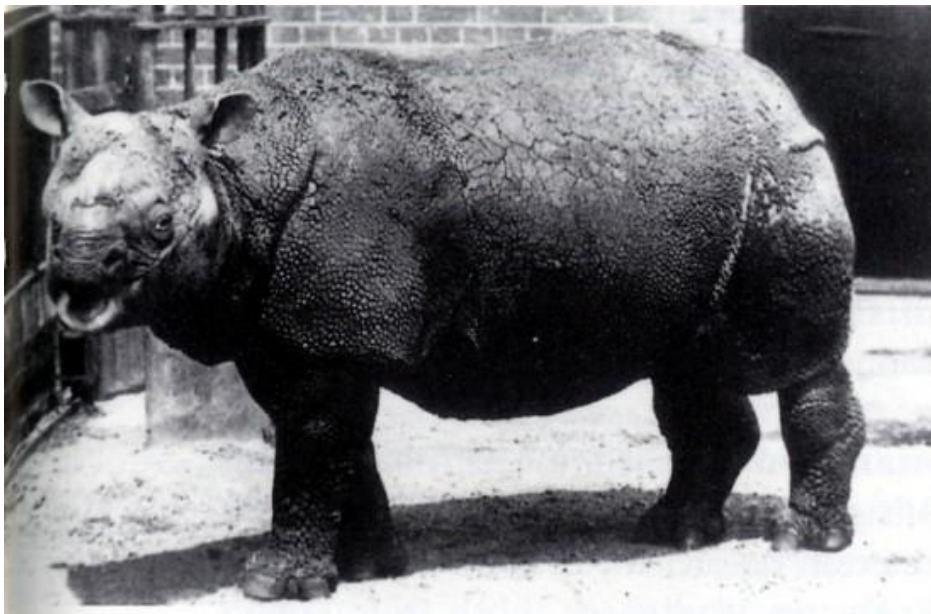
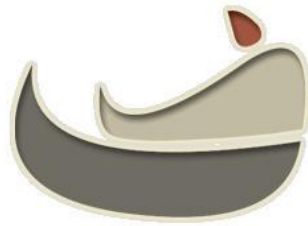


ASIAN RHINOS IN SINGAPORE, AND THEIR SURVIVAL IN THE REGION

Dr Kees Rookmaaker
Chief Editor, Rhino Resource Center
www.rhinoresourcecenter.com

Abstract

The first rhinoceros kept in Singapore lived in the Botanic Gardens in 1875. It was a Sumatran rhino (*Dicerorhinus sumatrensis*) caught in Malaysia. Two other specimens of the same species followed in 1900 and 1901, both of which were shipped to the Vienna Zoo, where one of them lived for eighteen years. Singapore Night Safari now has Indian rhinos, but it is unlikely that examples of either the Sumatran or javan rhinos will become available for public exhibition in the near future. Javan rhinos have been rarely seen in captivity, and less than 25 animals have ever been recorded in a zoo or other captive environment. The conservation emphasis is now largely on semi-in situ situations, where the animals can be monitored while they remain close to their original habitat, avoiding problems of climate and food supply. The emphasis of zookeepers interested in these Asian species should now be to assist the efforts of projects currently based in Indonesia and Malaysia (Sabah). The current situation of rhinos in South-East Asia will be explored and possibilities of involvement by zoo personnel around the world will be highlighted.



Javan rhino in London Zoo 1874-1885

Text of presentation

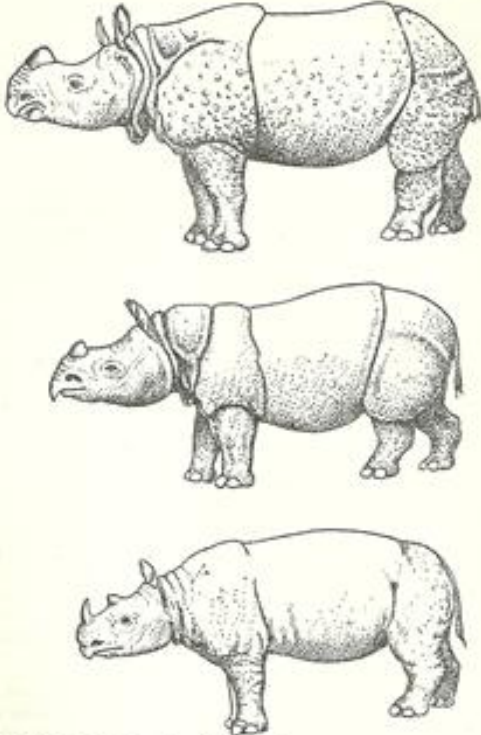
Here is a photograph of a Javan Rhinoceros (*Rhinoceros sondaicus*) taken in a zoo a century ago. It would be the dream of many zoo directors to be able to take such a picture today, but a dream one would think beyond the boundaries of possibilities today. The Javan rhino, the slightly smaller relative of the Indian rhino with a characteristic skinfold in the shoulder region, is really a mystery animal. Today of course we class it as “Critically Endangered C2a(i); D”, but such an IUCN classification in this case really only starts to tell the story. There are only about 40 or 50 Javan rhinos left alive in the world, so it is easily one of the rarest, most elusive and most endangered mammals anywhere in the world.

The Javan rhino is, and always has been equally rare in a captive setting. When we discount vague early records from Indonesia and animals that were in the hands of dealers for a short time only, there are only definite records of five specimens. These animals were exhibited in the zoos of Calcutta, Adelaide and London in the 19th and early 20th century. The one in Adelaide lived for just over 20 years in the zoo, setting a record for the species, but was always thought to be an Indian rhino until his remains were again examined in the museum. This shows how easy it is to confuse these two Asian single-horned species of rhinoceros. Maybe therefore there were a few more Javan rhinos in zoos in the early days, but I very much doubt that we will ever need more than two hands to count them.



Rhinoceros exhibited in Adelaide Zoo

Here is a map of the historical distribution of the Javan rhino as best as it can be mapped. These maps of past range have to be based on records in the literature and on data associated with zoo and museum specimens. In case of the Javan rhino there is always a possibility of confusion with other rhinos, except in Java. When I first did a literature survey of the records of rhinos in Vietnam, Laos and Cambodia thirty years ago, there was no certainty which species occurred in that region. I think that I was the first to suggest, quite carefully, that it was the Javan rhino which was the usual species there. Soon after, George Schaller found evidence on the ground when a population was discovered in Cat Tien National Park in South Vietnam. They were there then, but just a few years ago the last of its kind in Vietnam was slaughtered by poachers.



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Indian Rhinoceros
Rhinoceros unicornis Linnaeus, 1758
 Vulnerable B1ab(iii)

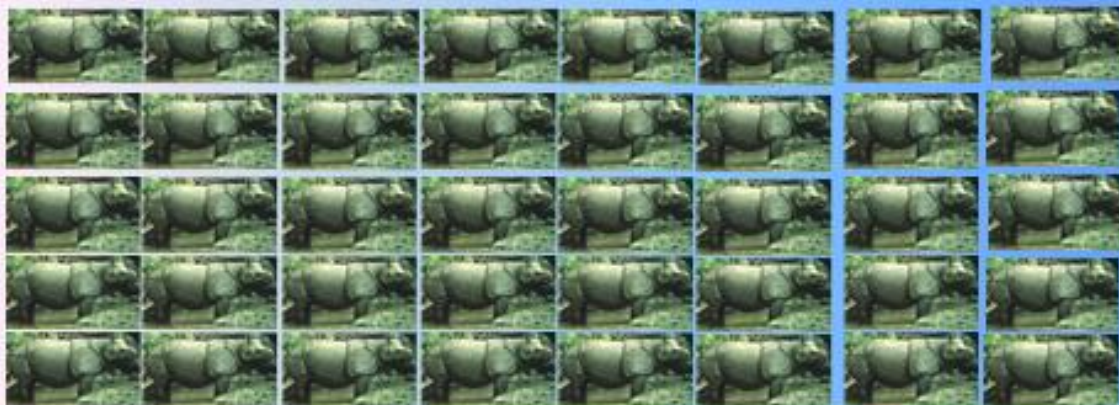
Javan Rhinoceros
Rhinoceros sondaicus Desmarest, 1824
 Critically Endangered C2a(i); D

Sumatran Rhinoceros
Dicerorhinus sumatrensis (G.Fischer, 1814)
 Critically Endangered A2abd; C1+2a(i)

<http://www.iucnredlist.org/>

H.J.V. Sody, 1959. Das Javanische Nashorn.

