

**THE CONSERVATION OF THE SUMATRAN RHINOCEROS
(*Dicerorhinus sumatrensis*) : A SITUATION REPORT
AND PROPOSAL FOR FUTURE DIRECTIONS**

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1.0 SITUATION REPORT

There are now nine Sumatran rhinos in captivity in the world - two at Howletts & Port Lympne Zoo Park, UK; two in Indonesia (one at the Jakarta Zoo in Java, and the other at Torgamba Base Camp in the Riau Province in Sumatra), four at Malaysia's Malacca Zoo, and one at Bangkok Zoo in Thailand. The sex ratio among these individuals is 6 : 3 in favour of the females. The only potential breeding couple actually together in the same location now is the pair at Howletts & Port Lympne Zoo Park — 'Torgamba' the male and 'Subur' the female.

Up to about November 1985, there were only two of these endangered rhinos in captivity in the world, the first since the last recorded captive Sumatran rhino in the west died in 1972, at Copenhagen Zoo, Denmark; these two were females located at Malacca Zoo, captured in 1984 and 1985 respectively. Clearly then, the potential for captive breeding as an approach to Sumatran rhino conservation has vastly improved within the past year. It will continue to improve providing the world community remains committed to this particular approach. Providing also the various parties concerned are responsible and cooperate with each other on an international basis to set up breeding pairs with benefit to the world population in mind, rather than operating on any selfish nationalistic basis.

The prognosis for such cooperation is good. Besides the three parties already mentioned — the Indonesia and Malaysian authorities and the Howletts & Port Lympne Zoo Park in UK — the American Association of Zoological Parks and Aquariums (AAZPA) may also participate in the Sumatran rhino breeding project in the future. The AAZPA will bring to the project access to high technology methods such as artificial insemination, embryo transplant and transfer etc., and further funds — Howletts looks set

to inject about US\$ 1 million by the end of the project and the AAZPA could match that figure.

Our optimism for the future should however remain cautious: we should not lose sight of the basic problems: the long-term conservation of the species. The Sumatran rhino has been declared one of the world's 12 most endangered species by the International Union for Conservation of Nature and Natural Resources. In the wild, there are only perhaps about 800 Sumatran rhino left worldwide, and about 700 of these are in Sumatra itself (Fig. 1). Many of these are individuals too isolated from one another to breed, owing to deforestation associated with clearance for agriculture, industry or human settlements.

For example, although there is a small population in Taman Negara (the National Park), Pahang state, probably the last truly viable breeding population in Peninsular Malaysia numbers about 20 - 30 and inhabits the Endau-Rompin forests of Johor state in southern Malaysia. Signs are that these southern forests are by no means secure from violations as yet, despite energetic campaigning by local conservation groups. As for East Malaysia, the situation is even worse, with only one small potentially viable population extant, out of a total of perhaps 30 - 40 Sumatran rhino, possibly belonging to a Bornean subspecies. Poaching seems to have been culling this total at a rate of something like 3 or 4 a year.

Only six reserves anywhere in the Sumatran rhino's modern range — Sumatra and Malaysia, perhaps parts of Thailand, Indochina and Burma too (Fig. 1) — are known to offer the required "carrying capacity", estimated at 1000 ha for every rhino. This would imply a necessary total of 70,000 ha. (700 km²) for an optimally viable population of 70 rhino. With Sumatra itself, the situation is only slightly better, with only three viable breeding populations now in existence. The Torgamba area in which our joint Howletts and Indonesian government capture operation has chosen to work, between the villages of Bakambatu and Tanjungmedan in Riau province, exemplifies the problems. In this area, a patch of about 30,000 ha of forest has been surrounded by oil-palm plantations, except for a large swamp on its eastern side. Logging roads intersect the forest in all directions, allowing access to illegal settlers, and disrupting the rhinos' usual patterns of movement. Within this area, a population of about 20 rhino has become marooned without access to the forested hinterland.

Prof. Rubini Atmawidjaja, Director-General of the Directorate of Forest Protection and Nature Conservation (PHPA) of the Ministry of Forestry, has had to intervene personally to freeze logging in this area for the next three years. Nothing could illustrate the problem more dramatically than the fact that the two Sumatran rhino our operation captured in June 1986 - the male "Napangga" on the 15th, and the female "Subur" on the 22nd - both had serious leg wounds inflicted by trappers' snare-wires, the wires still deeply embedded in the flesh. There seems little doubt that had we not captured these two animals, they would have died a lingering death

from gangrene. As it is, the male is still fighting recurrent infection despite careful treatment thanks to Howletts' specially air-flown Director and vet, Dr. Tom Begg.

It seems likely that there are still more Sumatran rhino to be found in two or three other unprotected pockets of forest within Sumatra: reports have been received from about 50 km north of Pekanbaru and from the hills to the west of Torgamba itself. As human activity intensifies in these areas, we may expect the incidence of poaching to increase. The Sumatran rhino is in crisis.

2.0 SUMMARY OF SUMATRAN RHINO CAPTURE OPERATION

1982: First discussions between Indonesian authorities and Howletts & Port Lympne Zoo Park, UK.

