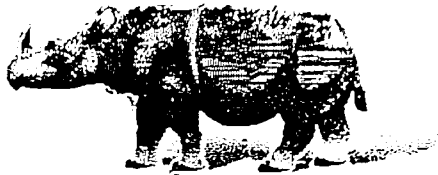


**PROGRESS REPORT**  
**SUMATRAN RHINO SANCTUARY (SRS)**  
**WAY KAMBAS NATIONAL PARK**



**International Rhino Foundation (IRF)**

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## INTRODUCTION

The Sumatran rhinoceros (*Dicerorhinus sumatrensis*), is now considered the most endangered of the five rhino species, all of which, except the Southern white rhinoceros, are on the verge of extinction. Fewer than 500 Sumatran rhinos survive in very small and highly fragmented populations in Southeast Asia with Indonesia and Malaysia being the only significant range states. The numbers of Sumatran rhino have been reduced 50% over the last 10 years and there is no indication that the situation is stabilizing.

Numbers of the Javan rhinoceros (*Rhinoceros sondaicus*) are lower (fewer than 100) but their population has been reasonably stable and their habitat is currently well protected. The African black rhino (*Diceros bicornis*) has declined more rapidly than the Sumatran over the last decade but there are four to five times as many black rhinos (~ 2,500) and, due in part to IRF involvement, their population numbers have been stable in the four major range states over the last 2 years. As a consequence, the Asian Rhino Specialist Group (AsRSG) of the Species Survival Commission of the IUCN - The World Conservation Union and rhino specialists the world over consider that the Sumatran rhino is indeed the most endangered species in the rhino family.

In response to the dire status of this species, an *ex situ* captive propagation program was initiated in 1984 as a critical component of the conservation strategy for this species under auspices of the Species Survival Commission (SSC) of the IUCN. The recommendation for *ex situ* programs derived from the extreme difficulties of trying to protect this species in the wild and the fact that an estimated 25% of the rhino were located in areas where they could never be protected or be part of a population large enough to be viable.

Successful propagation programs for three other species of rhinos (Black, White, and especially Indian) that have been maintained in captivity in modern times provided encouragement that this *ex situ* program would be successful. The first rhino known to be born in captivity was a Sumatran at the Calcutta Zoo in 1889.

Three separate captive programs were initiated in the major and geographically disjunct regions where appreciable populations of Sumatran rhino still survive: Indonesia, Peninsular Malaysia, and Sabah (on the island of Borneo). It was decided that only so-called "doomed" rhino would be rescued for captivity. The Indonesian program was the most international of the programs with rhinos rescued being placed in captive facilities in Indonesia, the United Kingdom, and the United States. "Doomed" rhino were defined as animals located outside protected areas in situations which were not protectable with available resources or which did not contain enough rhino to be viable demographically or genetically.

Unfortunately, breeding and maintaining the Sumatran rhino has proven a much more formidable challenge than anticipated. Since 1984, 39 rhino, at risk in the wild, have been relocated to managed captive programs. However, mortality has been high: 18 of the 39 have died (46 %). Today only 21 (8 males and 13 females) survive in 10 captive facilities. Moreover, to date no breeding has occurred although one calf has been born to a female captured pregnant very early in her gestation period.

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A number of reasons have been considered as possible causes of the problems with captive programs:

- Many of the mortalities seem consistent with nutritional difficulties. The facilities with lowest rates of mortality (Sungai Dusun, Malacca, Sepilok, and Taman Safari) are adjacent to native habitat forest from which the browse components of the rhino diets are being collected. This browse may provide a better or even essential balance of nutrients needed by the rhinos which may not be available in the browse provided by captive facilities more distant from native habitat.
- Mortalities may be related to the size and configuration of captive enclosures. Sumatran rhino have large home ranges (~ 10 sq km / 4 sq miles) in the wild and individual adult rhino probably seldom encounter each other except when females are in estrus. Most of the captive facilities are relatively small (~ 1 acre/.4 hectares). Moreover, males and females are kept in adjacent or even in the same enclosures which do not provide adequate complexity for flight and evasion during the often violent interactions between the sexes. At least one of the mortalities in captivity appears the direct result of such conflict.
- The small size and configuration of enclosures may be inhibiting breeding. Indeed, because of the high level of aggression seen during introductions, many managers simply never place the sexes together. It is also the case, that bad luck of the draw concerning the sequence of sexes captured and the subsequent distribution of rhino among many facilities have hampered successful reproduction. Political agreements and constraints rather than biological objectives have prevented adult males and females from being placed in the same facility or enough individuals from being in one place to try different combinations that might produce success.
- A final cause of problems that has been strongly suggested is stress due to exposure to intense sunlight (especially its ultraviolet component), for these normally deep forest animals. Cataracts, presumably caused by exposure to sunlight, have been a recurrent problem with the captive rhino.

