AsRSG

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ASIAN RHINOS

Newsletter of the IUCN SSC Asian Rhino Specialist Group
NUMBER 2 **October 1995**

Editors: Thomas J. Foose & Nico J. van Strien

CHAIRMAN'S REPORT

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The Asian Rhino Specialist Group (AsRSG) has actively continued to play its important role in the conservation of all three Asian rhino species. AsRSG secured $ 2,000,000 over 3 years from the Global Environment Facility (GEF). These much needed funds have been immediately put into use for projects in Indonesia and Malaysia. Emphasis is on protection (anti-poaching) and outreach programs. Immediate objectives are to mobilize trained and experienced rhino personnel in the field. In Indonesia, a mobile rhino unit has been formed and recruitment and training are in progress for nine Rhino Protection Units. Surveys are being conducted in Malaysia. Vehicles and equipment have been purchased.

The United Nations Environment Program (UNEP) has conducted several meetings with the AsRSG and provided funds for the Group to conduct a meeting and a workshop to analyze and revise the action plan of range states. Accurate funding requirements of range states to implement rhino conservation projects are urgently needed by UNEP to facilitate fund raising.

The signing of a Memorandum of Understanding (MOU) between the Government of Indonesia through its Forest Protection and Nature Conservation Agency (PHPA) and the International Rhino Foundation (IRF) is yet another very important achievement in rhino conservation. It paves the way for the establishment of a Sumatran Rhino Sanctuary in the Way Kambas National Park, Sumatra. The Indonesian Ministry of Forestry, the Governor of Lampung Province, the Director General of PHPA and other key personnel are providing strong support for this initiative.

High level meetings have also been conducted with the Secretary General of the Ministry of Science, Technology, and the Environment in Malaysia. In addition to discussion of the GEF project, plans have been explored to provide external funding through the IRF to expand the rhino center at Sungai Dusun.

ASIAN RHINO SPECIALIST GROUP ACTIVITIES

GEF PROJECT ACTIVATED

The UNDP GEF Project Conservation Strategy for Rhinoceros in South East Asia (Indonesia and Malaysia) was activated in April 1995.

In **Indonesia**, the Sumatran Rhino Trust (SRT) base camp has been rehabilitated into the training and operations center for the project.

A four-member Mobile Team has been formed and deployed. The Mobile Team is led by the Regional Field Coordinator Mr. Dwi Sutantohadi, who also serves as the Mobile Team member for law enforcement. Other Mobile Team members are: Hario T. Wibisono (research & monitoring); Arief Rubianto (management & protection); Desmonth Bangun (education & extension).

To date, members for 4 Rhino Protection Units have been recruited and they have completed the first training course. Training of a second set of teams will commence after the first of the new year. The Teams are being deployed in Kerinci Seblat and Barisan Selatan National Parks. It is expected that the Mobile Unit will also be involved in training an anti-poaching team for rhinos and tigers in Way Kambas National Park where increasing evidence of a significant rhino population is being discovered.

Ir. Dwiatmo Siswomartono, PHPA Director for Nature, Flora and Fauna Conservation, serves as the Project Director. Drs. Widodo Ramono is the Project Manager and Rhino Conservation Officer for Indonesia.

Muniful Hamid is serving as the National Field Operations Consultant; Mr. Philip Wells, Dr. Nico van Strien, and Dr. Charles Santiapillai are serving as International Field Operations Consultants. The staff of Yayasan Mitra Rhino (YMR) is operating as the secretariat for the Project: Haerudin Sadjudin; Marcellus Adi; Dadan Dani Subrata.

In **Malaysia**, initial activity in the Project is concentrating on more intensive surveys of rhinos areas. Surveys have been conducted in Taman Negara, Endau Rompin, Selama, and Belum; in Sabah in Danum Valley and Tabin. Further survey work in Sarawak is also under way. Results will be reviewed at a Malaysian Rhino Population and Habitat Viability Analysis (PHVA) Workshop in November 1995 where both the GEF Project workplan and the Malaysian Rhino Conservation Strategy will be adaptively revised.

Musa bin Nordin, Director General of Wildlife and National Parks in Peninsula Malaysia is the GEF Project Director for Malaysia. Patrick Andau Mahedi serves as the Project Coordinator for Sabah; Abang Kassim bin Abang Morshidi for Sarawak. Dr. Zainal Zahari Zainuddin is the Rhino Conservation Officer and Project Manager for Peninsula Malaysia; Dr. Edwin Bosi, for Sabah; David Labang, for Sarawak. In Peninsula Malaysia, there are 4 National Field Operations Consultants who to some extent are performing many of the functions of the Mobile Team in Indonesia. These Consultants are: Abdul Kadir bin Abu Hashim; Mohd Samsudin Mohd Suri; Mohd Shariff Daim; Shahruddin bin Othman. Mr. Mohd-Tajuddin Abdullah is assisting all 3 regions of Malaysia as a Field Operations Consultant.