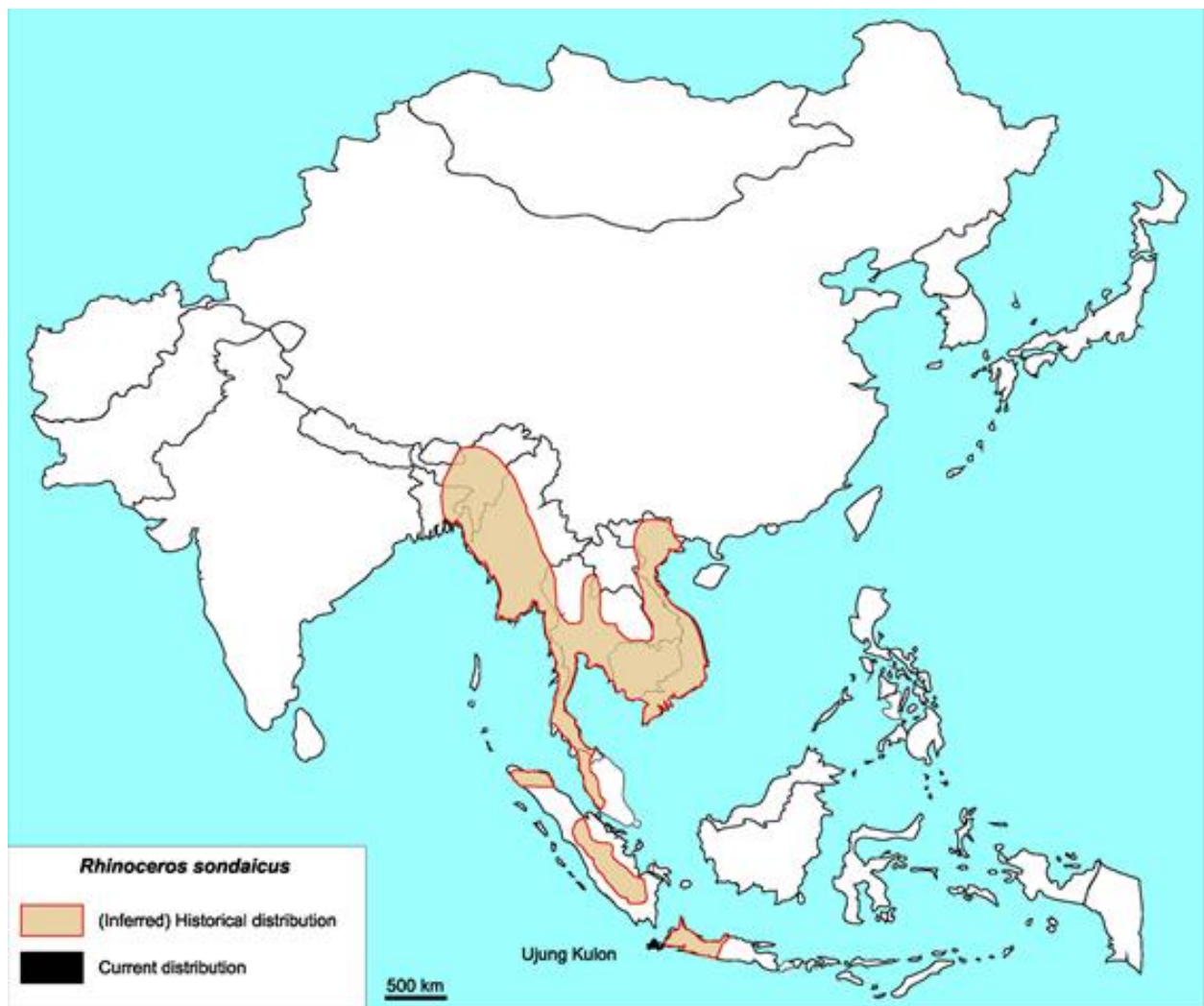
All Javan Rhinos remaining today



40  41  42  43  44



And all in one place ...



Historical and current distribution of *Rhinoceros sondaicus*,
Revised from map by Nico van Strien in 1998

Although we are all aware that only a small percentage of data filters through the pages of books and articles, it is quite amazing to realize just how few records we have of Javan rhinos existing anywhere within their range. A mining engineer Charles Loch did a survey in the 1930s and recorded all known instances where a Javan rhino was known to exist in Malaysia at the time. He was able to record just eight records, at a time when most zoologists would say that there may have been hundreds of them, or at least a few thriving populations. The Javan Rhino should provide a prime research project to improve our understanding of the reasons why mammal species go extinct. Javan rhinos tend to emerge from the obscurity of the forest just sometimes, like when a Dutch hunter called Hazewinkel, in 1931 went on a hunting trip in South Sumatra and within a few days was able to find and shoot seven rhinos, probably in a place until then unknown to harbour any of these animals.



Hazewinkel and his trophy in South Sumatra

There are plans afoot recently to translocate some rhinos out of their last secure refuge in the far western tip of the island of Java, the Ujung Kulon National Park. Ever since I can remember, the population in the park has been estimated between 30 and 70 specimens. Rare, but secure and breeding. At the same time very much at risk from disease or natural disasters, because all remaining animals are in just one place. The first task is to keep their haunts as pristine as possible, and maybe there is something to be said to keep intense protection and limit all other intrusions into the park. Translocating some animals was first mooted in the 1980s, but of course we now know much more about the techniques of capture and tranquilizing to make this a much better option. A second location in West Java has been identified. We trust that all agencies involved as well as the Indonesian Government will do their best to preserve the last of their kind.



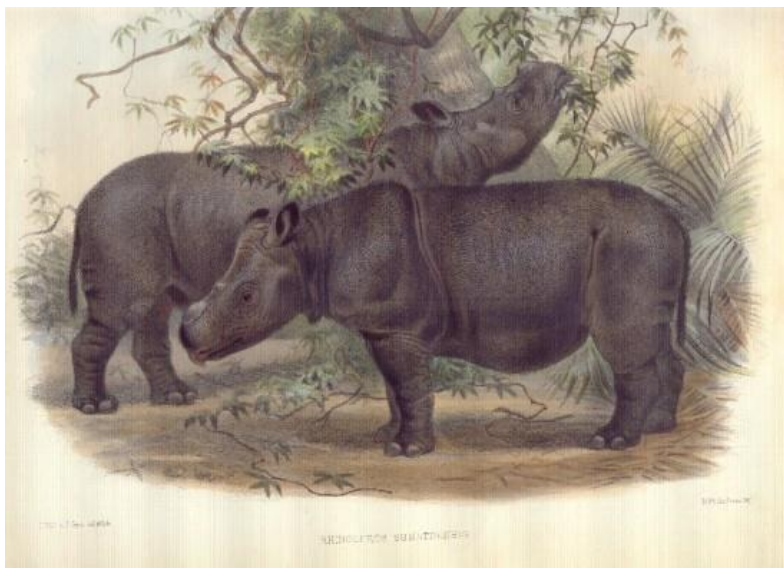
There has only once been a Javan rhino on Singapore soil. The animal that arrived in Adelaide in April 1886 had been obtained from a dealer here in Singapore. But we don't have any further details, and it is unlikely that it was ever displayed to the public at the time. Chances to see one of these animals in Singapore today are not good, and also zoo keepers do not really need to start studying the husbandry of the species in captivity, at least not yet.

A second dream picture to any zoo director would be to show a Sumatran rhino (*Dicerorhinus sumatrensis*) to the zoo visitors, but really the true dream should be to have a pair of these animals. Some zookeepers have actually been fortunate enough in the past thirty years to be in charge of one or more of these smaller rhinos. The animals were captured in localities where forests were replaced by urban developments or commercial plantations. The rationale behind these efforts was essentially sound: the forests were threatened, the habitat of the rhinos destroyed, and the animals themselves could only be saved by capture. They could then be brought together in zoos where they could breed and thus keep the species from extinction.



Torgamba and Bina in Way Kambas National Park, Sumatra

There have been about a hundred Sumatran rhinos in zoos around the world from 1872 to the present. They have been quite rare in European and American zoos. Most only lived for a short period, showing how difficult it is to take good care of these animals. One animal lived in London Zoo for 28 years at the end of the 19th century, for a long time exhibited together with a potential mate, but the two animals never bred. Their keepers must have been proud however to be able to show them to the public for such a long time.



