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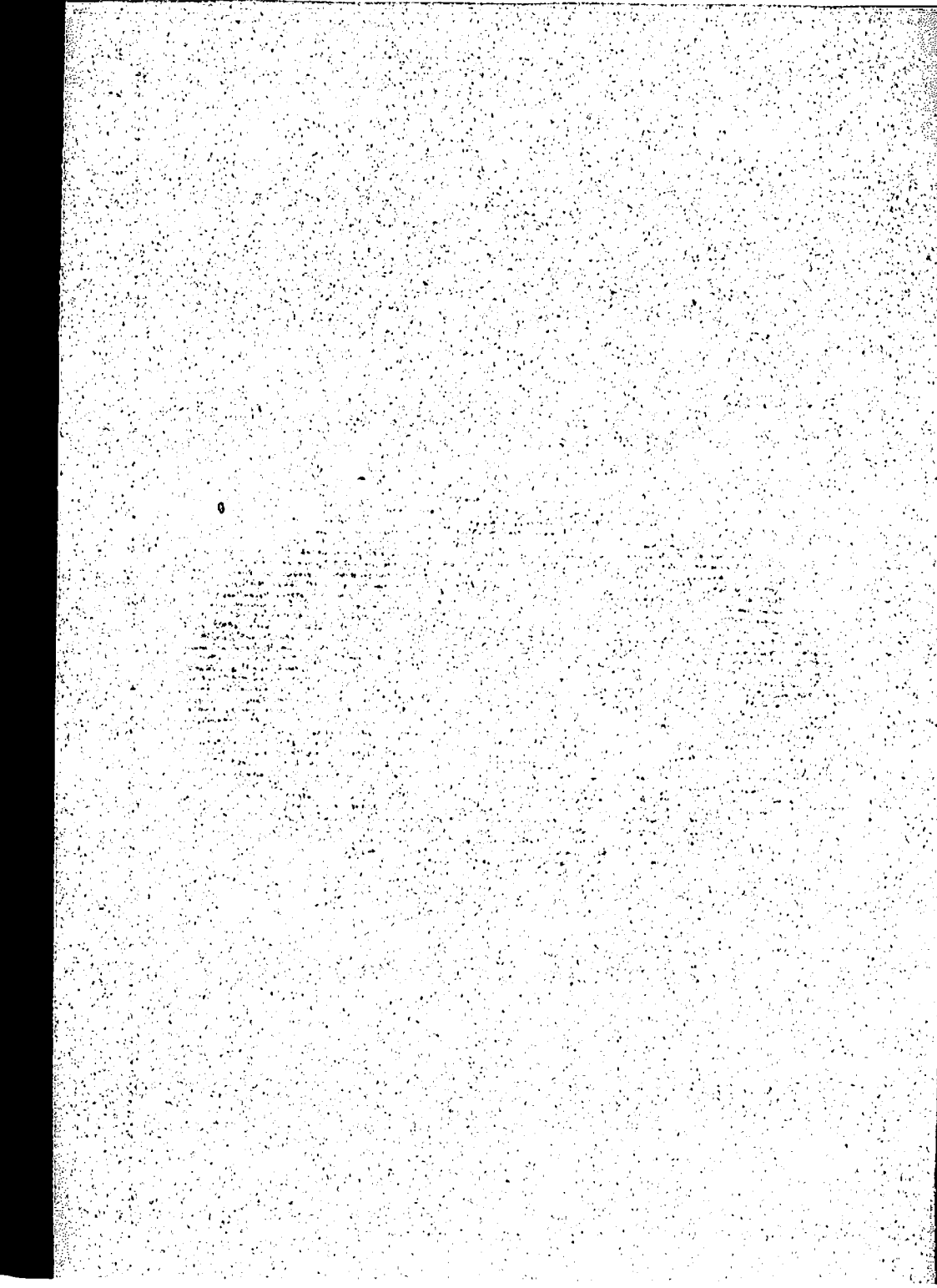
# JAVAN RHINOCEROS IN VIETNAM



*Rhinoceros sondaicus annamiticus*

GERT POLET & TRAN VAN MUI

HO CHI MINH CITY PUBLISHING HOUSE



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This booklet has been compiled by the WWF - Cat Tien National Park Conservation Project. It aims at informing the general public, and in particular policy and decision makers, on the status of Javan Rhinoceros in Vietnam. The production of this booklet has been made possible by a generous grant from the United States Government - Fish and Wildlife Service under its Rhinoceros and Tiger Conservation Fund.

## FOREWORD

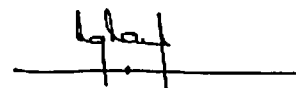
This is a book about the Javan or Lesser One-horned Rhinoceros in Vietnam. Adding to existent information on this species' history and present status, this brief publication presents various factors which are threatening the rhino's survival.