IUCN RED LIST CATEGORIES: Assessment of Asian Rhino Status

IUCN CRITERIA *	JAVAN RHINO		SUMATRAN RHINO			INDIAN RHINO	
	Rhinoceros sondaicus sondaicus JAVA	*Rhinoceros sondaicus annamiticus* VIETNAM	*Dicerorhinus sumatrensis sumatrensis* SUMATRA, MALAYSIA	*Dicerorhinus sumatrensis harrissoni* BORNEO	*Dicerorhinus sumatrensis lasiotis* MYANMAR, THAILAND	*Rhinoceros unicornis* Eastern pop. ASSAM, W. BENGAL	*Rhinoceros unicornis* Western pop. NEPAL
A. Population reduction	VU	CR?	CR	CR	-	VU?	VU?
B. Extent of occurrence	EN	EN	EN	EN	-	EN	EN
C & D. Population estimate	CR	CR	CR	CR	-	VU	VU
E. Probability of extinction	EN?	CR?	EN?	CR?	-	VU?	VU?
OVERALL RATING	**CR**	**CR**	**CR**	**CR**	**EX?**	**EN**	**EN**

* Revised IUCN Categories and Criteria, approved by the 40th Meeting of the IUCN Council, 30 November 1994

EX = Extinct CR = Critically Endangered EN = Endangered VU = Vulnerable

ASSESSMENT OF ASIAN RHINOS BY IUCN RED LIST CRITERIA

The newly published IUCN Red List Categories have been applied to Asian rhino taxa. The results appear in the table above and indicate that of the 7 taxa maximally recognized: 1 is probably extinct, 4 are critically endangered, and 2 are endangered. In terms of the 3 species, 2 are critically endangered and 1 is endangered. Copies of the IUCN Red List Criteria are available from IUCN Headquarters.

ASIAN RHINO SPECIALIST GROUP MEETING

A full meeting of the IUCN SSC Asian Rhino Specialist Group will be conducted in Sandakan, Sabah, MALAYSIA 29 November - 1 December 1995.

Major agenda items are:

- Review of the Status of Rhino Populations in each of the Range States
  - Critical Review of the first 6 months of GEF Project for S.E. Asian Rhinos in Malaysia and Indonesia.
  - Progress on Development of Sumatran Rhino Sanctuaries in Indonesia and Malaysia.
  - Reassessment of the Situation for *Rhinoceros unicornis* in India and Nepal.
  - Reassessment of the Situation for *Rhinoceros sondaicus* in Indonesia and Vietnam.
  - Reassessment of Rhino Situation in Myanmar, Thailand, Laos.
- Review of Rhino Horn Trade Situation
- Finalization of New IUCN/SSC AsRSG Action Plan for Asian Rhinos
- Preparation of the Comprehensive Continent-Wide Strategy for Rhino Conservation in Asia Being Requested by UNEP, As a Basis for the next item.
- Formulation of a Long-Term Funding Strategy for Asian Rhinos.
- Cross Fertilization of Monitoring and Management Techniques Between the IUCN African Rhino (AfRSG) and Asian Rhino Specialist Groups (AsRSG).

Support for this meeting is being provided by the United Nations Environment Programme (UNEP) and the U.S. Fish and Wildlife Service (USFWS) as part of the Rhinoceros and Tiger Conservation Act of the United States of America.

FUNDING EFFORTS & OPPORTUNITIES

U.S. RHINO-TIGER ACT

The U.S. Congress has appropriated $200,000 under the Rhinoceros and Tiger Conservation Act for the U.S. Government Fiscal Year of 1996, which commences 1 October 1995. This amount represents only 2% of the maximum of $10 million/year proposed under the Act. It is significant that even this amount was approved considering the economic austerity program being pursued in the U.S. Congress. Appropriation of funds was due in part to an eloquent plea for some support by Newt Gingrich, Speaker (i.e. head of the majority party) in the U.S. House of representatives.

The $200,000 is to be divided between Africa and Asia. Africa will receive $ 80,000 and these funds will be administered through the Office of Management Authority of the U.S. Fish and Wildlife Service. Asia will receive $120,000 and will be administered by the Office of International Affairs of the U.S. Fish and Wildlife Service. Guidelines for application are being finalized.

Further information for the funds for Asia can be obtained from:

U.S. Fish and Wildlife Service
Office of International Affairs
4401 North Fairfax Drive, Suite 860
Arlington, VA 22203-1622 U.S.A.
Phone: 1/703/358-1760
Fax: 1/703/358-2849
Email: fred_bagley@mail.fws.gov

UNEP ELEPHANT-RHINO FACILITY

The UNEP Elephant and Rhino Conservation Facility is intensifying activity to assist with financial and political support of Rhino and Elephant Conservation. The Facility has already provided approximately $30,000 to each of the four Rhino and Elephant Specialist groups of IUCN SSC. The charge to these Groups is to prepare continental strategies that UNEP can use to recruit funds and secure governmental commitment to rhino and elephant conservation. There will probably be a major meeting of rhino, elephant, and tiger range states sometime in 1996-97.