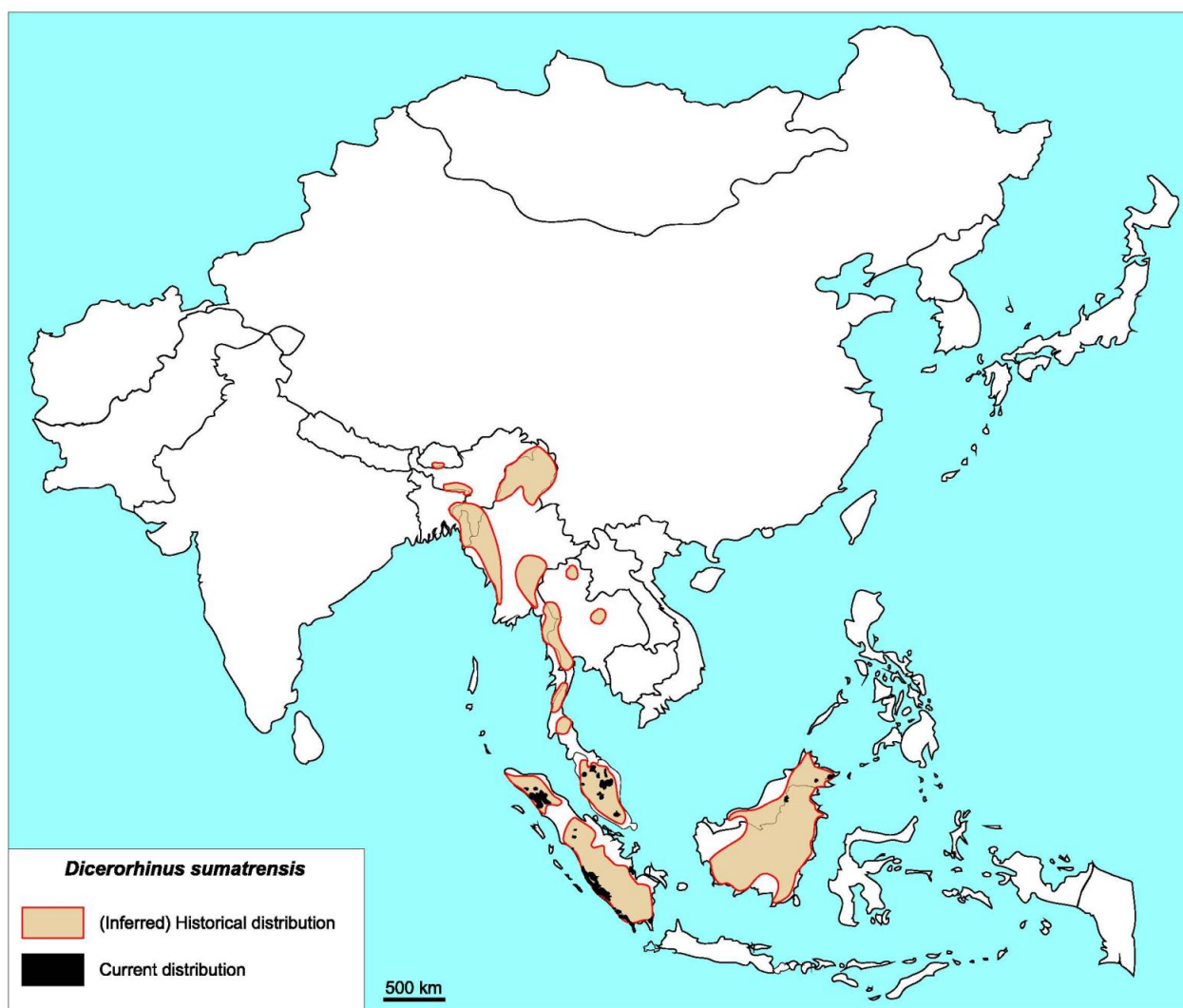
Sumatran rhinos in London Zoo in the 1870s

One of the early animal collections in Singapore was the one which was established in the Botanic Gardens in the 1870s. Very soon after the idea was launched, one of the Malay princes donated a large female rhino to the governor Sir Andrew Clark. Although said at the time to be in calf, she never delivered. She must have been a major challenge to the fledgling zoo, creating major challenges for management and keepers alike. As far as we know, she only lived for a few years. Then in 1900 some rhinos were obtained by the Austrian Consul in Malaysia, and before shipment to Vienna they were kept for a while in the Botanic Gardens, again providing an opportunity to all Singaporeans to go and see them. One of the animals died here in transit, but two others, both female, eventually made it to Austria. Both were said to be particularly bad tempered, and at one time the keeper was violently thrown against the wall of the enclosure, only just escaping this attack alive. Never underestimate the strength and temperament of these animals.



One of the rhinos first exhibited in the Botanic Gardens Singapore
After her arrival in Vienna

Sumatran rhinos also had an extensive historic range. Again we must use this in the past tense, because populations have declined and disappeared during the last century. Sumatran rhinos are elusive animals. Studies of their behaviour and ecology have never been easy, because it is almost impossible to get even a short glimpse of them in their forest habitat. Researchers have had to rely on footprints and other signs of presence, rather than on direct observation, making it very difficult to draw conclusions. It is therefore also hard to estimate their numbers, although again it seems that they are never particularly plentiful anywhere. Again we do not know the exact mechanics of their road to extinction, but certainly at present it seems that the most major factor impeding their existence is the fact that there are too few of them left to allow them to find mates in the wild and breed naturally.



Historical and current distribution of *Dicerorhinus sumatrensis*,
Revised from map by Nico van Strien in 1998

Sumatran rhinos have persisted in recent times especially in Peninsular Malaysia, Sabah in the northern part of Borneo, and in Sumatra. As their existence is precarious everywhere, it was decided in the late 1990s to capture some animals and keep them in a semi-captive situation in or very close to their original habitat. When a rhino population was discovered in the small Way Kambas National Park near the southern tip of Sumatra around 1995, it was first thought that they would belong to the Javan species. That was logical, because the

footprint sizes seemed to indicate that and Hazewinkel's shooting trip had not been too far away from the park. However, later it turned out that they were all Sumatran rhino.



Rhino found in a snare by a Rhino Protection Unit in Sumatra

To ensure the long-term success of the rhino breeding centres, as well as to extend the benefit to the general habitat and other species on the region, new teams of rangers were formed, called Rhino Protection Unit or RPU. These teams in Indonesia are managed by the national parks and have proved a great way to provide the necessary protection to the parks, to reduce human encroachments into the parks and to curtail poaching.



Puntung, the rhino captured in Sabah in December 2011

There are currently two projects aiming to capture and breed Sumatran rhino in such an in-situ managed situation, one in Sabah and one in Way Kambas. In Sabah there are now three animals in the centre: an old female "Gologob" who is now unable to breed; a healthy male called Tam, now about twenty years old and in the prime of his life; and in December 2011 they were joined by a female "Puntung" who was captured after 1 ½ years of failed attempts.

There are still other rhinos in Sabah, few of them able to breed, and it is hoped that the centre can extend and prove successful.

The centre in Way Kambas is doing very well. I am sure that many of you have heard that on Saturday 25 June a young male was born, called Andatu. This is really one of the major conservation events, which now gives hope that other young ones may follow soon.



Andatu, two weeks after birth in July 2012 (photo SRS)

Zoo directors, zoo keepers and the zoo public in most parts of the world, including Singapore, can only dream of seeing a Sumatran rhino in the gardens. If it ever happens again, it will entail major commitments of space, husbandry, research, and investment, not just to show the animals for educational purposes, but to make a direct impact on the long-term preservation of the Javan and Sumatran rhinos.



Sumatran rhino in Rangoon Zoo 1916

The zoo community of course can help the conservation efforts by raising funds for in-situ projects, the breeding centres in the range states, as well as research. Zoos have a great potential for educating the public as well as giving guidance about potentially rewarding nature conservation projects.

The **Rhino Resource Center** is committed to assisting research and conservation of the rhinoceros worldwide by collecting all publications and maintaining archives. Edited by Dr Kees Rookmaaker.

All this is accessible without fees in an effort to streamline research and contribute to rhino conservation.

Please donate to this charity

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The Latest Rhino Images

Literature
The RRC has 17,163 references with 16,206 downloadable PDFs.

Latest References

Breda, M. et al., 2012, Le Mostre di Palazzo Turchi di Bagno. *Annali dell'Università di Ferrara - Museologia Scientifica e Naturalistica*, Ferrara, 8 (1): 49-53, figs 1-7.

Becherens, H. et al., 2005, Isotopic evidence for diet and subsistence pattern of the Saint-Cesaire I Neanderthal: review and use of a multi-source mixing model. *Journal of Human Evolution* 49: 71-87.

Cook, J., 2009, Training successes with southern white rhinoceros at Colchester Zoo. *Ratel* 36 (4): 5-7.

Anonymous, 1852, De rhinoceros-hoorn. *Biang-Lala, Indisch Leeslaboet* 1 (1): 93-97.