The recommendation from concerned conservationists resulting from a review of the program's performance is that the surviving rhinos in captivity be consolidated in the most spacious enclosures and natural conditions possible consistent with continuing the intensive protection and management believed necessary because of the precarious situation in totally free-ranging situations in the wild. These areas have been designated as "sanctuaries", a slightly different use of the term than has occurred in Africa, because rhino in the Sumatran Rhino Sanctuaries will not initially be quite as free-ranging as in the African counterparts. However, as protection improves and the rhino population grows, the objective is to move toward less restrictive confinement.

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## OBJECTIVES

- **Establish a managed breeding center in natural habitat (Way Kambas National Park in Sumatra, Indonesia) to propagate Sumatran rhinos under conditions that are managed but are also as natural as possible.**

This managed breeding center in natural habitat will be the nucleus of a Sumatran Rhino Sanctuary. As the program expands and encompasses more area, hopefully breeding will occur and rhinos can eventually be released into a larger protected area within the national park.

- **Consolidate the surviving population of captive rhinos from Indonesia, the United Kingdom, and perhaps United States by repatriating them to native habitat where they will have a higher probability of survival and reproduction.**

The captive facilities in Indonesia and the United Kingdom have already committed to place their rhino in the SRS thus providing a nucleus of 2 males and 3 females. Discussions will continue with the captive facilities in the United States, which now have only 1 male and 2 females, for possible placement of their rhino in the SRS in the future.

- **Develop a conservation tourism facility and education program in Way Kambas with the objective and expectation of producing income for rhino conservation, while improving awareness of this unique species to the local population.**

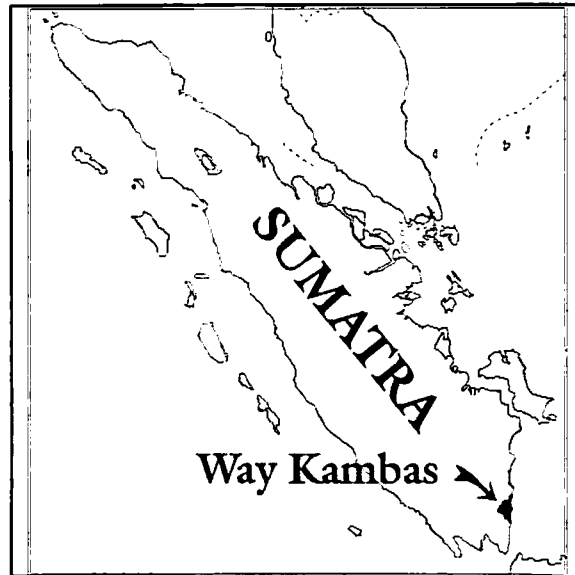
It is expected that within three to five years, sufficient income will be generated to support operating and expansion costs of the SRS. Longer term, it is projected that revenues from this program will produce additional funds that can be used for *in situ* conservation of rhinos elsewhere in Indonesia. The tourism program in Way Kambas will eventually coordinate with similar programs for the Javan rhino in Ujung Kulon to provide a package that will virtually ensure visitors of observing both species in natural habitat. This opportunity has indeed been impossible in the past. Since World War II, there has probably been less than 60 minutes of total observation time of Sumatran rhino in the wild by the large number of managers and researchers who have worked on this species.

- **Provide a model for rhino sanctuaries and supporting tourism that can be emulated elsewhere.**

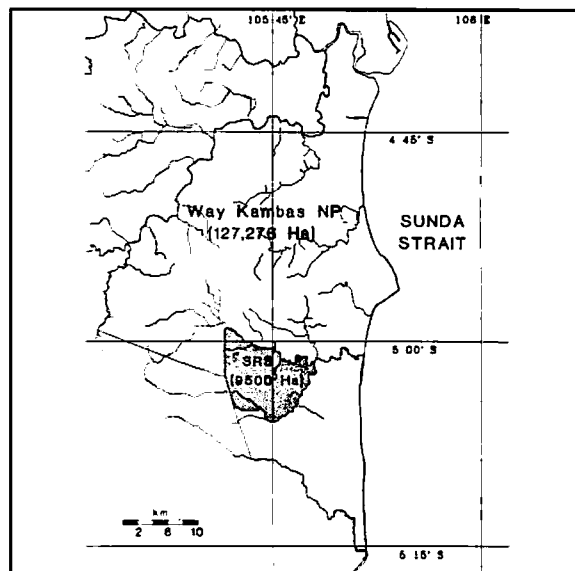
Conservation tourism is much less developed in Asia than in Africa because in general, it is more difficult to observe wildlife easily. The SRS will be an important and innovative step toward developing more conservation tourism in Asia, for it will offer opportunities to observe elephant, rhino and tiger in their natural habitat.