WORKSHOPS AND REPORTS

MALAYSIA RHINO PHVA WORKSHOP

A population and habitat viability assessment workshop for Malaysia rhino will be conducted in Sandakan, Sabah on 27 and 28 November 1995.

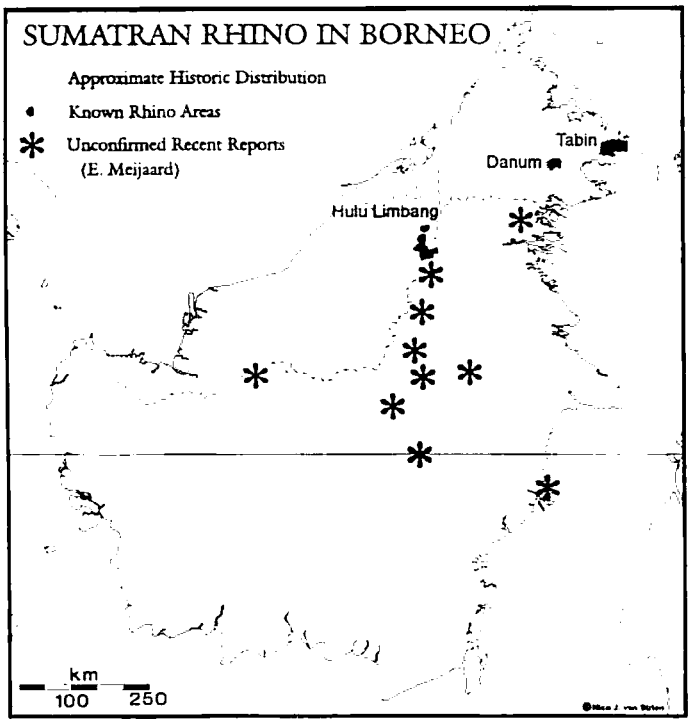
- Assemble as many as possible of persons who have information or involvement in rhino conservation and management in Malaysia.
- Review existing information on numbers, distribution, and threats to Sumatran rhino in Malaysia.
- Simulate probable fates of Malaysian rhino populations under various scenarios of action and non-action.
- Revise Malaysian Action Plan for Rhino Conservation, including formulation of quantitative and measurable objectives.
- Assess progress on GEF Project; adjust the Malaysian GEF Project Work Plan for the next year.
- Develop Recommendations for further action, especially:
  - Specific requests to Malaysia Government(s) (Federal and State) to increase support.
  - Drafts of proposals for other projects and donors.
- Provide training for Malaysian wildlife biologists in application of PHVA techniques to conservation problems.

COUNTRY REPORTS

AsRSG Members in Asian Rhino range states are requested to provide reports on conservation activities and events in their countries for this column. No reports were available for this issue for India, Nepal, Myanmar, Thailand, or Laos.

INDONESIA

DISTRIBUTION SUMATRAN RHINO IN KALIMANTAN



The Bornean rhinoceros (*Dicerorhinus sumatrensis harrissoni*) is considered to be a subspecies of the two-horned Sumatran rhinoceros. Hunting and habitat loss have this sub-species on the brink of extinction. Rookmaker (1977) estimated the total number of surviving rhino in Borneo to be as low as 25 animals. Even after more detailed surveys through 1993, Yayasan Mitra Rhino (YMR) in Indonesia still estimated the total number of rhino in Sabah and Sarawak (Malaysian Borneo) to be about 85. For Kalimantan (Indonesian Borneo) only a vague estimate of "a few" surviving animals could be provided (anonymous, 1993). This last estimate already indicates the almost total lack of knowledge of the present conservation status of rhino in Kalimantan.

In 1994, a survey was initiated to investigate the present distribution range of the Bornean orang utan (*Pongo pygmaeus pygmaeus*), which was funded by the World Wildlife Fund for Nature (WWF) in the Netherlands. This survey was conducted in cooperation with the Directorate General for Forest Protection and Nature Conservation of the Indonesian Ministry of Forestry (DG PHPA) and the MOF Tropenbos-Kalimantan Project in East-Kalimantan. As this survey was going to cover potential rhinoceros habitat in Kalimantan, it was decided to include information on recent sightings of rhinoceros in the orang utan survey. Extra funding was provided by the "van Tienhoven Stichting" in the Netherlands.

The map indicates recent rhinoceros sightings in Kalimantan. All reports are based on information from the local population and refer to the direct observation of one or several rhinoceroses, or their indirect signs, like tracks and faeces. All sightings were made between 1985 and 1995. None of these reports have been confirmed by the author. The survey will continue until the end of 1995, after which a more detailed description of the results of this survey will be presented.

References:
- Anonymous, 1993. Conservation strategy rhinoceros Indonesia (in Indonesian). PHPA & YMR.
- Rookmaker, L.C. 1977. The distribution and status of the Rhinoceros, Dicerorhinus sumatrensis, in Borneo - A Review. Bijdr. Dierk., 47(2):197-204, map 1, table 1.