October 3 - 4, 1984: *Ad hoc* Sumatran rhinoceros meeting convened by the IUCN/SSC in Singapore discusses pros and cons of captive breeding.

May 24, 1985: The joint agreement signed by Indonesian Government and Howletts & Port Lympne Zoo Park, UK.

August 1985: Howletts-Indonesian joint project goes ahead.

September 1985: Base camp constructed at Torgamba.

September — October 1985: Survey of rhino trails, under the supervision of capture expert, Tony Parkinson, working with Indonesian rangers and foresters in training.

November 25, 1985: young male "Torgamba" found in pit trap, and transferred to a pen the next day. Almost hairless at first, he grew a long coat of hair in captivity. Transferred after eight weeks to one of two specially constructed base camp paddocks, 400 m².

January 23, 1986: Adult female found in stockade trap, in panic. She died the same day, apparently from a cerebral haemorrhage induced by self-inflicted injuries when banging herself against the stockade fencing in an effort to escape. Such violent behaviour is unusual for the Sumatran rhino but this was a bitter reminder that so delicate an operation cannot be expected to be roses all the way.

March 24, 1986: A second young male "Jalu" caught in pit trap, later moved to Jakarta Zoo, where Howletts' staff are training Indonesians to manage and breed the Sumatran rhino.

April 1986: "Torgamba" travelled 200 km by truck to the port of Dumai for transfer to a ship bound for Singapore. After a three-day voyage, he transited at Singapore's Changi International Airport and left on April 4, on a Singapore Airlines Combi (Passenger-freight) Big Top jumbo jet for Manchester airport, UK, where he travelled another seven hours by lorry to Howletts in Kent.

June 15, 1986: Capture of third male, "Napangga" in pit trap — still at base camp partly because of infected snare wound on leg. Snare wire

successfully removed without anaesthesia.

June 22, 1986: Capture of a female, "Subur". Infected snare wound on leg successfully treated and snare-wire removed under anaesthesia by Dr. Begg.

August 25, 1986: "Subur" moved to Singapore, this time via Airfast Charter plane to Seletar Aerodrome, then to Changi Airport for SIA flight to Manchester, UK, as with "Torgamba".

To date all the animals are doing well in captivity. Perhaps the most valuable lesson we have learned, for this operation and for future ventures, is that the pit trap, while dangerously susceptible to flooding during the monsoonal rains, is less stressful for the Sumatran rhino than the stockade type, perhaps because it is darker and movement is more restricted inside it. However, once caught in a pit trap, the animal must be moved to a holding pen nearby as soon as possible.

We are treading pioneer, and at times treacherous ground, for little is known of the Sumatran rhino's habits, least of all its breeding habits, nor of how easy it will be to re-introduce the animal into the wild. The burden of responsibility for the survival of a threatened species weighs heavily on our shoulders and we are acutely aware that the eyes of the conservation world are upon us. We are also aware that on our success hinges the future of many other threatened species which could similarly be captive bred: prime examples of course are the extremely rare Javan rhino, on which subject I am presenting a separate paper at this conference, as well as the Southeast Asian wild ox or Kouprey.

3.0 PROPOSALS FOR THE FUTURE

All isolated "doomed" rhinos in Sumatra should be translocated into captivity or into suitably protected areas. However, we believe captive breeding to be safer, from the point of view of monitoring disease, poaching and territorial competition, amongst other likely problems. Captive breeding also allows closer observation so that valuable data on the animals' habits can be gathered for application to better management of populations still in the wild.

Maximum commitment in terms of energy, funds, manpower etc. should be made to the protection of the three remaining viable populations in Sumatra, at Gunung Leuser, Gunung Kerinci-Seblat and at Barisan Selatan.

Efforts to conserve natural habitats still available to rhinos in the wild must be continued, indeed strengthened and accelerated. At no time must we lose sight of our ultimate objective: the re-introduction of the species into the wild.

Public relations is important, both within the rhino's homelands and worldwide — every effort should be made to increase public awareness of

the rhino's plight, by publishing press articles, leaflets, books, photos and films etc. We intend to fulfil all these objectives in time: the well known Indonesia based wildlife photographer, Alain Compost, is currently working with us to document all aspects of the capture and breeding operations in both still and movie photography. We would appeal to the parties concerned not to be so secretive as to arouse public suspicion, where skilled public relations and proper liaison with sympathetic press men could swing public opinion in our favour.

The institution of studbook keeper is already beneficial for the better coordination of the captive breeding colony — a Sumatran rhino studbook will be published, with additional relevant articles on conservation, husbandry, ecology etc.

ACKNOWLEDGEMENTS

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His Excellency The Minister of Forestry of Indonesia, Dr. Soedjarwo

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Mr. John Aspinall, Chairman, Howletts & Port Lympne Zoo Park.

The Staff of Jakarta Zoo, Indonesia.

Mr. Tony Parkinson, Director, Field Operations.

Dr. Tom Begg, Director, Howletts & Port Lympne Zoo Park.

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Warehouse and Transportation Pte Ltd. Singapore.