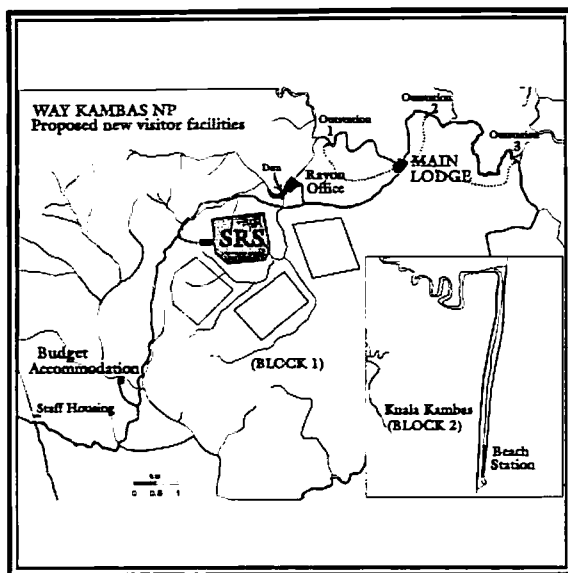
### THE PROPOSED SRS PROGRAM

The purpose of this project is to establish a Sumatran Rhino Sanctuary (SRS) in Way Kambas National Park, a protected area of about 1,300 sq. km on the southeast coast of Sumatra in Indonesia. The Park contains wild elephant, tiger, and a remnant population of Sumatran rhino.

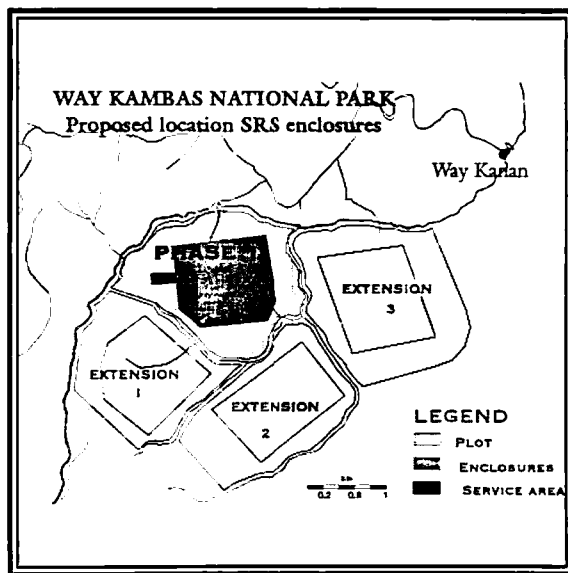


The SRS will be developed in an area of 100 sq km (7.4% of area of the National Park) which will be provided by the Government of Indonesia as a conservation and tourism concession to the IRF and its Indonesian partners.

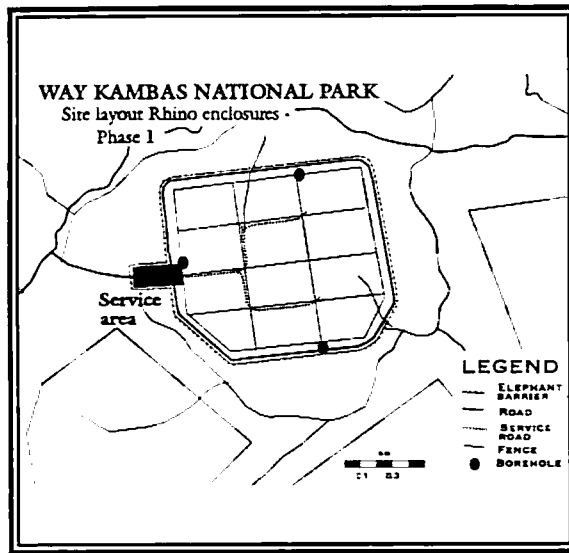




A complex of large enclosures (10 hectares = 25 acres) will be initially developed within the forest with as little disturbance to the vegetation as possible. An electric fence similar to those being used successfully in Africa to contain rhinos will be used. This fence will also serve to exclude wild elephants from the rhino areas or at least provide a barrier in which breaks can be readily detected and repaired.