Submitted by Erik Meijaard
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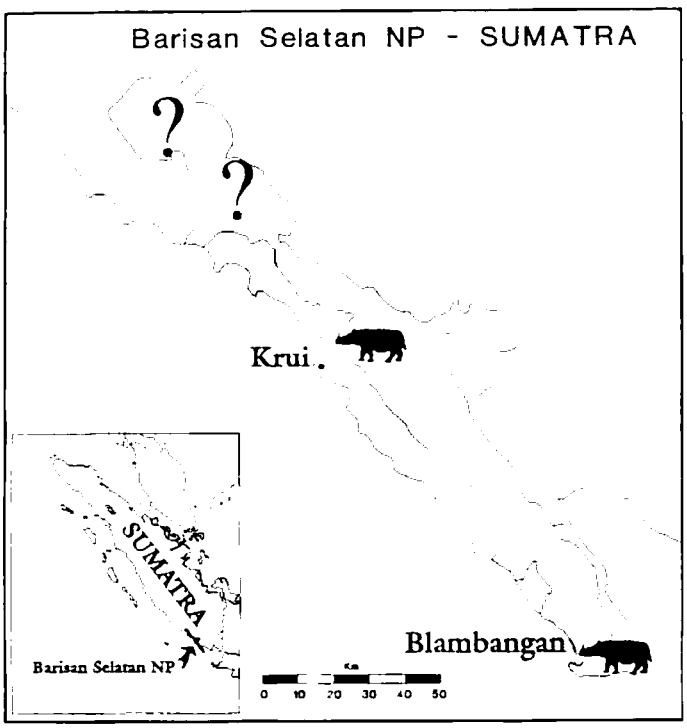
SUMATRAN RHINO IN BUKIT BARISAN

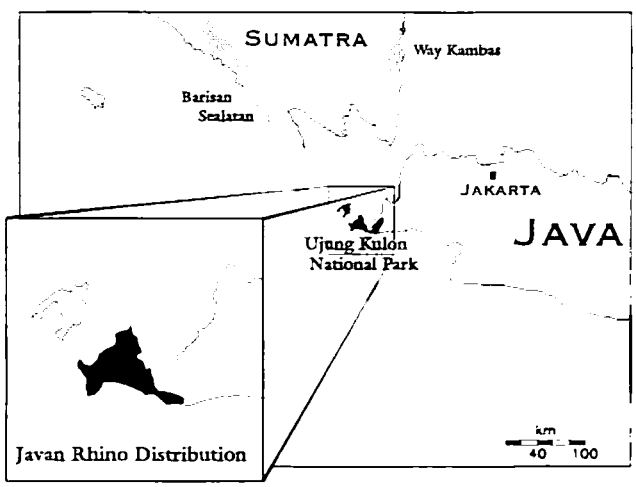


Bukit Barisan Selatan National Park, located on the southern tip of Sumatra, is the third largest protected area in Sumatra (235,000 ha) and is believed to contain one of the largest remaining populations of Sumatran rhino on the island. Although rhino surveys were conducted by Park staff in 1987 and 1990, these surveys were limited to the southern portion of the reserve near the Blambangan and Seman Rivers. Until recently, ground surveys in other areas had not been conducted. In March 1995, we conducted approximately 150 km of ground surveys throughout the reserve. Rhino scrapings and prints were found in three areas: the upper catchment of the Blambangan River (1 scraping), the forest edge near the village of Pangekahan, adjacent to a proposed hunting concession (2 scrapings and 1 set of prints), and 1 set of prints near Way Paya, between the villages of Pangekahan and Way Haru, approximately 1 hour inland from the coast. Villagers from Way Haru claim to recognize 3 different set of prints. All of these sightings were in the southern region of the Park. Although we spent several days in areas of excellent lowland forest between the newly constructed Sukaradja-Bengkunat road and the village of Way Haru, we found no sign of rhino. Additional surveys on the northern boundary of Lampung Province, near the village of Rata Agung produced no sightings. Rattan and garahu collectors active in the area claim that no rhinos have been sighted for over 10 years. In all areas surveyed, representative Sumatran mammals were sighted or signs were detected (e.g. elephant, sun bear, sambar deer, muntjac, mouse deer, pig, otter). Prints of tapir were sighted only in those areas where rhino were also detected.

Our sightings seem to support the general impression that the southern region of Bukit Barisan Selatan N.P. provides better habitat relative to the north for Sumatran rhinos. This may be due to the swampy conditions and more open canopy of the southern forests, or better protection in the south. We believe the proposed hunting reserve in the area of highest rhino density is cause for concern. Ground surveys in Bengkulu Province are still needed.

