-Mar-02 7	14	15-Mar-02 74
16-Mar-02 75	16-Mar-02 75	15-Ma:-02 75	16-Mar-02 7	75	16-Mar-02 75
17-Mar-02 76	17-Mar-02 76	17-Mar-02 76	17-Mar-02 7	76	17-Mar-02 76
18-Mar-02 77 0.75	18-Mar-02 77 0.72	18-Ma/-02 // 0.48	18-Mar-02	78 0.71	18-Mar-02 77 0.93
20-Mar-02 79	20-Mar-02 79	20-Mar-02 79	20-Mar-02 7	79	20-Mai-02 79
21-Mar-02 80 0.68	21-Mar-02 80 0.53	21-Mar-02 80 0.44	21-Mar-02 8	50 0.08	21-Mar-02 80 0.71
22-Mar-02 81	22-Mar-02 81	22-Ma:-02 81	22-Mar-02 8	31	22-Mar-02 81
23-Mar-02 82	23-Mar-02 82	23-Mar-02 82	23-Mar-02	52	23-Mar-02 82
25-Mar-02 84 0.80	25-Mar-02 84 0.40	25-Mar-02 84 0.31	25-Mar-02 8		25-Mar-02 84
26-Mar-02 85	26-Mar-02 85	26-Mar-02 85	26-Mar-02 8	85	26-Mar-02 85 1.08
27-Mar-02 86	27-Mar-02 86	27-Mar-02 86	27-Mar-02 8	86	27-Mai-02 86
28-Mar-02 87 1.34	28-Mar-02 87 0.40	26-Ma*-02 87 0.38	28-Mar-02	57 0.08	28-Mat-02 87 0.99
30-Mar-02 89	30-Mat-02 89	25-Mar-02 89	20-Mar-02 0 30-Mar-02 8	89	29-Mai-02 80 30-Mai-02 89
31-Mar-02 90	31-Mar-02 90	31-Mar-02 90	31-Ma(-02	90	31-Mai-02 90

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Rhino\_P4\_graph Updated on 03/09/2001