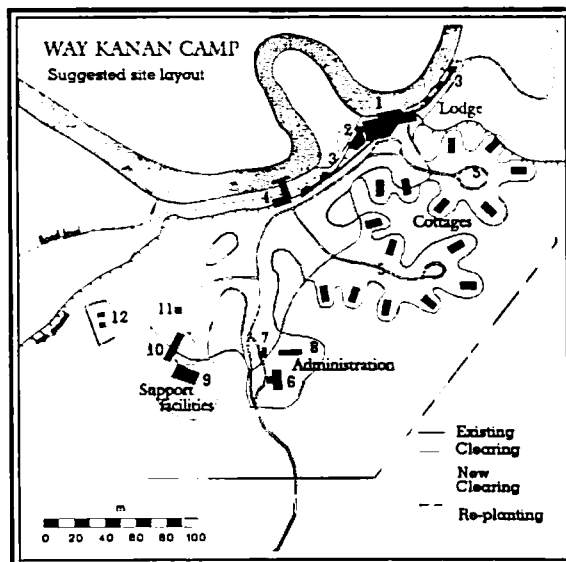


Each rhino will be provided with two enclosures between which they will be rotated. Males and females will be separated except when females are believed to be in estrus. A central saltlick to which rhinos will have sequentially access will be used to assist in estrus detection. All rhino will be equipped with telemetry transceivers installed in their horns to facilitate 24-hour surveillance.



A rhino management plan will be formulated and supervised by a board of technical advisers which will include all the persons who have investigated this species in the wild as well as in captivity. In addition to a full-time manager on site, there will be a continuous presence of curators and veterinarians with rhino experience from the global conservation community.

A further purpose of the SRS is to develop a conservation tourism facility and program in the Park to generate funds that are expected to render the SRS financially self-sufficient within 3-5 years and eventually to generate additional revenue for rhino conservation elsewhere. The visitor facilities will be situated at some distance from the rhino enclosures to minimize disturbance. Visitors will visit the SRS on elephant back.



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Way Kambas has a number of attractions in addition to the proposed SRS to enhance its desirability as a tourist attraction. The Park is the home to 250 wild elephants and is the site of an extensive elephant training center that has been developed to rescue and rehabilitate 150 "problem" elephants from unprotected areas. Way Kambas is also home to tigers and will be the site of a major tiger research program being supported by Exxon and its Esso subsidiaries worldwide. The proposed rhino and tiger programs will coordinate very closely in Way Kambas.

The SRS will be developed as a collaborative project among the International Rhino Foundation and a number of governmental agencies and non-governmental organizations in Indonesian and worldwide as identified below.

- The Government of Indonesian will provide the "conservation and tourism" concession of 100 sq. km. of the 1,300 sq km Park to a Management Company formed by the IRF and these partners.
- The IRF will enjoy controlling interest in this Company and will provide a continuous management presence for the SRS.
- The Management Company will contract Taman Safari Indonesia (TSI) as an Operating Company for the SRS. TSI has extensive experience in the highly successful operation of animal management, eco-tourism, and wildlife conservation, that include programs for Sumatran tiger and the Bali mynah. The SRS will also provide the opportunity for investors as well as donors to participate.

The Sumatran Rhino Sanctuary will also serve as a base of operations and training for anti-poaching units that will provide for better *in situ* protection both in Way Kambas and two other National Parks (Kerinci-Seblat and Barisan Selatan) which are the major habitats for the rhino in southern Sumatra. The International Rhino Foundation is intimately involved in facilitating and coordinating a major Project (U.S. \$ 2 million) sponsored by the Global Environment Fund (GEF) through the United Nations Development Program (UNDP) and United Nations Environment Programme (UNEP). All of the GEF funds must be used for anti-poaching activities (and hence are not available to assist with the SRS). The SRS will contribute to the infra-structural support for the anti-poaching operations and will eventually, through the tourist program, provide ongoing financial support for anti-poaching programs.



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**PREPARATORY STEPS TO DATE**

- 1990-1993 Promulgation of the Indonesian Rhino Conservation Strategy that strongly recommends creation of "rhino sanctuaries", described as managed breeding centers employing large enclosures in natural habitat.
- November 1993 A Population and Habitat Viability Analysis Workshop (PHVA) that further recommended the sanctuaries and developed some detailed guidelines for its development.
- August 1994 A Workshop at Taman Safari Indonesia of all major parties to develop a detailed action plan to implement the sanctuary.  
  
Commitment of the captive facilities in Indonesia and United Kingdom to provide their rhino for the sanctuary once established. These commitments would provide an initial nucleus of 2 males and 3 females for the SRS.
- December 1994 Intensive Site Evaluation of the proposed Sanctuary Site in Way Kambas National Park.  
  