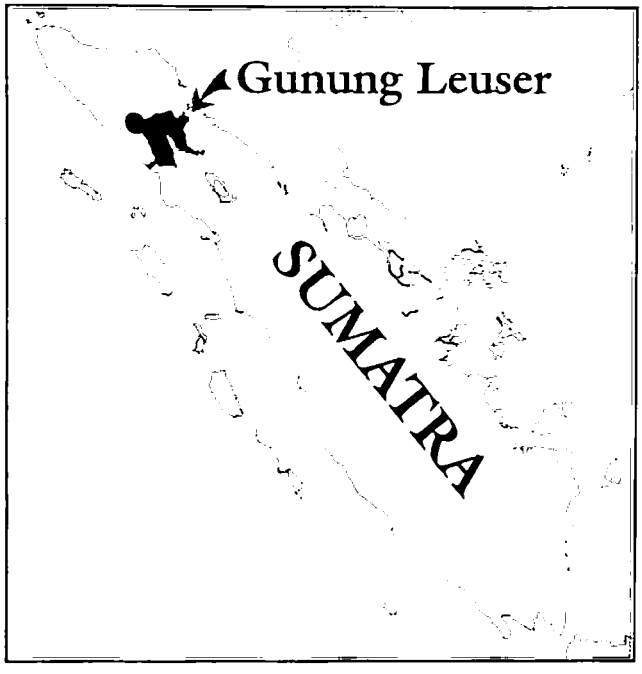
Dr. Margaret Kinnaird & Dr. Timothy O'Brien
Associate Conservation Scientists, Wldlfe Cnsrvtn Society

RHINO POACHED IN UJUNG KULON



At least one rhino was poached during 1994 in Ujung Kulon National Park. A suspect has been identified but no prosecution is in progress at this time. This incident is cause for grave concern. Despite the considerable efforts and funds that have been invested in this last best stronghold of this species, the situation is clearly not secure. More intensive efforts to protect and manage this Park are needed.

EUROPEAN UNION GUNUNG LEUSER PROJECT: FULL STEAM AHEAD!



The European Union has approved a 32 Million ECU grant (~ US $ 43 Million) to support a technical partnership of 7 years for conservation of the Leuser Ecosystem. The Leuser Ecosystem covers ~ 19 000 sq km of State forest land, including the current Gunung Leuser National Park (~ 9 000 sq km).

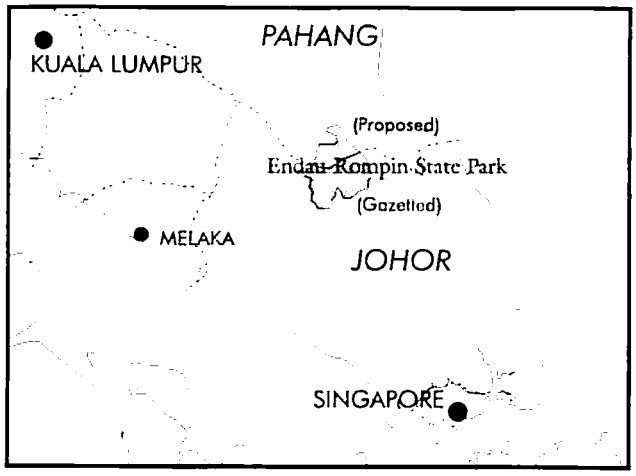
Conservation of the Leuser Ecosystem will be achieved through an Integrated Conservation and Development approach. Conditions for locally desired, ecologically sound developments will be established in a "quid pro quo" exchange of commitments, in covenants, by local communities, to support protection of the ecosystem. To facilitate the programme, a special "Conservation Concession" has been issued to the Leuser International Foundation, who delegates management to a joint Indonesian-EU Management Unit.

Currently, the EU is recruiting international staff for the Management Unit through a inter-union tender procedure. Leuser is the most important area for the Sumatran rhino. Protection of the population in the Central Leuser Rift is a high priority of the project.

Source: H.D. Rijksen, M. Griffiths.
Leuser Development Programme. Masterplan 1995.

MALAYSIA

ENDAU ROMPIN SURVEYS



In 1994 and continuing in 1995, a number of surveys have been conducted in Endau-Rompin in Pahang and Johore, Peninsula Malaysia. This area has been considered to contain one of the largest rhino populations in Peninsula Malaysia, perhaps as many as 20-25. However, there has been much disturbance in the area and delays in properly gazetting major parts of the Park on the Pahang side. Results of these surveys will be assessed further at the Malaysia Rhino PHVA Workshop, but the preliminary reports are cause for concern. Adequate protection and management of this rhino area is vital for the species.

VIETNAM

WHY THE CAT LOC (VIETNAM) RHINOS ARE JAVAN

In response to the Editor's query in *ASIAN RHINOS 1:*

(1) Schaller et al. (1990, *ORYX*, 24:71) were "shown the horn and a piece of skin" of a rhino killed in 1988 by a Stieng hunter in Bao Loc district (west Lam Dong Prov., i.e. in Cat Loc Reserve). The skin is entirely characteristic of *Rhinoceros sondaicus*. The horn differentiates the genera *Rhinoceros* and *Dicerorhinus* well. If Schaller et al. were at all familiar with rhinoceros morphology, this would have been adequate for identification.