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DISCUSSION

RUBINI : pointed out that the pit traps proved to be more effective than the surface traps, and asked to what extent the captive breeding programme would be successful? He added that the Indonesians lack the expertise and the necessary funds, and wanted to know how these could be overcome. He inquired from the speaker how long it would take before the progeny from captive breeding programme could be re-introduced into the wild ?

NARDELLI : mentioned that he would like to extend the capture programme to other areas where the rhino was doomed. The AAZPA in his opinion should join hands with Howletts and Port Lympne Zoo Park (HPLZ) as soon as possible and 'inject more funds and high technology into the programme'. He further recommended the development of buffer zones. He welcomed Mr. Syafii Manan's proposal to catch rhinos in the province of Jambi, Sumatra.

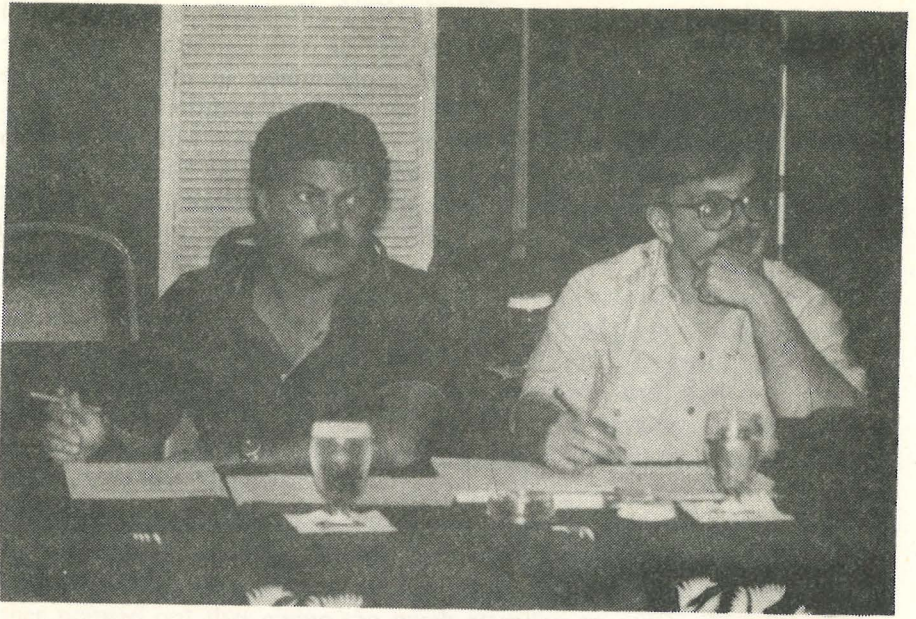
WIDODO : emphasised the need to improve the present guard system in the reserves in sumatra. He felt that with proper protective measures, the prospects for the long-term survival of the rhino can be improved. He further pointed out that giving too much attention to captive breeding was not wise for fear that people might forget that three were animals in the wild too! He expressed his fears that local people, ignorant of the reasons for the capture of the rhinos, might become tempted to follow suit on their own. In view of this, he urged that conservation education be extended to grassroot levels especially in areas where the capture programmes were going on, in order to inform the people at large what exactly was being done.

NARDELLI : expressed his commitment to the *in situ* conservation of rhino. However, he added that at the present time, the priority must be on financing operations to deal with the doomed populations. In response to WIDODO's argument, he pointed out that there was a distinct difference between what the HPLZ was doing in Torgamba and what was being done by the poachers elsewhere. While the poachers capture and kill the rhino, the HPLZ capture programme was designed to save the rhino and not to kill it. He further added that more often than not, poaching was carried out by professionals to whom no amount of conservation education was likely to bring about a change of attitude.

SANTIAPILLAI : quoting Mr. Aspinall's estimate (as mentioned at the Singapore Meeting in 1984), "In Indonesia, 400,000 ha of forest are demolished per annum", wanted to know how optimistic one could be if such a trend were to continue into the future, that proper habitats would be available for the re-introduction of rhino from captivity ?

FOOSE : pointed out that it would be difficult to predict what the future might hold. Therefore, he emphasised that while all efforts should be taken to protect the rhino in the wild, other options too must be made available to safeguard the species.

RUBINI : expressed his optimism that all the forests in Indonesia would not be completely destroyed. Nevertheless, he was concerned about the ultimate success of any re-introduction programmes, in the light of the situation concerning the orang utan in Indonesia. He mentioned the efforts of Dr. Birute Gladikas in rehabilitating the orang utan with the view to releasing the animals at some future time into the wild. But so far this operation had not been successful and so he feared that similar difficulties might also arise in the case of the rhino. Reference was also made to the Bali Starling.



Mr. Francesco Nardelli and Dr. Thomas J. Foose, representing The Howlett and Port Lympne Zoo and the American Association of Zoological Parks and Aquariums (AAZPA) respectively during the Technical session.



Mr. Jansen Manansang, owner of The Indonesian Safari Park, seen here with Dr. Chira Meckvichai and Mr. Mohd. Khan bin Momin Khan, during their visit to the Safari Park in Cisarua, about 20 km south of Bogor.