Vrolik, W., 1854, Het leven en het maatzel der dieren, volume 1. Amsterdam, M.H. Singer.

No project anywhere, be it in-situ conservation or ex-situ research, can ever be successful without a sound knowledge what people have done in the past or what people are doing in other parts of the world. Why do we need to make the same mistake once or why would we not learn from the break-through and successes of others. Knowledge disappears when it is not written down, and when it is not available after it has been published. In the case of rhinos, the Rhino Resource Center provides a powerful and extensive resource by collecting all available information. At present, over 17,000 references are catalogued and most of them are available for free, to everybody with access to the internet, free and unrestricted. Because the Rhino Resource Center is so unique, and has to be a continuous effort, our fundraising success has been very limited, even though in essence a relatively small amount is needed annually. Everybody interested in rhinos, at whatever level and on whatever location, will access the Rhino Resource Center with a good chance of finding the information needed. I am of course open to offers of participation in the Rhino Resource Center.

Let me finish by thanking those who contribute to the Rhino Resource Center (in no particular order): Rhino Carhire, Save the Rhino International, WWF AREAS, SOS Rhino and the International Rhino Foundation.

Kees Rookmaaker

Kees Rookmaaker is the Chief Editor of the Rhino Resource Center, which catalogues over 17,000 references on the five species of extant rhinoceros. He is a zoological historian working for Darwin Online and Wallace Online at the National University of Singapore.. He has published eight books, both on aspects of rhinoceros studies and on the zoological exploration of southern Africa before 1850.

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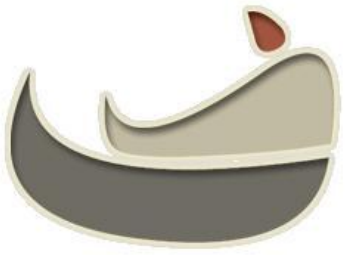
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Facilitating Communication Across Disciplines and Across Continents

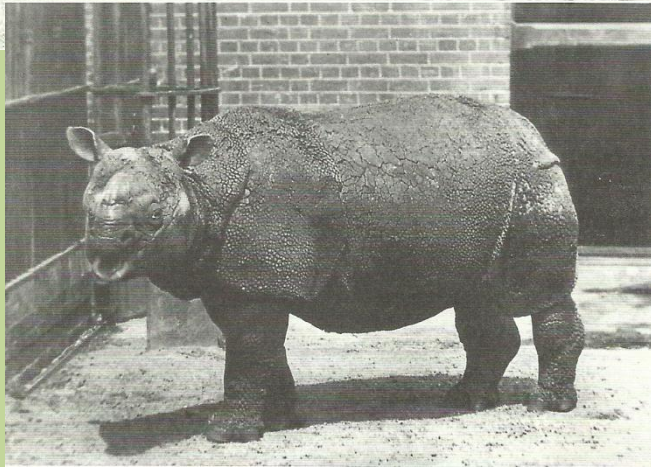
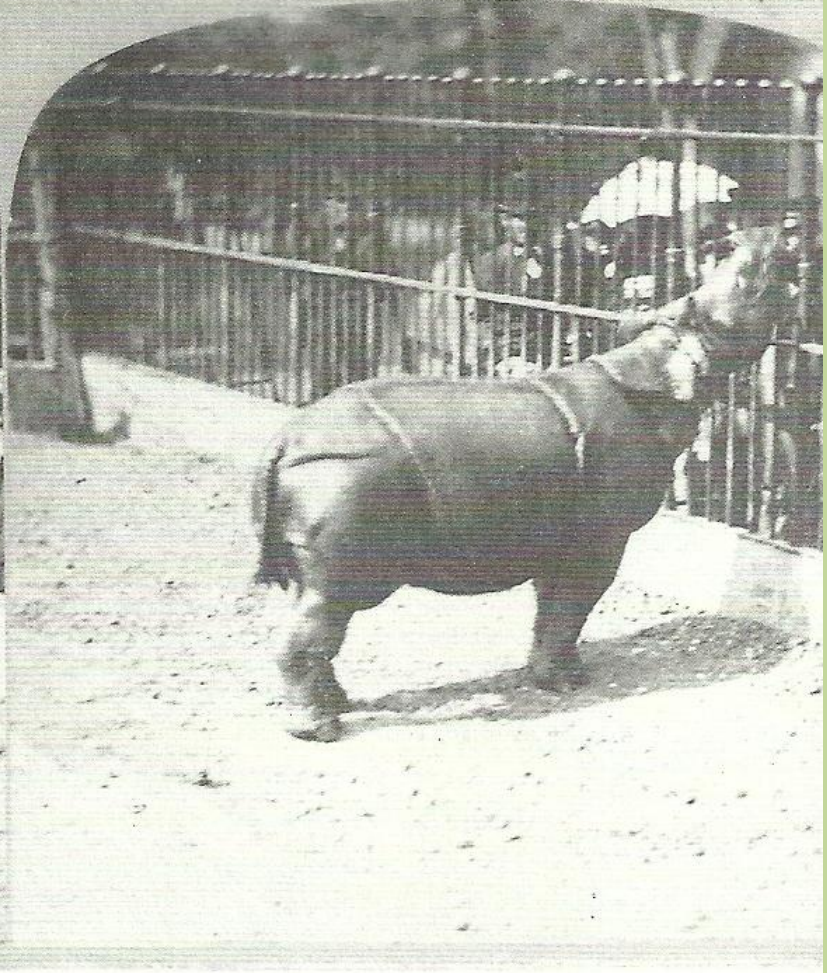
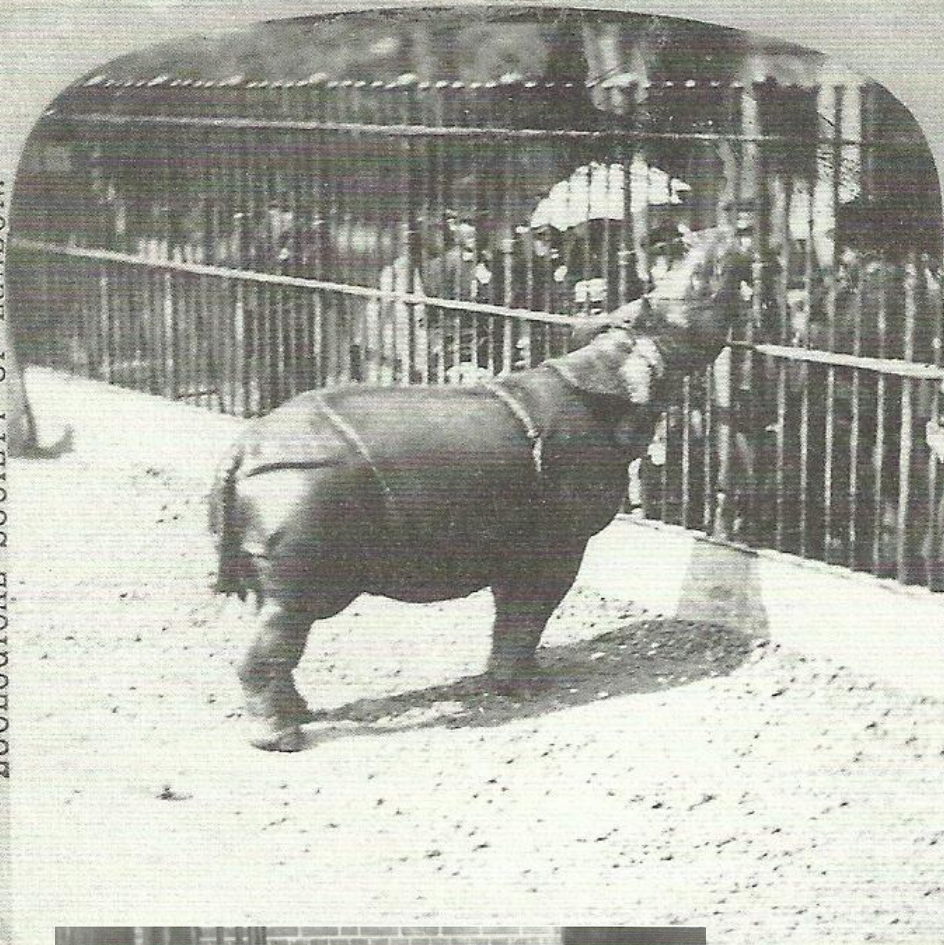


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ASIAN RHINOS IN SINGAPORE AND THEIR SURVIVAL IN THE REGION

by Kees Rookmaaker

ANIMALS IN THE GARDENS OF THE
ZOOLOGICAL SOCIETY OF LONDON.