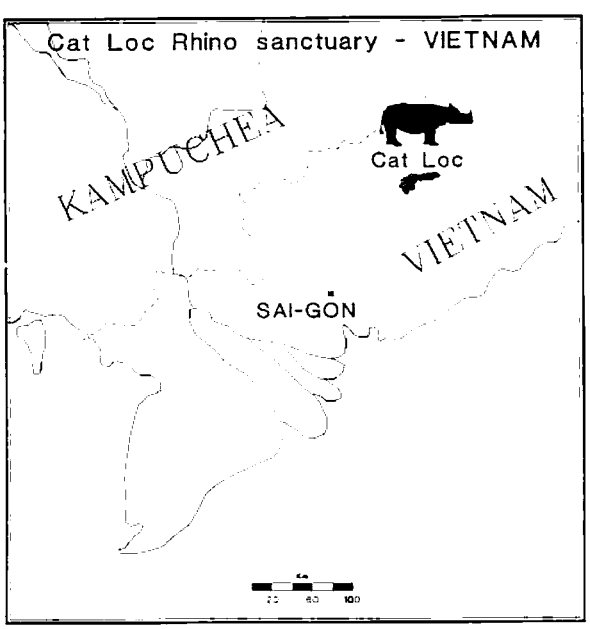
(2) In August, 1994, I was able to measure the partial skeleton of a rhino found dead in Lam Dong in 1978, and now displayed in a glass case in the Ministry of Forestry building, Hanoi.
(a) The skull showed the features of *Rhinoceros* as opposed to *Dicerorhinus*, for example: nuchal surface slants forward; outline of nuchal surface, in rear view, widens markedly inferiorly; dorsal outline deeply concave; subaural fusion of postglenoid and posttympanic. In addition it showed the following feature diagnostic of *R. sondaicus*: premaxillae free from maxillae
(b) The skull showed features which tend to characterize the Vietnamese subspecies *Rhinoceros sondaicus annamiticus* (Groves & Guérin (1980, Géobios, 13, 2:199-208):
- Antorbita width 204, cf. subspecies means:

annamiticus	217.7	(n=3)
inermis	198.8	(n=5)
sondaicus	187.3	(n=15: Java)
	188.8	(n=5: Sumatra)

- Ratio width to height of occiput 175.6, cf.:

annamiticus	181.0	(n=4)
inermis	165.0	(n=4)
sondaicus	186.0	(n=16: Java)
	176.0	(n=5: Sumatra)
	171.0	(n=4: Malaya)

Unfortunately the maxillary alveolar ridge was missing, so the low facial height of annamiticus could not be checked.



A Comment on Haryono et al.'s Report

Schenkel & Schenkel-Hulliger assigned age/sex categories to the Ujung Kulon rhinos using Indian Rhino standards. This was of course a "faut de mieux" strategy, and I have never been entirely convinced about it. The biggest Javan rhinos would be about equivalent in size to Indian females (about 1500 kg): the fully mature Indian male weighs >2000 kg, a figure equalled among rhinos only by *Ceratotherium simum simum*. Hoogerwerf always maintained that age measurements would a little lower; footprints of 24-25 cm would belong, according to him, to animals of 2-3 years old (whereas the Indian female Nanda in Basel Zoo, used to set the standards by the Schenkels, already had a forefoot diameter of 26 cm at 2 years, 8 months). The Cat Loc census would, if this were correct, record two full adults, and probably 1-2 subadults, plus 4-5 young. The age ration is still odd, but not quite as odd as before.

Possible explanations: (1) Haryono et al. report that 10 were poached since 1981. I'm not sure whether one could suppose that adults predominated in this total; they do not give the dates when the poaching incidents took place but, if some had been only shortly before their census in 1983, this might account for the shortage of full-sized adults. (2) The well-documented phenomenon of an expanding population breeding at younger ages than one at carrying capacity?

The Schenkels assumed that, like the Indian rhino, the Javan rhino is sexually dimorphic so that the largest footprints would be those of males. This is definitely not correct. Hoogerwerf thought that females are the larger sex; Guérin agreed with him. I am not so certain about that, but my craniometric data show clearly that there is no male hypermorphosis such as occurs in the Indian rhino; to all intents and purposes the two sexes are the same size.

Nothing is known about whether the female of *R.s. annamiticus* is/was well-horned or not; but on the analogy of the other two subspecies, it might be supposed that decent horns in females are vanishingly rare. I would suppose that females got shot for the same reason as African poachers shoot dehorned rhinos: they want to eliminate an unproductive set of tracks.