Vietnam is proud to be home to this especially rare large mammal. In an expression of this pride it is often called the Vietnamese Rhinoceros. But without proper care and protection, the extinction of this species in Vietnam is imminent – and such an event would constitute a serious loss for our country and for the world at large. This book presents a number of ideas and actions to be taken to protect this most endangered mammal; and it is hoped that people will be inspired to respond.

There are only a few Javan Rhinoceroses left in Vietnam, and we must act now to ensure its survival. It would be a tragedy indeed if we were to have to tell our grandchildren the story of how we could not save this precious and unique species. However, I believe we will succeed in protecting the rhinos of Vietnam.

On behalf of the Ministry of Agriculture and Rural Development, I would like to thank Cat Tien National Park and the scientists who have worked in difficult conditions to add to the general knowledge of this species. My gratitude is also expressed to authors, sponsors, and others who contributed to the publication of this book.

Yours sincerely,



Mr. Nguyen Van Dang

Vice Minister  
Ministry of Agriculture and Rural Development

Hanoi – Vietnam  
May 1999

## INTRODUCTION

The Javan Rhinoceros is perhaps the most threatened large mammal in the world. Only two populations are known to exist. In the Ujung Kulon National Park on Java – Indonesia there are about 50 to 60 animals. The second population is in Cat Tien National Park – Vietnam where only 5 to 10 animals remain.

This booklet provides a general overview of the past and present status of the Javan Rhinoceros in Vietnam. It also gives some information on the animal's ecology and discusses the threats to the continued existence of the species. It continues with an overview of what activities are required to keep the Javan Rhinoceros in Vietnam and what is currently being done to achieve that goal. It concludes with some remarks on what you can do to save the Javan Rhinoceros from extinction!

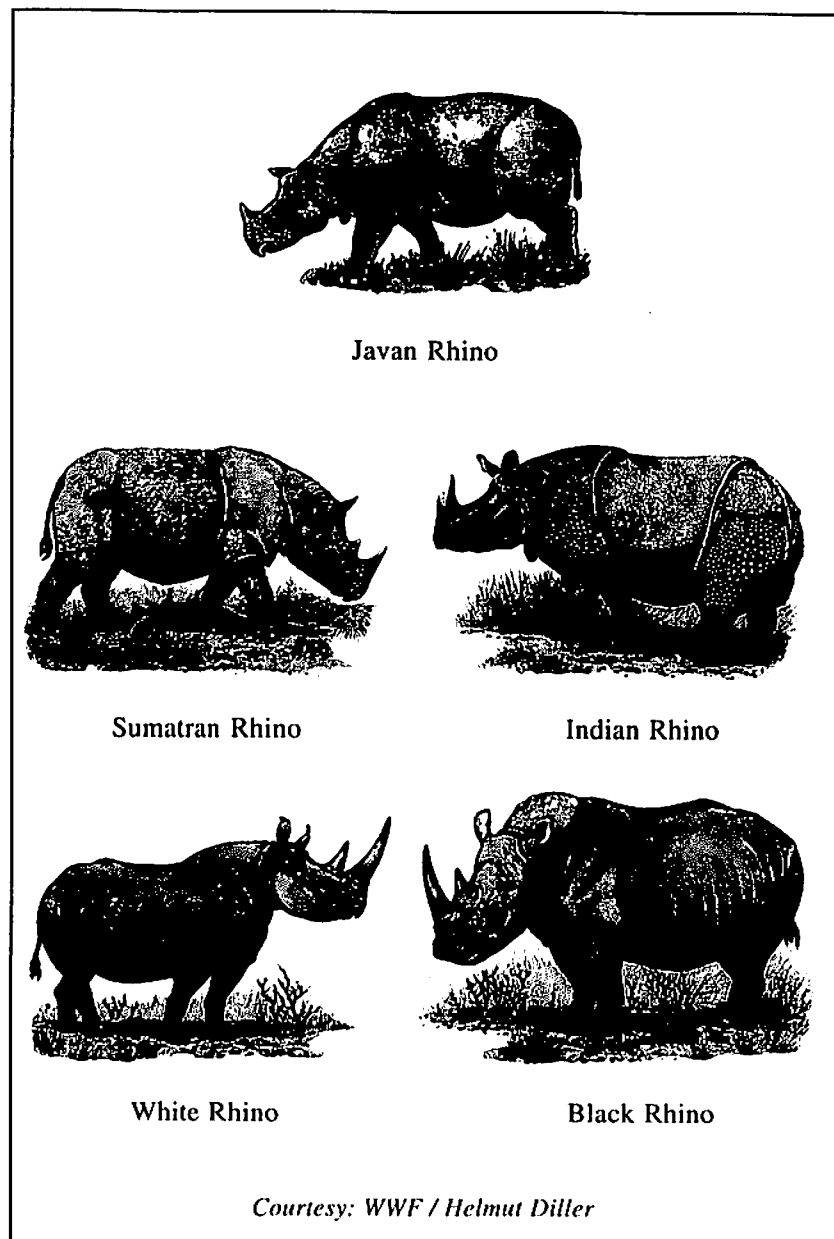
## THE WORLD'S RHINOS

In the world, there are five species of rhinoceros to be found; two in Africa and three in Asia. Europe, America and Australia do not have rhinos living in the wild (see Figure 1). During the ice age a woolly rhino inhabited Europe and Asia but this species became extinct.