London Zoo

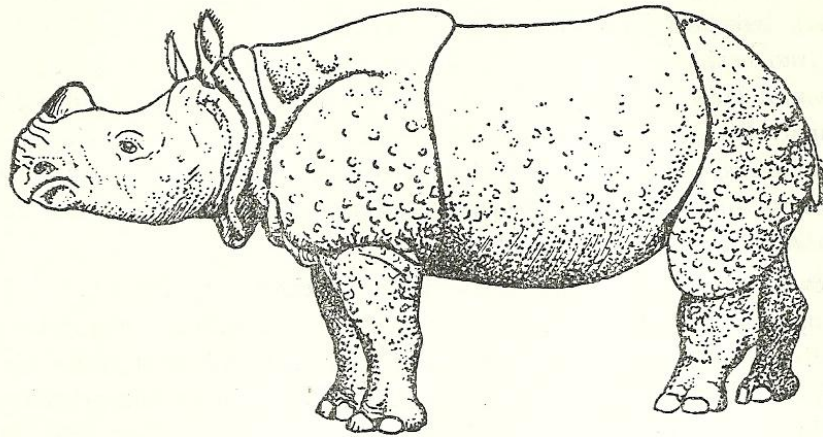
7 March 1874 – 23 January 1885

Photos by Frederick York (1875) and
Thomas Dixon (1884)

{Collection John Edwards}



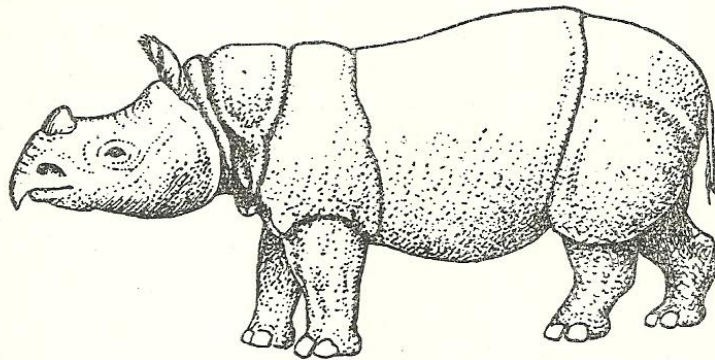
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Indian Rhinoceros

Rhinoceros unicornis Linnaeus, 1758

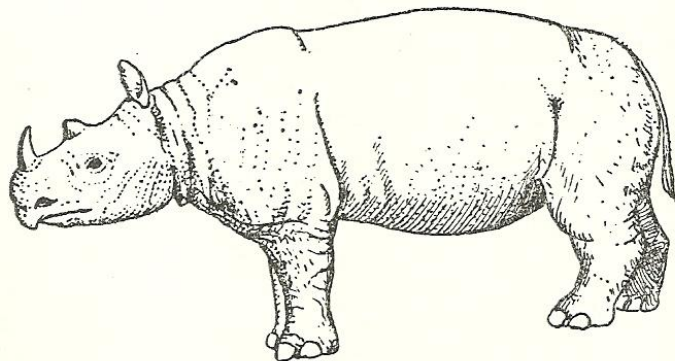
Vulnerable B1ab(iii)



Javan Rhinoceros

Rhinoceros sondaicus Desmarest, 1824

Critically Endangered C2a(i); D



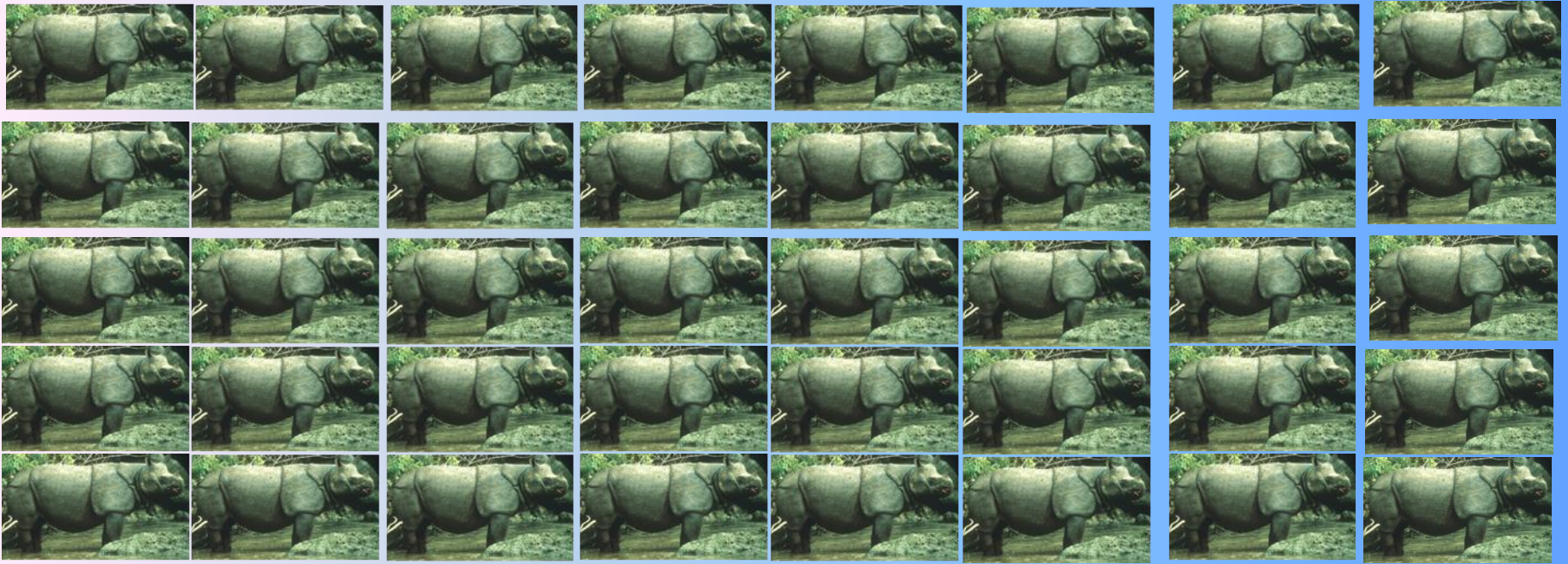
Sumatran Rhinoceros

Dicerorhinus sumatrensis (G.Fischer, 1814)

Critically Endangered A2abd; C1+2a(i)

<http://www.iucnredlist.org/>

All Javan Rhinos remaining today



40



41



42



43



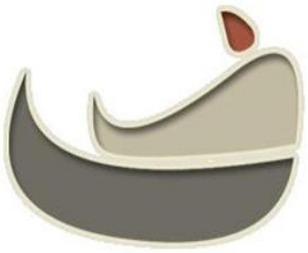
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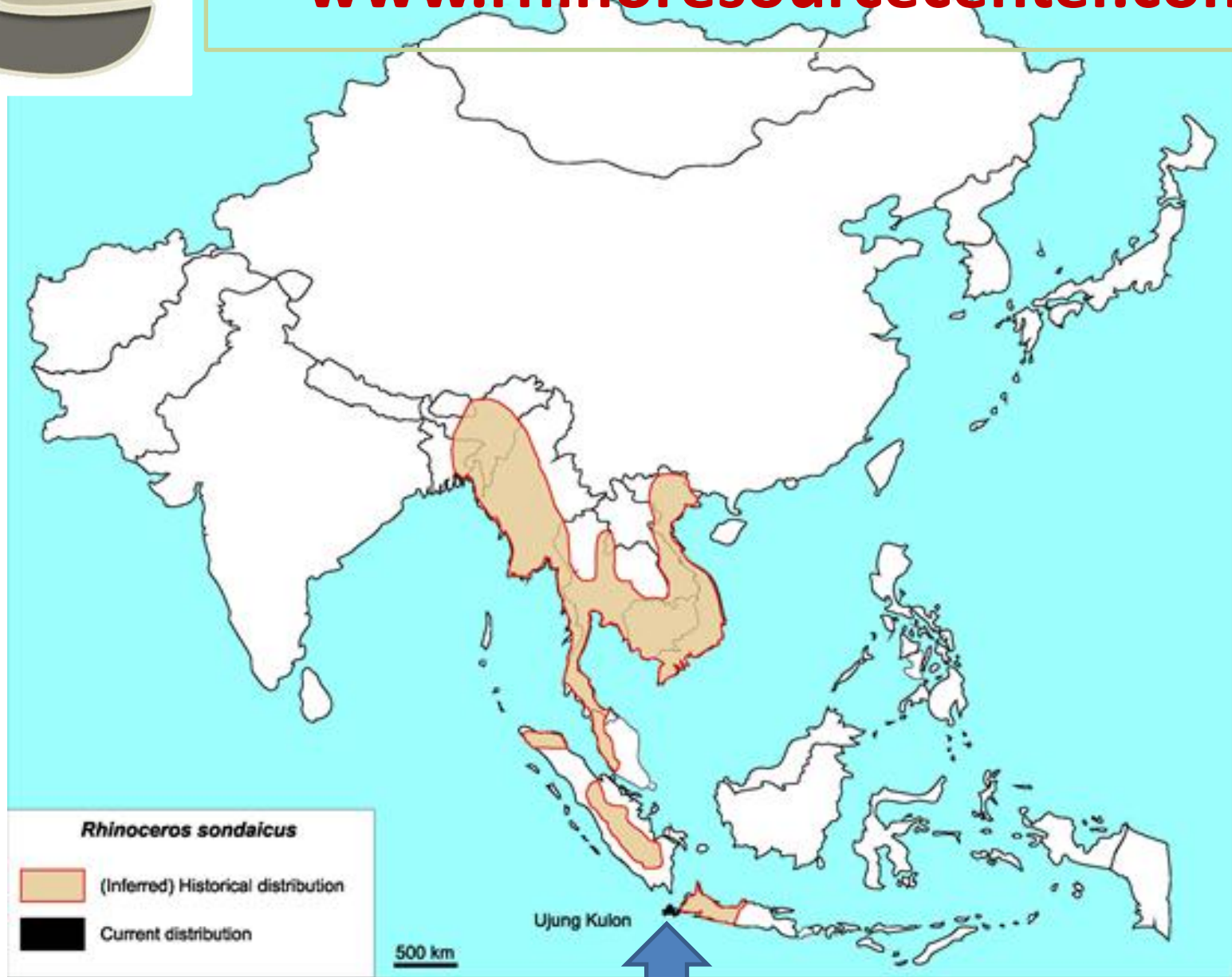
And all in one place ...