Groundwork for securement of land concession in Way Kambas National Park from Government of Indonesian for the conservation and tourism facilities and program. This groundwork includes signature of Letter of Intent among Government of Indonesian, IRF, and YMR and preparation of a Memorandum of Understanding which is being finalized for signature.
- March 1995 Reconnaissance by IRF and TSI representatives to rhino sanctuaries in South Africa and Kenya to examine various rhino and elephant intensive management facilities.
- April 1995 Further refinement of details for the Management Company. Familiarization of the new Director General and administration of PHPA with the project.
- May-June 1995 Formation by the IRF and YMR of the companies required for formation of the joint venture company to receive the concession and operate the SRS.
- January-July 1995 Significant fund-raising by IRF. US\$ 225,000 already in hand. Another \$ 25,000 to be received by October 1995. Definite commitments for another \$ 150,000 in 1996 and \$ 100,000 in 1997. Goal continues to be US \$ 1,000,000 for the next 3 years.

**PROPOSED SCHEDULE FOR FURTHER DEVELOPMENT**

- August 1995            IRF Mission to Indonesia to:
  - Complete the ground work for the land concession from Indonesia.
  - **Finalize arrangements to commence immediate construction of rhino facilities even before concession received so that rhino can be moved to SRS by early 1996 at the latest.**
- Sept. - Nov. 1995    Construct initial facilities for rhino and support staff.
- Early 1996            Relocate rhino from captivity to SRS as soon as weather permits.
- March-June 1996     Construct initial facilities for tourism program.
- August 1996          Initiate first tourist visits

**BUDGET**  
**1995-1997**

**Costs for Start Up:**

Site visit and evaluation	\$ 17,000
Formation of Management Company	60,000
Planning documents	22,000
Ecological Impact Assessment (EIA)	12,500
Concession Application Process	27,000
Legal fees	5,000
Travel for International Advisors	27,000
Coordination	18,000
Local expenses	6,000
<b>Subtotal</b>	<b>\$ 194,500</b>

**Biological Facilities and Program:**

Fence for 12 rhino enclosures each 10 ha in size = 10,000 meters @ \$ 10/m	\$ 100,000
Fence for viewing area and service access: 3,602 m @ \$ 10/m	3,602
Elephant Barrier: 4700 meters @ \$ 10/m	47,000
Telemetry system with horn transceivers for rhino	75,000
Service and support facilities for biological programs	196,246
4X4 wheel drive vehicle	30,000
<b>Subtotal</b>	<b>\$ 451,848</b>

**Tourist Facilities and Program:**

Initial Camp and Equipment	\$ 511,750
3 Minivans	50,000
<b>Subtotal</b>	<b>\$ 561,750</b>

**TOTAL START UP AND CAPITAL COSTS** **\$ 1,208,098**

**Operation Costs:**

Site operation per year	\$ 94,727
Company operating costs per year	50,270
<b>Subtotal/year</b>	<b>\$ 144,997</b>

**TOTAL OPERATIONS COSTS FOR 3 YEARS** **\$ 434,991**

**TOTAL CAPITAL AND OPERATIONS COSTS FOR 3 YEARS** **\$ 1,643,089**

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**IRF FUNDING STRATEGY FOR  
SUMATRAN RHINO SANCTUARY (SRS)  
1995-1997**

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**NEEDS**

Start-Up Costs	\$ 196,000
Biological Program Infrastructure	\$ 452,000
Tourist Program Infrastructure and Start-Up	\$ 562,000
First 3 Years Operational Costs	<u>\$ 435,000</u>
<b>Total</b>	<b>\$ 1,645,000</b>

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**FUNDS RECEIVED OR COMMITTED**

IRF Core Funds	\$ 400,000
Additional IRF Funds Through Zoological Parks Board of New South Wales	\$ 125,000
ARAZPA/ASMP (Australasian Zoos apart from N.S.W.)	\$ 75,000
Subtotal	\$ 475,000

**LIKELY COMMITMENTS**

Additional IRF Funds Through Efforts of Zoo Atlanta	\$ 75,000
Sumatran Rhino Trust SRT (Unfulfilled Commitment to YMR)	\$ 50,000
European Union	\$ 150,000
Subtotal	\$ 400,000

**POSSIBLE COMMITMENTS**

AZA (Unfulfilled 1993 Pledge to IRF)	\$ 100,000
YMR Fundraiser	\$ 100,000
Subtotal	\$ 200,000

**TO BE RAISED**

Other Contributors/Investors Needed	<u>\$ 625,000</u>
<b>Total</b>	<b>\$ 1,645,000</b>

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