1. Black Rhinoceros (*Diceros bicornis*)
2. White Rhinoceros (*Ceratotherium simum*)
3. Indian or Greater One-horned Asian Rhinoceros (*Rhinoceros unicornis*)
4. Sumatran or Asian Two-horned Rhinoceros (*Dicerorhinus sumatrensis*)
5. Javan Rhinoceros (*Rhinoceros sondaicus*)

All five species are threatened with extinction and are included in the IUCN Red List. Two species, the Javan and the Sumatran rhino are critically endangered.

Figure 1 : Rhinos of the World



The largest Asian rhinoceros is the Indian rhino. It is about as large as its African counterparts (the Black and the White rhino) and is the second largest living land mammal, after the African elephant. The Indian Rhinoceros lives in riverine grasslands in India and Nepal.

The smallest of all rhinos is the Sumatran. It is also known as the hairy rhinoceros and lives in dense mountainous forests on the islands of Sumatra, Kalimantan and peninsula Malaysia.

The rarest rhino is the Javan or Lesser One-horned Rhinoceros with only 50 to 70 animals surviving. Like the Sumatran rhino, the Javan rhino lives in dense forests. Javan Rhinoceros' are divided in two sub-species (Groves & Guerin, 1980): *Rhinoceros sondaicus sondaicus* in Ujung Kulon – Indonesia and the *Rhinoceros sondaicus annamiticus* in Cat Tien National Park – Vietnam. Some people call the sub-species of Cat Tien National Park the Vietnamese rhino. A third sub-species (*Rhinoceros sondaicus inermis*) inhabited the Sunderbans area in India and Bangladesh and Myanmar. This sub-specie became extinct in the late 19<sup>th</sup> century – early 20<sup>th</sup> century.

#### PAST DISTRIBUTION OF JAVAN RHINOCEROS

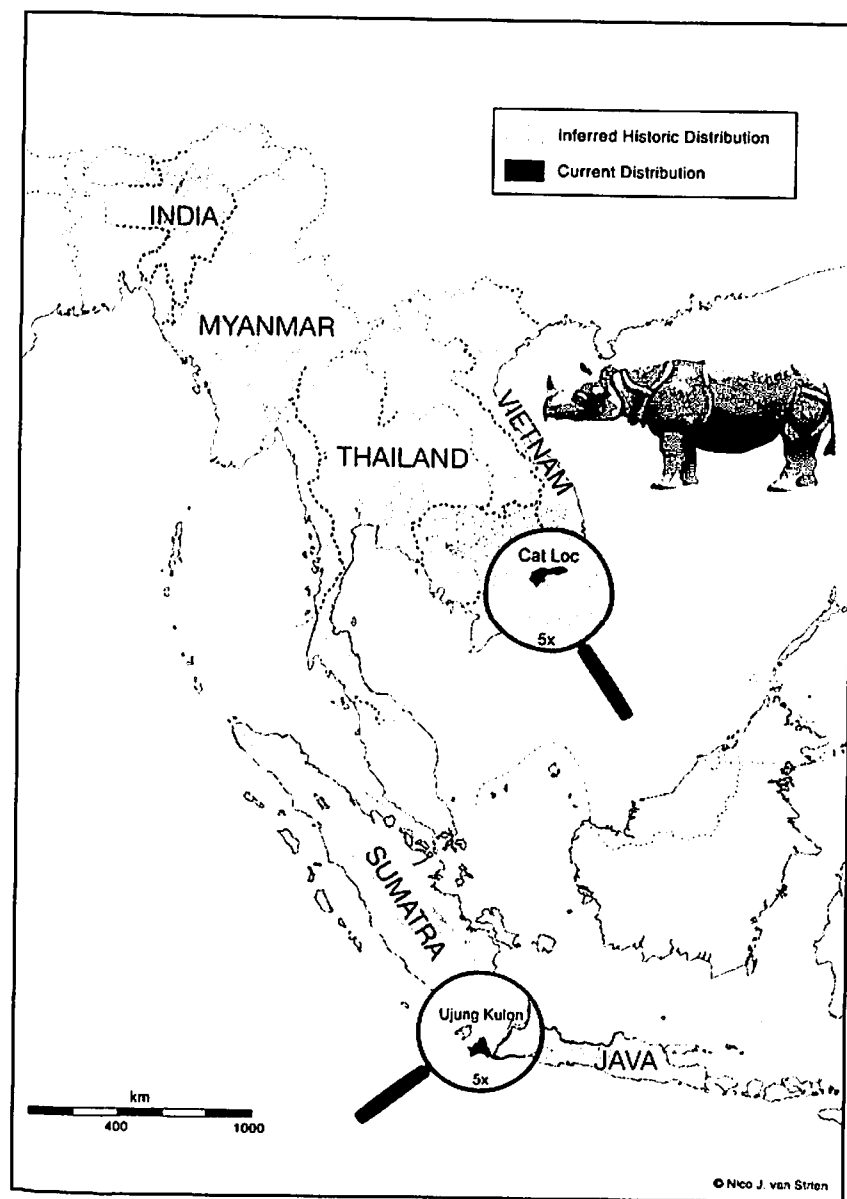
In the past, Javan rhinos were spread over a large area in South East Asia. They were to be found in India, Bhutan, Bangladesh, China, Myanmar, Thailand, Laos, Cambodia, Vietnam, Malaysia and Indonesia (Sumatra and Java).