Adelaide Zoo, 12 April 1886 – 4 February 1907





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Nguyen Van Thanh, 2005, camera trap



David Brugière, 2011

Vietnamese Rhino in Cat Loc National Park

RHINOCEROS SONDAICUS.

The Javan or Lesser One-horned Rhinoceros and its Geographical Distribution.

By CHARLES W. LOCH.

Plates III—IV.

In January, 1932 when the Sungai Lampan Javan rhinoceros was shot, near Telok Anson, by Mr. A. S. Vernay for the British Museum, a great deal of newspaper correspondence took place in the Malayan press as to the relative scarcity of this great beast. Well-intentioned but ill-informed persons also took up the argument and criticised the authorities for allowing a specimen of this rare species to be collected.

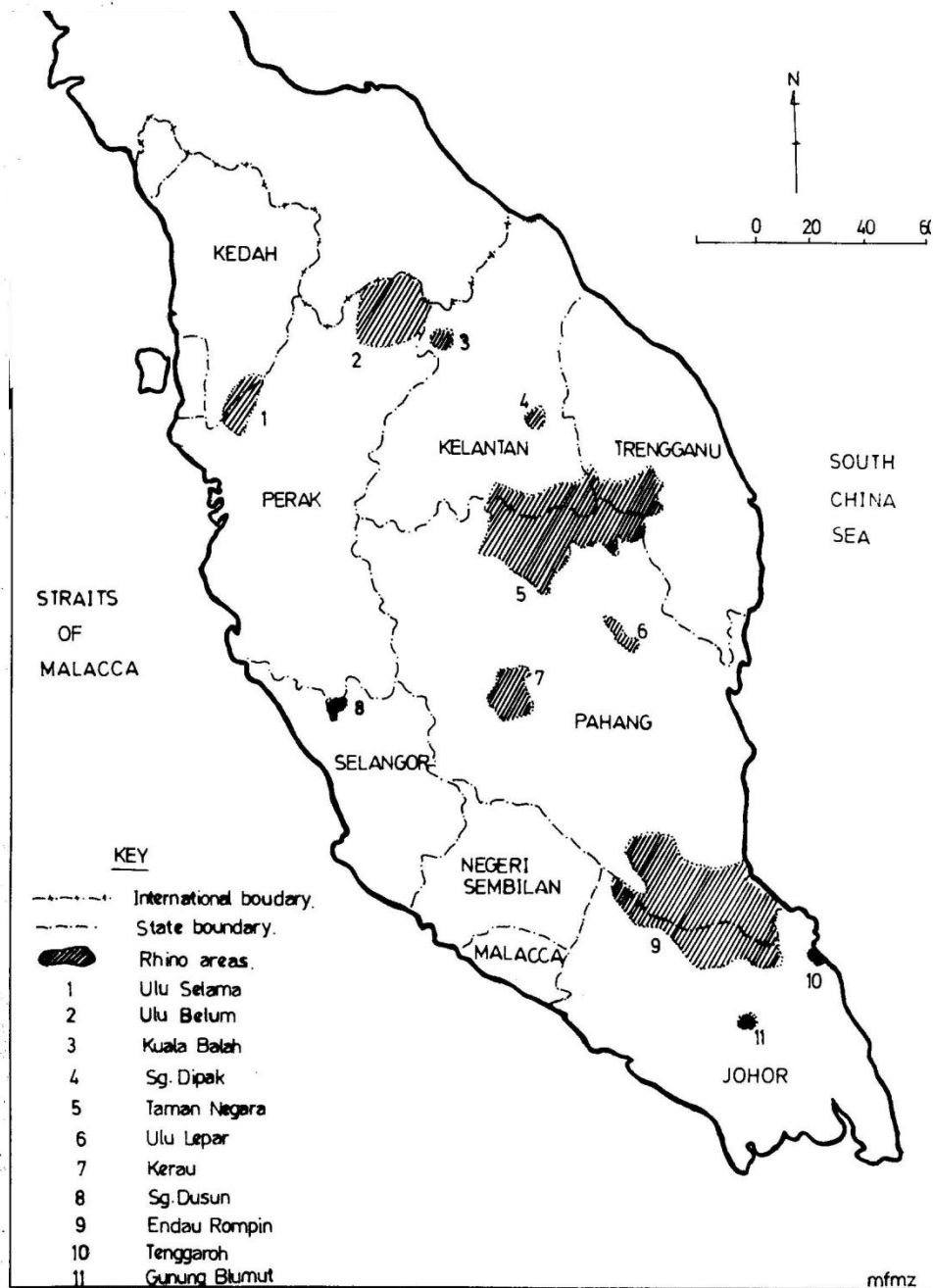
There is no doubt that *Rhinoceros sondaicus*, a few specimens of which still linger in Malaya, is one of the rarest of the great mammals in existence at the present time. So little is known about it that it will surely be of scientific interest to place on record all the information that can be found about it with as much accuracy as possible from the data available; and with special reference to the occurrence of *sondaicus* in Malaya.

The writer first became interested in the subject, when living at Changkat Pa'Badak on the Kinta River, not far from the town of Kampar, during the years 1929—33. Malays coming from Changkat Pingan a few miles down stream would speak of a "badak" of enormous size living in the jungle to the south of them, the tracks of which had been often seen. Finding that we were interested, they would draw upon their imagination, until we were told on one occasion of it making a nightly visit and eating the "pisangs" on the outskirts of the village. As this was rather hard to believe several trips down river were made to investigate, only to find as we had thought, that none of the Malays had actually seen it but had heard about it from Sakais whose kampongs were further again to the south. There were many of these people living some three or four miles from Changkat Pingan, out in the jungle; and they could all point to the locality, not far away, where the tracks of the "badak" were to be seen and where he was known to live. There was no doubt, from their description, that he was a very big beast. This animal eventually turned out to be the solitary rhino shot by Vernay in January, 1932.

Living Species of Rhinoceroses.

We will now enumerate the existing species of rhinoceros. In Africa are to be found the following:—

The White rhinoceros *R. simus*.
The Black rhinoceros *R. bicornis*.