Submitted by Colin Groves

CAPTIVE PROGRAMS

SUMMARY - CAPTIVE PROGRAMS SUMATRAN RHINO - 1984 TO 1995

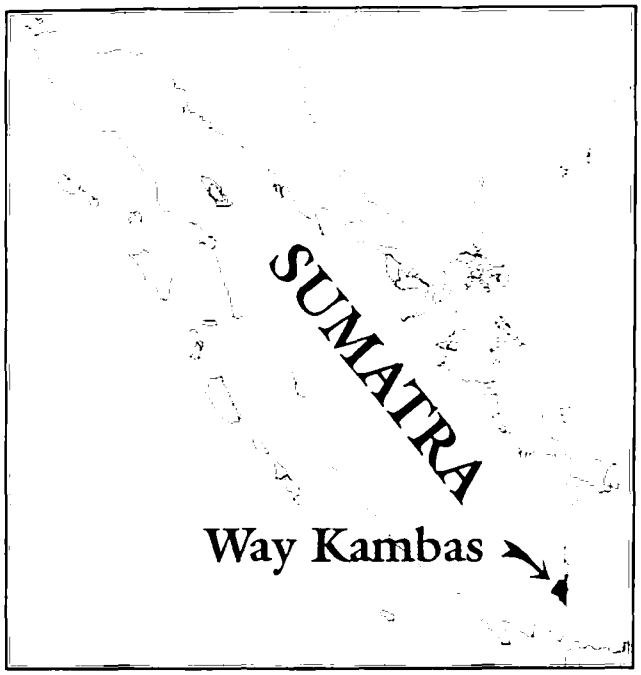
COUNTRY	CAPTURED	BORN	IMPORTED	EXPORTED	RELEASED	DIED	ALIVE
	♂/♀	♂/♀	♂/♀	♂/♀	♂/♀	♂/♀	♂/♀
P.MALAYSIA	3/9	0/1	1/0	0/2		2/2	2/6
SABAH	7/2	0/0	0/0	0/0	1/0	4/0	2/2
INDONESIA	7/11	0/0	0/1	4/7		2/2	1/3
THAILAND	0/0	0/0	0/1	0/0		0/1	0/0
U.K.	0/0	0/0	1/2	0/0		0/2	1/0
U.S.A.	0/0	0/0	2/5	0/0		1/3	1/2
TOTAL	17/22	0/1	4/9	4/9	1/0	9/10	7/13

SUMATRAN RHINOCEROS LIVING IN CAPTIVITY
September 1995

COUNTRY	INSTITUTION	MALES	FEMALES	TOTAL
Indonesia	Jakarta	0	1	1
	Surabaya	0	1	1
	Taman Safari	1	1	2
	Subtotal Indonesia	**1**	**3**	**4**
Malaysia				
Peninsula	Malacca	1	2	3
	Sungai Dusun	1	4	5
	Subtotal P. Malaysia	**2**	**6**	**8**
Sabah	Sepilok	2	2	4
	Tabin (Released)	(1)	0	(1)
	Subtotal Sabah	**2**	**2**	**4**
United Kingdom	Port Lympne	1	0	1
	Subtotal U.K.	**1**	**0**	**1**
United States	Cincinnati	1	2	3
	Subtotal U.S.A.	**1**	**2**	**3**
WORLD TOTAL		**7**	**13**	**20**

There were a number of inaccuracies in the tables summarizing the captive programs for Sumatran rhino in the last issue of ASIAN RHINOS. The above tables provide the correct information.

SUMATRAN RHINO SANCTUARY IN WAY KAMBAS NATIONAL PARK



Progress continues on development of a managed breeding center or Sumatran Rhino Sanctuary (SRS) in Way Kambas National Park on Sumatra. A Memorandum of Understanding was signed in September 1995 by PHPA, the International Rhino Foundation (IRF), and Taman Safari Indonesia (TSI). The MOU will permit IRF and TSI to proceed immediately with construction of enclosures for the rhino and support facilities for SRS staff while the process of completing formation of the Management Company and obtaining the conservation/eco-tourism concession in the Park continues. These plans were described in the last issue of *ASIAN RHINOS*. The IRF has allocated $ 465,000 for the SRS through the end of 1996. Another $ 100,000 to $ 150,000 is needed for completion of the first phase of the SRS.

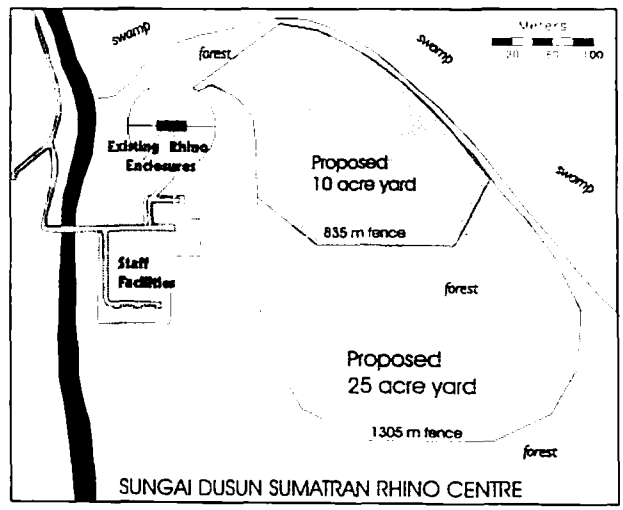
A detailed mapping of the terrain in the area where the enclosures will be constructed is underway, through a contract to the Way Kambas Sumatran Tiger Project led in the field by Neil Franklin and directed by Dr. Ron Tilson. The fence lines will be demarcated by mid-December 1995. Construction of the fence and other facilities will commence as soon as weather allows. At the latest, it is expected the SRS will be ready to receive rhino by May of 1996.