Reports of local people and explorers indicate that the animals were quite numerous during the late 19<sup>th</sup> and early 20<sup>th</sup> century.

The *R.s. annamiticus* sub-specie was found in Vietnam, Laos, Cambodia and the eastern parts of Thailand. The *R.s. sondaicus* sub-specie was found on the islands of Sumatra and Java and the Kra Isthmus and peninsula Malaysia.

Map 1 shows the historic and present distribution of Javan rhinos in the world.

Map 1: Past and Present Distribution of Javan Rhinos



Courtesy IUCN/SSC Asian Rhino Specialist Group, 1997

## PAST AND PRESENT STATUS OF JAVAN RHINOCEROS IN VIETNAM

Old Vietnamese and French reports indicate that both the Sumatran and the Javan Rhinoceros were once common in Vietnam. Apparently the Sumatran rhino became extinct in Vietnam early in the 20<sup>th</sup> century.

Early in the 20<sup>th</sup> century, the Javan rhino was to be found in the northwestern and southwestern parts of Vietnam.

In the 1960's it was feared that also the Javan Rhinoceros became extinct in Vietnam and thus on mainland Asia. In 1969 Van Peenen wrote: "*at present there probably are no living members... in South Vietnam, although as recently as the 1920's rhinoceroses were hunted not far from Saigon*" (in Schaller *et al.*, 1990).

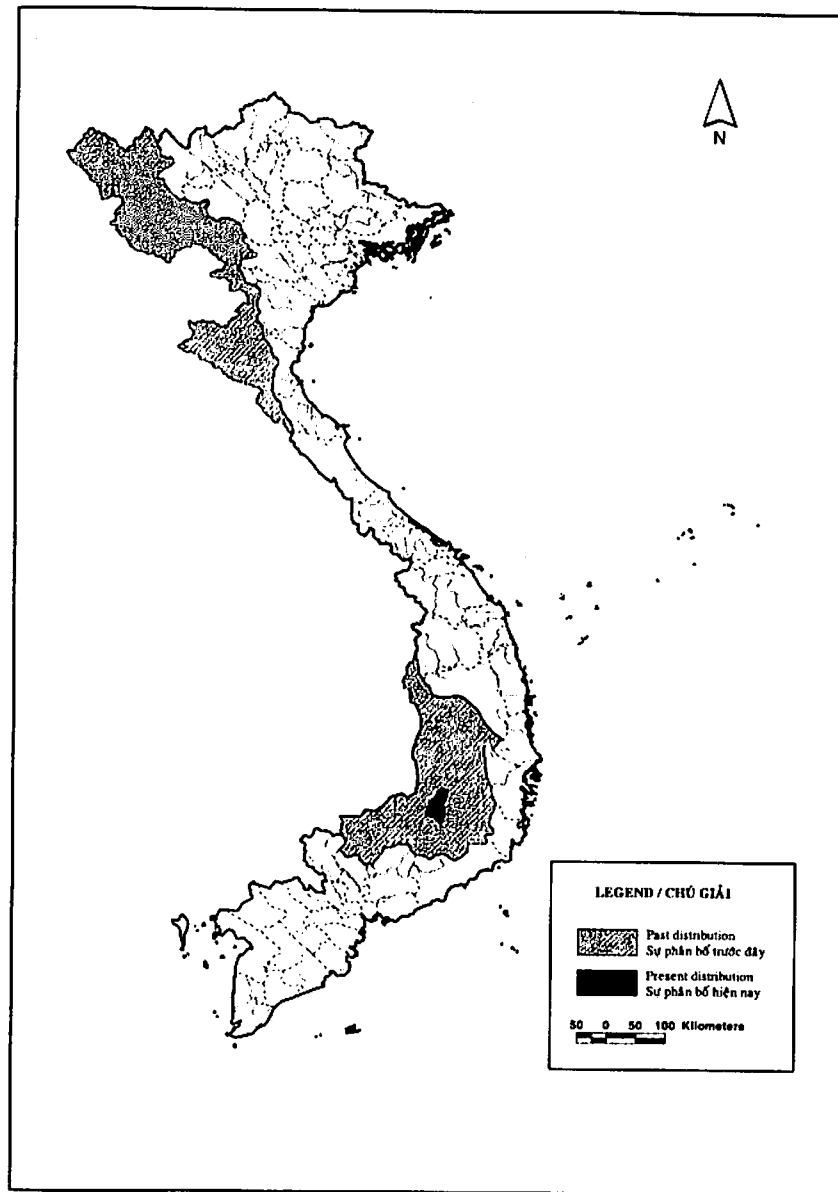
Map 2 shows the historical and present distribution of Javan Rhinos in Vietnam.