Shariff, K.M. 1983. Status and distribution of Sumatran rhinoceros (*Dicerorhinus sumatrensis*) in peninsular Malaysia. *Journal of Wildlife and Parks (Malaysia)* 2: 91-102



The author with a Rhinoceros Soudrensi and a Python

Hazewinkel,
hunter in South Sumatra,
1931



a
Rhino-Hunt
in Sumatra

By

J. C. HAZEWINKEL

(All photographs by the Author)

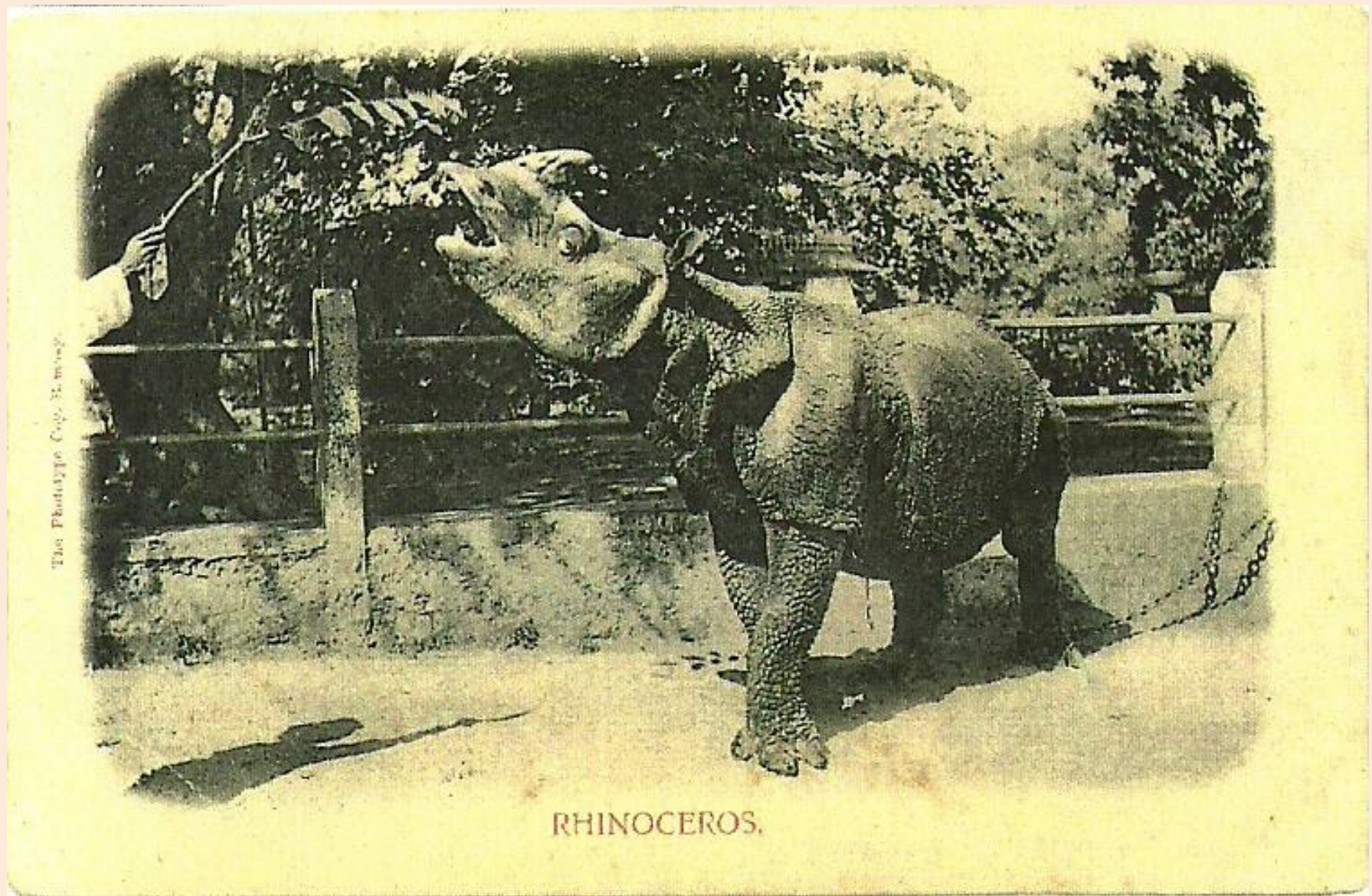
Andries Hoogerwerf (1905-1977) took this early photo in Ujung Kulon



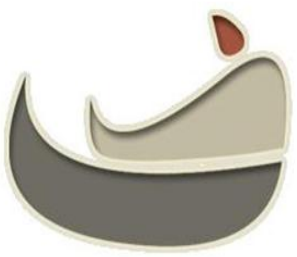
Pictures of Javan rhinos are almost as rare as the animals themselves.
This one is by Mary Plague, 2000



Find this and others photographs on the website of the [RHINO RESOURCE CENTER](#)



This is a mystery rhino – possibly taken in an Indian zoo, 1900-1920
Collection of John Edwards, London.



www.rhinosourcecenter.com

Torgamba and Bina,
Sumatran rhinos
in Way Kambas
National Park,
Sumatra



London Zoo, female shown 15 February 1872 to 31 August 1900,
with record longevity



W. L. SCLATER.



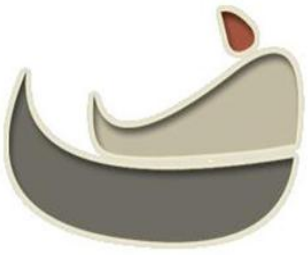
Vienna Zoo

♀ 'Jenny' – 28 October 1900 – 11 November 1910

♀ 'Mary" – 17 July 1902 – September 1920

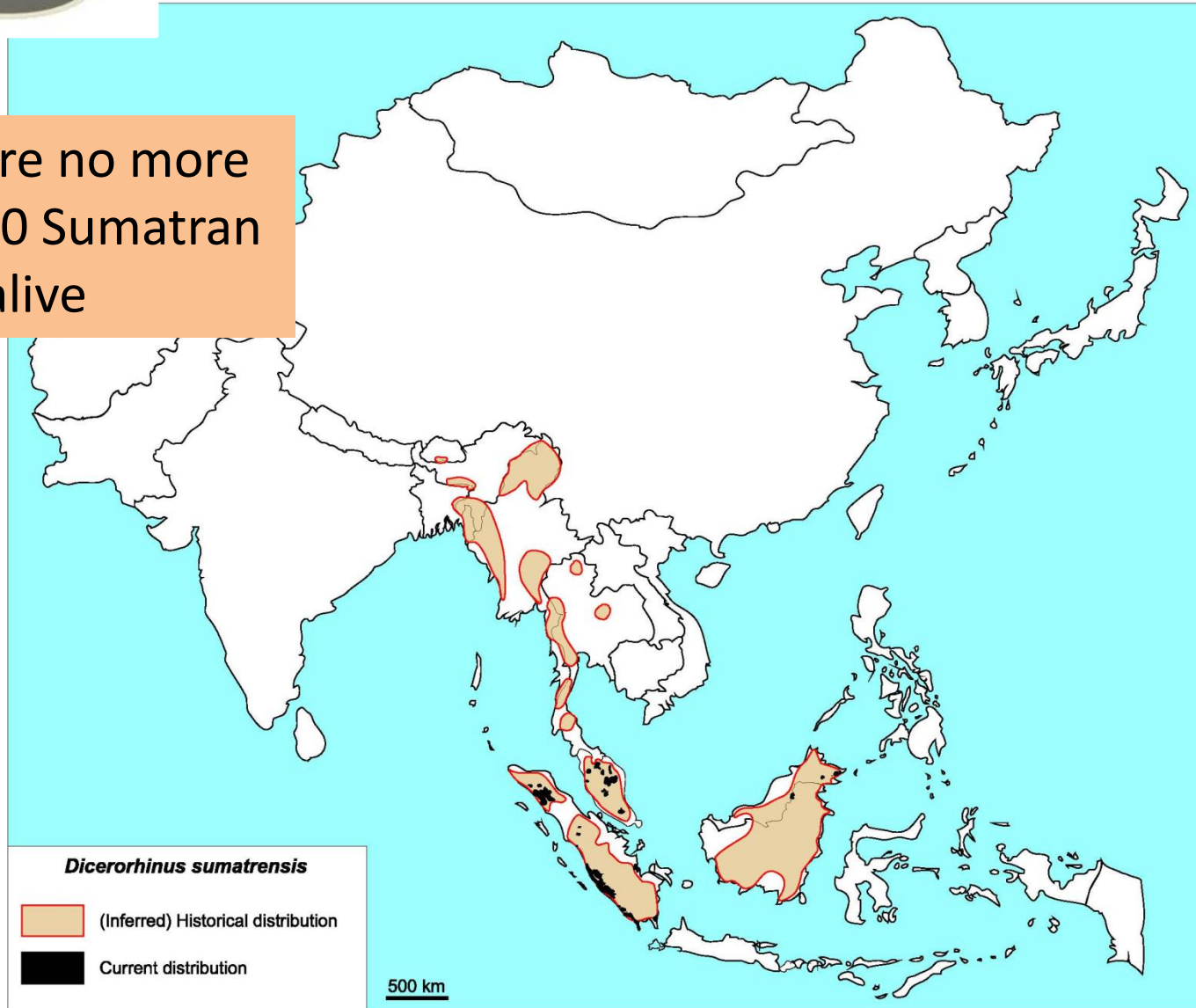
Imported via Botanic Gardens, Singapore





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There are no more than 200 Sumatran rhinos alive