EXPANSION OF SUNGAI DUSUN

The Rhino Conservation Center at Sungai Dusun has been the most successful in terms of survival and health of captive Sumatran Rhino. The Center is situated at the edge of natural habitat in the Sungai Dusun Wildlife Reserve. Its enclosures are relatively large compared to other facilities but probably need to be still larger.

Scientists who have studied this species in both the wild and captivity believe that the lack of reproduction may be due to the size and complexity of the enclosures provided for the rhino. Normally Sumatran rhinos are very solitary in the wild. Males and females only associate when the males detect that the females are in estrus, probably through scent. Courtship is very violent and in the confines of captivity can be very injurious or even fatal to rhino.

For a number of years the Department of Wild Life and National Parks (DWLNP) has had plans to expand the enclosures into the forest. One or two enclosures of 10 hectares (25 acres) were envisioned. In fact, there had been an allocation for this purpose in the 6th Plan but the funds were ultimately reallocated.



Now a donation of $ 50,000 from the International Rhino Foundation (IRF) will permit construction of an expanded enclosure of 4 hectares (10 acres).

While not as large as the 10 hectare optimally planned, an enclosure of this size should significantly enhance the probability that animals will breed. Moreover, the 10 acre enclosure can be easily expanded into larger ones when hopefully funds are available in the 7th Plan.

This contribution represents two matching grants: one facilitated by Dr. Nan Schaffer from a Mr. Herschel Reid who lives in Texas; the other from IRF core funds provided by the Howard Gilman Foundation through White Oak Conservation Center.

WHAT IS WRONG WITH THE CAPTIVE POPULATION OF SUMATRAN RHINOS?

I have seen the facilities for the Sumatran rhinos in Jakarta, San Diego and Melaka. Those in Melaka are the best, but I would like to make a comment which applies even to this one: too much sunlight.

Recently Julian O'Dea, a Visiting Fellow in the Division of Archaeology and Natural History, A.N.U., made UV-B measurements in North Queensland rainforests, and compared them with those made in the open nearby. The results are dramatic, and unanticipated:

Time	Outside conditions	microWatts per cm^2: outside	inside
11-1	strong sunlight	189-245	0-4
11-2	fairly overcast	68-156	0-5 (6 in a small clearing)
4pm	overcast, rain	30	0
9am	clear sky	70	0-5
-	winter in Canberra	80	0-4

This means that Sumatran rhinos - in fact, any terrestrial rainforest animal - will get far too much UV radiation if kept even partly in the open.

The prevalence of cataracts in the captive stock supports this conclusion.

I speculate that, in addition to this, they will be too hot and, especially, too dry outside the humid rainforest microclimate.

I stress that all three zoos have obviously been concerned to keep their rhinos in the best possible conditions. These observations are offered in that spirit.

Submitted by Colin Groves

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1 October 1995

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Please review the information for your entry on this list and advise the editors of any corrections. A number of telephone and facsimile numbers are particularly needed. E-mail addresses would be useful. Thank you.

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Table 1: POPULATION & DISTRIBUTION FIGURES FOR ALL RHINO SPECIES

	Indian	Javan	Sumatran	
INDIA - TOTAL	1320 - 1585			1320 - 1585
- *Kaziranga*	1030 - 1298			
- *Orang*	90+			
- *Manas*	60?			
- *Pobitora*	56			
- *Jaldapara*	33+			
NEPAL - TOTAL	486 - 506			486 - 506
- *Royal Chitwan*	446 - 466			
- *Royal Bardia*	40+			
INDONESIA - TOTAL		50	235 - 320	285 - 470
- *Ujung Kulon*		50		
- *Gunung Leuser*			90 - 120	
- *Kerinci-Seblat*			64 - 77	
- *Barisan Selatan*			25 - 60	
PENINSULA			135 - 200	135 - 200
- *Taman Negara*			22 - 36	
- *Endau Rompin*			20 - 25	
- *Selama*			10 - 15	
- *Belum*			10+	
SABAH	Tabin, Danum		48-68	48 - 68
SARAWAK	Limbang		10?	?
VIETNAM		< 20	?	?
LAOS			?	?
THAILAND			10 (?)	
MYANMAR			10 (?)	
TOTAL ASIAN WILD	1806 - 2091	< 70	418 - 588	2294 - 2849
Captive - Range States	43	0	16	
Captive - Outside Range	91	0	4	
Total Asian Captive	134	0	20	154
TOTAL ASIAN	1932 - 2217	< 70	413 - 563	2448 - 3003

	Wild	Captive	Total
Black Rhino - *Diceros bicornis*	2,550	210	2760
White Rhino - *Ceratotherium simum*	6,784	640	7424
TOTAL AFRICAN RHINO			10184
TOTAL ALL RHINO SPECIES			12632 - 13187