But in 1988 a hunter shot a female rhino near the Dong Nai River in Cat Tien District. He was arrested after he tried to sell the horn and skin on the market. This incident renewed the attention of the Vietnamese and international conservation community for the rhinos of Vietnam.

A number of publications in the early 1990's (Schaller *et al.*, 1990, Santiapillai *et al.*, 1993 and Dang, 1994) report on different field investigations on the plight of the Javan Rhinoceros in Vietnam. From these investigations it became clear that local people had seen rhinos on different occasions and in different places in Southern Vietnam over the past decades. But the last observation of rhino in Northern Vietnam was from 1964 and the species is considered extinct in that part of the country.

Maybe the rhino population has suffered from the American war. Defoliants destroyed large parts of its habitat and mines must have caused damage to the rhino population. After the war a lot of high powered arms remained in circulation and it would not be surprising if it was found out that rhinos have been killed by hunters in the years after the war.

Map 2: Past and Present Distribution of Javan Rhino in Vietnam

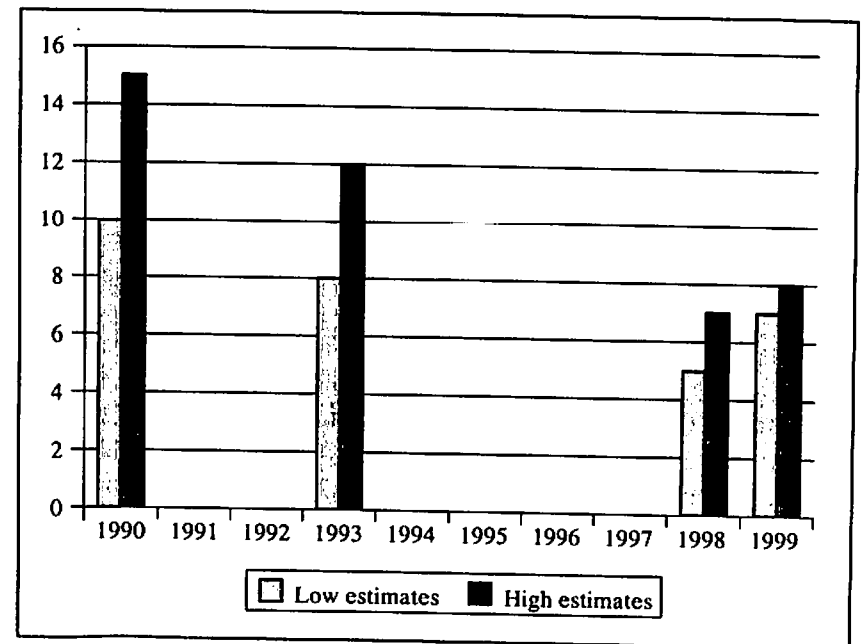


Modified after Santiapillai *et al.*, 1993

Schaller *et al.* (1990) report sightings by local people and different signs of rhinos in the Song Be, Lam Dong and Dong Nai Provinces. Santiapillai *et al.* (1993) report tracks to occur only in Lam Dong Province and an animal which crossed the river into Song Be Province. It seems that since that time only one small group of rhino is surviving in Lam Dong Province.

As can be seen from Figure 2, the number of rhinos in Vietnam has been falling steadily over recent years. It is estimated that there are only 5 to 10 animals remaining in Vietnam.

Figure 2: Population Estimates of the Cat Tien Rhinos



## RHINO ECOLOGY

Javan rhinos measure about 130 – 150 cm in height and can weigh up to 1,500 kg. The *R.s. annamiticus* sub-specie in Vietnam is considerably smaller than its Ujung Kulon counterparts in Indonesia.

It is generally said that only the males carry a clear horn, the females only have a small hump or no horn at all. The horn is actually a dense formation of hair; it does not constitute of bone. Rhino horn is highly valued as a traditional medicine. However, it is important to know that its effects have never been scientifically proven.