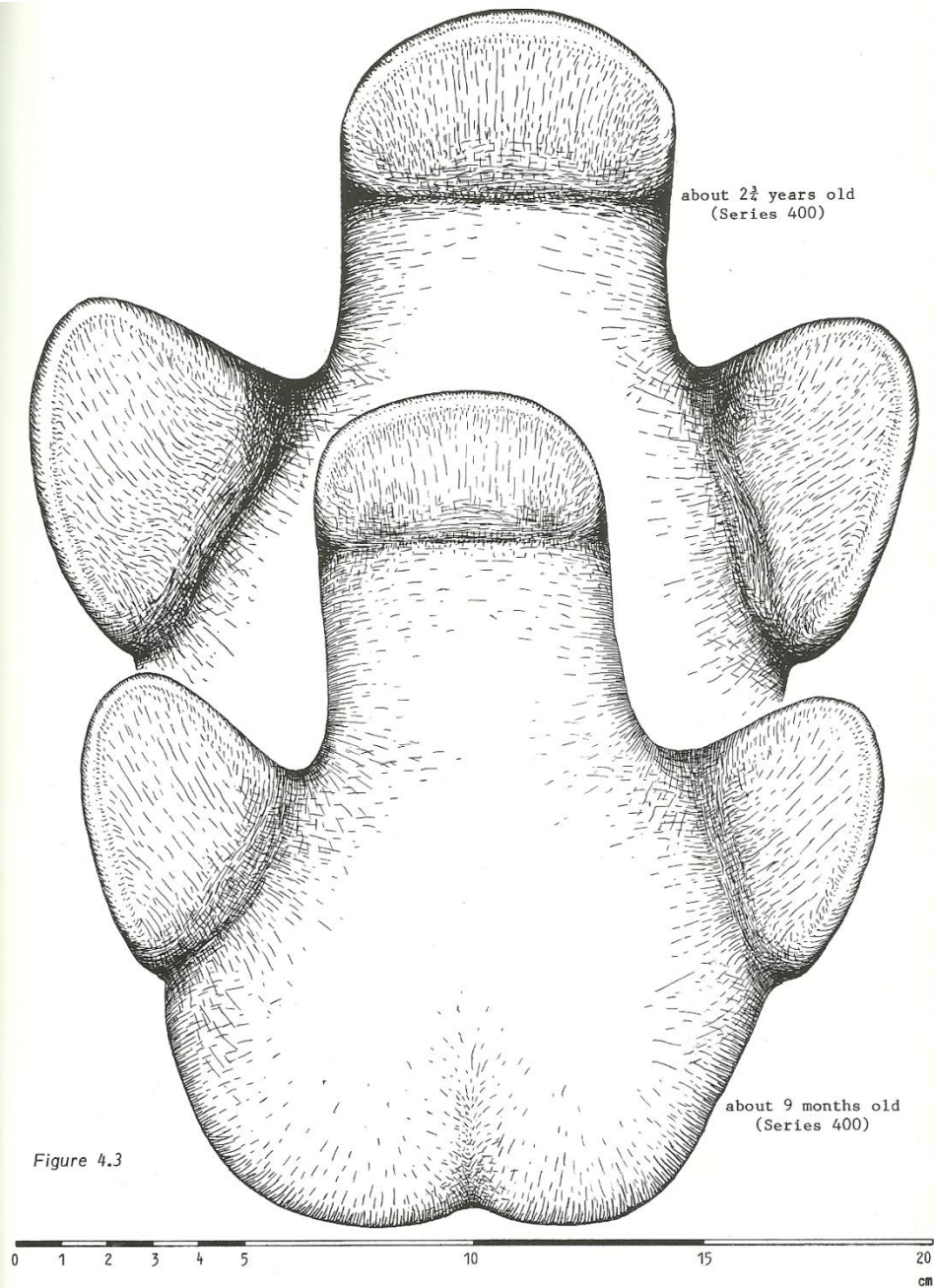
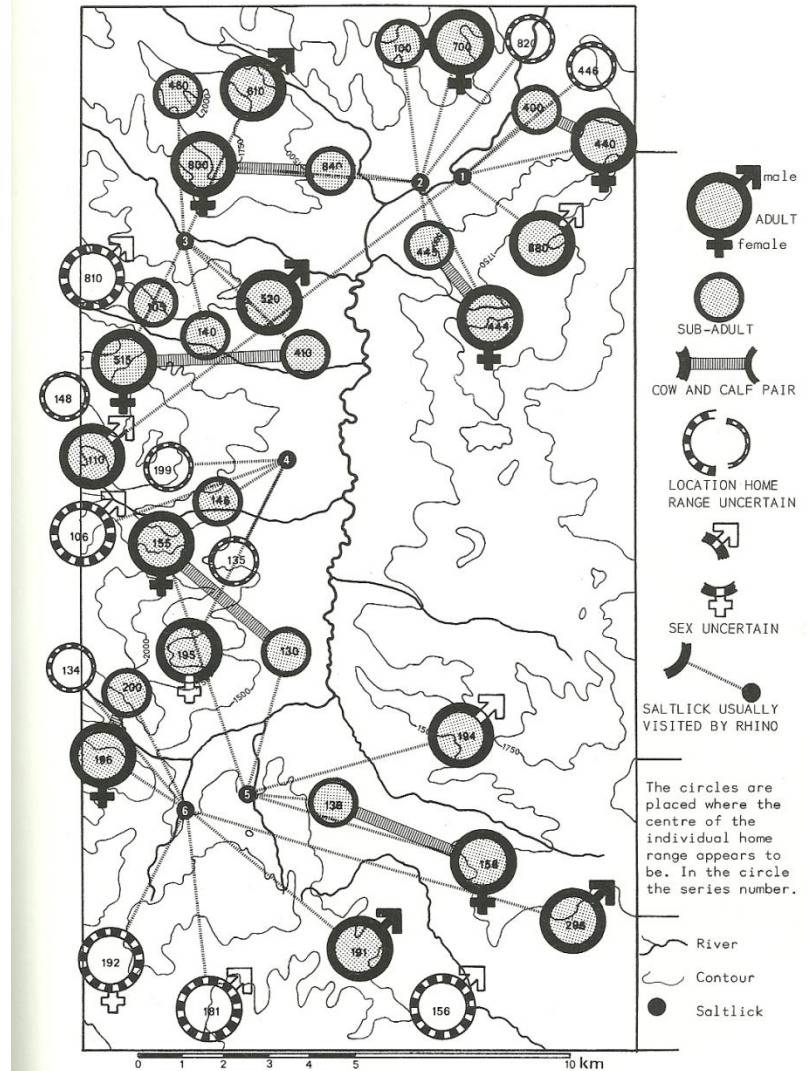


Figure 4.3



Strien, N.J. van, 1986. The Sumatran rhinoceros, *Dicerorhinus sumatrensis*, in the Gunung Leuser National Park, Sumatra, Indonesia: its distribution, ecology and conservation. Hamburg, Paul Parey (Mammalia Depicta, No. 12)

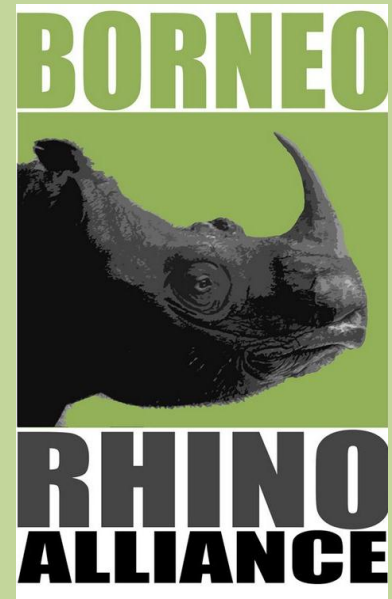


RPU
Rhino Protection Units
in Indonesia



Photos: Nico van Strien, 2007





♂ Tam



♀ Puntung



Photo: John Payne

Mother 'Ratu' with her baby 'Andatu' born on 25 June 2012



Way Kambas SRS



Andatu at one month, July 2012



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- Vrolik, W., 1854.** Het leven en het maaksel der dieren, volume 1. Amsterdam, M.H. Binger



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