An international convention (the Convention on International Trade in Endangered Species of Wild Fauna and Flora – CITES) is regulating the trade in life wild animals and wild animal parts. Many countries, also Vietnam signed the treaty. All species of rhino have been put in Appendix I of the CITES treaty, which means that the trading of them is absolutely forbidden. In Vietnam, rhino has also been put in the IB list of 18 / Council of Ministers which is the list of trading-and-utilising-forbidden species in Vietnam.

The Javan rhino is basically a solitary animal. If more than one rhino is seen together, it most of the time concerns a female with its young. The gestation period of these rhinos is about 16 months. A young stays with its mother for about three to four years. Javan rhinos become sexually mature after four to six years.

The Javan rhino is quite adaptable to its environment. They live in semi-evergreen forests and like to search for food in more open areas. In Vietnam the rhinos are pushed into a very un-hospitable area of steep hills covered with in-accessible bamboo and rattan thickets. Although they are surviving in this area, the food availability is not optimal. It is known that Javan rhinos do not like to eat bamboo or rattan, but rather young shoots of trees and herbs.

To supplement their diets rhinos need to consume salt regularly. In Ujung Kulon the rhinos drink therefore seawater. In Vietnam the rhinos are known to frequent a number of saltlicks; springs with mineral rich water. The saltlicks are of crucial importance for a rhino to survive. If the rhino can not get its minerals from the saltlick, their health will be heavily affected and they could die. Saltlicks are also places where these solitary animals meet each other regularly.

Because rhinos are very plump, it is difficult for them to keep their body temperature low enough. Therefore rhinos stay out of the sun and like to bathe a lot in so called wallows. The dried-out mud on their skin helps to protect them against dangerous radiation from the sun and also against all kinds of parasites. Wallowing is therefore very important for rhinos. Wallow sites are also often the place where different rhinos meet each other. Without wallow sites rhinos will probably find it difficult to find a partner for mating.

The footprints of the rhinos in Ujung Kulon and Vietnam are different in size. The ones in Vietnam are much smaller. Scientists estimate that the Vietnamese rhino is about 60 to 70% of the size of its Indonesian relative. Although they are of the same species, scientists believe the populations are so different that they can not crossbreed.

Important is to note that in fact very little is known about Javan rhinos, especially the ones in Vietnam. Further research is essential but quite difficult because these animals are so shy.

## THREATS

It has already been pointed out that the range of the rhinos in Vietnam has been greatly reduced over the past years. Also their numbers have been declining and they are at risk of dying-out.

In order to protect the rhinos, the Vietnam Government established the Cat Loc Rhinoceros Reserve. This protected area is about 35,000 ha large. In 1998 this protected area was administratively integrated with the Cat Tien National Park. In total the protected area is now about 75,000 ha, divided over two areas of about similar size.

Although this is a sizeable area, it is quite small for large animals like rhinos, elephants or tigers. These animals need large areas to be able to find enough food. Also, having a protected area with only a few animals of a certain species is not a healthy situation because it can lead to in-breeding. In-breeding can result in all kinds of defects and even to

the extinction of the species. A protected area should therefore be large enough to maintain a sizeable population. Many scientists put the lower limit of a healthy population at 50 individuals. One rhino needs about 600 to 1,000 ha to survive; a tiger about 1,000 ha. One can now estimate how many animals could stay in the Cat Tien National Park.

But, between the two sections of the Park lies an area, which is becoming more and more occupied with farms. Nowadays it is not possible anymore for the rhinos to travel between the two protected areas. In fact, over the last years no single report of rhinos in Binh Phuoc (before part of Song Be) or Dong Nai have been obtained. They only still exist in Lam Dong Province. So, effectively, Cat Tien National Park is split into two smaller areas of about 35,000 ha. Lacking a natural corridor between two parts is not a good situation for the rhinos and other animals.

The last report of a hunted rhino was the one of 1988. After that it seems that the hunting of rhino in Vietnam has been stopped. But still, the whole population could be easily wiped out by hunters. What if one person would kill the only surviving female or adult male? It is fortunate that the forest guards of Cat Tien National Park are very dedicated to their work and are actively patrolling the protected area.

A lot of people are living within the protected area. Some of these people have lived there for many generations. Others are recent settlers. The continued in-migration of settlers into the protected area is of great concern. New agricultural land is opened up all the time, converting the last bits of forest into cashew and mulberry plantations. Human populations are known to be able to grow fast and it is certain that this un-checked situation will destroy the protected area for good. The large number of people cause already disturbance by their mere presence; making noise with radios and grass cutters, and polluting the area with plastic and other garbage, hunting and collecting resources in the forest. Of special concern is that the areas surrounding the saltlicks are progressively turned into agricultural land. It is becoming more and more difficult for the rhinos to get to these important places.

Settlements along the Dong Nai River physically prevent the rhinos to range into adjacent areas on the other side of the river. They have to remain now in a small area. This can be dangerous for the continued existence of the animals. It only needs one human-made or natural disaster, like a big fire, to wipe out the whole population. The encroachment into the protected area makes it impossible for the rhinos, and other animals, to escape to other areas when such a disaster comes. Also, in the event of a particularly dry year, the rhinos can have no access to last remaining water bodies for drinking because everywhere there are people living along the Dong Nai River.

It is important to realise here that bringing-in rhinos from Ujung Kulon to re-stock the rhino population in Vietnam will be very difficult. It will not only be very expensive, but also probably impossible to crossbreed the two sub-species because they are so different in their physical characteristics. Therefore, if the Cat Tien rhinos go extinct, the whole sub-species goes extinct and it will be very unlikely that Vietnam will ever have wild rhinos again.

A more indirect threat is the apparent uncoordinated nature of developments within the protected area. On the one hand the protected area is under the management of the Ministry of Agriculture and Rural Development in Hanoi with major objective to conserve the area's natural ecosystem. On the other hand, other ministries and other governmental levels (such as Districts and Provinces) make plans (and implement those) which do not pay attention to the areas principal function: conservation of the ecosystem. One department is hooking-up houses within the protected area to the national electricity and telephone grid, another department plans to upgrade a road, a third district agrees with an offer of a foreign donor to built bridges within the protected area and a fourth department encourages the clearing of forest by stimulating agricultural production. All these developments make it more attractive for people to live in this protected area. It is important to work towards raising the standard of living of people. But not within protected areas, which were agreed to be set-aside as examples of Vietnam's natural ecosystem for our future generations.



### Threats to the Survival of Rhinoceros in Vietnam:

1. Poaching.
2. Agricultural encroachment.
3. Habitat fragmentation.
4. Disturbance.
5. Loss of access to saltlicks and secure water sources.
6. Small protected area.
7. Fragmented protected area.
8. Genetic in-breeding.
9. Lack of co-ordination of development activities.

### WHAT SHOULD BE DONE

The rhinos of Vietnam should be vigorously protected. Activities such as hunting, land clearing and tree felling are unacceptable within the Park. Further in-migration of people into the Park should stop.

Forest guards of the Cat Tien National Park should increase their patrolling activities in order to control and stop such illegal activities. At the same time the forest guards ought to educate the local people about the importance to maintain these last natural forests which are valuable for Vietnam and for the rest of the world.

A wider information campaign is required. Such a campaign should be backed by the government while foreign non-governmental organisations could assist.

In general, all governmental levels should back-up the efforts of Cat Tien National Park. Police and juridicial forces should support the Park when it comes to arrest and court cases against violators of the law. Education departments could play an important role in conservation education. A respectful remuneration of the forest guard's services should also belong to the Government's considerations.

Development activities need to be co-ordinated. As the primary objective of protected areas in Vietnam is conservation of the natural ecosystem, development activities should be carried out very selectively and should not harm the ecosystem.

The Park authorities should also have a say in decision making about development activities inside the buffer zones of the Park. Regular co-ordinating meetings between all parties concerned should therefore be held and institutionalised.

One of the first things such a meeting should consider is a policy on existing human settlements within the Park. Ought people to be re-settled or will people be allowed to remain within the Park? Special consideration should be given to the indigenous communities in the area. If re-settlement is decided upon, this should be a participatory and respectful process which pays attention to the desires and needs of the people involved. Foreign agencies could assist the Government in such a scheme by providing alternative sources of livelihood in the receiving areas.

The Cat Tien National Park is aware of the difficulties local communities face. Living conditions in the area are poor. The Park would like to assist these communities in finding a better way of life. To achieve this, a frank and open discussion is needed.

One of the topics to be discussed is family planning. Families in these rural areas are quite large. In the future all children have to go to school and find a way to make a living. It is clear that opening-up more farmland does not belong to the viable solutions. People should understand that large families are just an expensive affair; expensive for the parents but also for the country at large. Therefore the Vietnam Government's campaign on family planning should be intensified, explaining its benefits and the different methods available. Contraceptives should be made available even in the remotest rural areas. Only small healthy families have a reasonable future.

Also required is to gain a better understanding of the rhinos in Vietnam. Sex and age structure of the population have to be established because

this information has important implications for the management of the Park. Also the feeding ecology of the rhinos needs to be better understood so that natural regeneration of the area's ecosystem can be accelerated by planting trees which rhinos like to eat. In this respect, one of the priorities is to ensure that the rhino saltlicks remain under natural vegetation. Present agricultural activities in the vicinity of saltlicks should be reverted.

Regular monitoring of the variation of rhino population is required to see whether the population is stable, increasing or decreasing and in order to apply necessary measures when needed.

And lastly, authorities should think about the possibility to join the two parts of the Park together in the future. A corridor between the two parts, so animals can move over a larger area, is very important. Only if this is done, sizeable and stable populations of wildlife can exist in Cat Tien National Park.

#### WHAT IS BEING DONE

After the Cat Tien National Park was integrated in December 1998, a number of activities have been stepped-up. The Cat Tien National Park deployed more forest guards in the area where the rhinos live. These guards do their best to control illegal activities in the area and discuss conservation issues with the local people. Means of transport have been purchased and new guard stations are being built.

The Park also started a dialogue with local communities to assess the possibilities for a voluntary re-settlement. Special attention is being given to the saltlick area. With different Governmental organisations a dialogue is being maintained on all kinds of issues related to the National Park. One of those is a policy on re-settlement.

In January 1999 a survey was held to estimate the number of rhinos in the area. These surveys will be held regularly. In April 1999 a number of automatic cameras have been put in the rhino area. In May 1999 the

first-ever pictures of the Vietnamese rhino have been taken (Figure 3). This encouraging result will be the base to gradually understand better the sex and age structure of the population.

The Cat Tien National Park is being assisted in these activities by a project funded by The Netherlands Government through the Indochina Programme of the World Wide Fund for Nature.

This project has also considerable resources to assist local communities to develop a sustainable economy, which is based on the principles of conservation of natural resources and encourages local people to joining activities to protect the forest and its rhinos.

Figure 3: One of the Cat Tien National Park's rhinos in a wallow



*Courtesy: WWF-Canon / Mike Baltzer*

#### WHAT CAN YOU DO?

If you are policy or decision-maker you should support the National Park in your area of jurisdiction and speciality. Active participation in co-ordinating meetings is required from all governmental agencies.

If you are a member of a local community within the Park you should not open-up more agricultural land, especially not around rhino saltlicks and wallows. You should refrain from hunting, burning or other activities harmful to the natural ecosystem. Above that, you should inform the forest guard or police in your neighbourhood if you discover traps or snares or if you see people preparing for hunting, especially strangers who are not from the area. You should have a dialogue directly with the Park about your fears, requirements and desires, including moving to an area outside the Park. Only through an open dialogue solutions can be found which are acceptable for all.

Trading in rhino parts is absolutely forbidden. Everybody should inform the authorities if one discovers such trade going on in his or hers neighbourhood. In fact, any trade in live or dead wild animals deserves no respect. Wild animals belong in the wild, not in a cage or on somebody's cupboard.

Everybody can have a positive attitude towards nature conservation. You can teach your children to respect nature. Also, everybody should be aware of the importance of family planning so that population growth will be reduced. By visiting the National Park, you give meaning to the Park's existence.

The rhinos need everybody's help in order to survive!!

## FURTHER READING

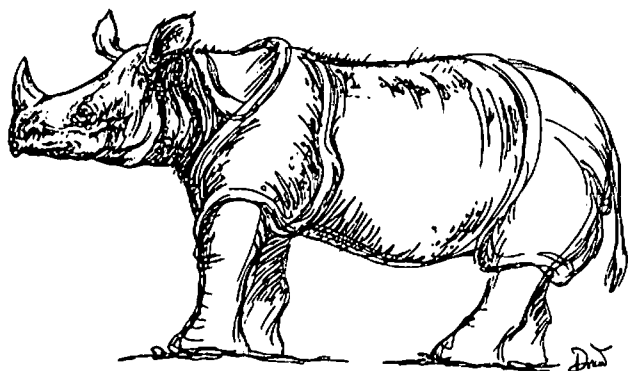
Much of the information presented here was abstracted from:

Asian Rhinos, status survey and conservation action plan (IUCN/SSC Asian Rhino Specialist Group, 1997)

Javan rhinoceros in Vietnam (George B. Schaller, Nguyen Xuan Dang, Le Dinh Thuy and Vo Thanh Son. in Oryx Vol 24, No. 2, April 1990)

Conservation and Management of Javan Rhino (*Rhinoceros sondaicus annamiticus*) in Vietnam (Charles Santiapillai, Pham Mong Giau and Vu Van Dung in Tiger Paper, Vol. XX, No. 4, Oct.-Dec. 1993)

The Javan Rhinos, *Rhinoceros sondaicus annamiticus*, of Cat Tien National Park - Vietnam: current status and management implications (Gert Polet, Tran Van Mui, Nguyen Xuan Dang, Bui Huu Manh, Mike Baltzer in Pachyderm Number 28, 1999)



*Courtesy: WWF / Nguyen Tien Dzung*

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**JAVAN RHINOCEROS IN VIETNAM**  
**RHINOCEROS SONDAICUS ANNAMITICUS**

*Chịu trách nhiệm xuất bản : Trần Đình Việt*

*Biên tập : Hoàng Mai*

*Sửa bản in : Hoàng Tân*



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