

# Helping a Species Go Extinct: The Sumatran Rhino in Borneo

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**Abstract:** *The Sumatran rhinoceros has been declining in numbers for more than a century, primarily due to hunting and to loss of its habitat as land is converted to other uses. Only in the last quarter century has the international community made concerted efforts to reverse this decline. However, government officials, international funding agencies, and conservation organizations, while paying lip service to the need for strong action, have often taken the path of least resistance in helping this species. Much of the money and effort put toward Sumatran rhino conservation has focused on new technologies or politically expedient strategies that have little to do with the real reasons behind the rhino's decline. The primary means of Sumatran rhino conservation in Indonesia and Malaysia, where viable populations might still exist, is still the capture and attempted breeding of this species—which, until now, has failed. I examined the history of the Sumatran rhino in Borneo and the recent situation in Sabah, where at least two important populations of this species might still survive. Sabah is presented as a case study that is indicative of the plight of the Sumatran rhino throughout its present range.*

Ayudando a una especie a extinguirse: El Rinoceronte de Sumatra en Borneo

**Resumen:** *Los rinocerontes de Sumatra han venido declinando en número por más de un siglo, debido principalmente a la presión de la caza y a la pérdida de su hábitat a medida que la tierra es modificada para otros usos. Recién durante el último cuarto de siglo, han habido esfuerzos concertados por parte de la comunidad internacional para revertir esta declinación. Sin embargo, agentes del gobierno, agencias de ayuda financiera internacional y organizaciones conservacionistas, mientras hablan de la necesidad de una acción decisiva, han tomado a menudo el camino del menor esfuerzo para ayudar a esta especie. La mayor parte del dinero y de los esfuerzos invertidos para la conservación del rinoceronte de Sumatra, se ha concentrado en nuevas tecnologías o estrategias políticamente convenientes, que tienen poco que ver con las razones reales detrás de la declinación del rinoceronte. La actividad principal para la conservación del rinoceronte de Sumatra en Indonesia y Malasia, donde aún parecen existir poblaciones viables, involucra la captura y el intento de cría de esta especie, lo cual hasta la actualidad ha fracasado. Este trabajo examina la historia del rinoceronte de Sumatra en Borneo y los recientes acontecimientos en Sabah, donde por lo menos dos importantes poblaciones de esta especie parecen aún sobrevivir. Sabah se presenta como un caso de estudio, donde la situación es indicativa de la difícil situación que atraviesa el rinoceronte de Sumatra a lo largo de su actual área de distribución.*

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## Introduction

It is no small miracle that rhinos still walk the face of the earth. No other group of animals has been so highly prized for so long yet managed to survive human on-

slaught. The focus of our obsession with this animal has revolved around the protuberance of hardened hair on the animal's head known as rhino horn. Rhino horn played an important role in medieval Chinese medicine, a role that it continues to play in traditional Chinese practices of today.

The use and trade in rhino horn is recorded from China as early as 2600 B.C. (Nowell et al. 1992), spread-

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ing in later years to Western Asia and the Roman Empire (Hirth & Rockhill 1911; Schafer 1963). But what was once a familiar animal throughout much of China was already considered a rarity "by the time of the ages illuminated by books" (Schafer 1963). By the T'ang Dynasty (600–900 A.D.), large quantities of horn were being imported to China. With the opening of new trade routes, horns were brought to China from northern Somalia, the Arab states (Hirth & Rockhill 1911), and the southeast Asian areas of modern day Vietnam, Java, Sumatra (Mills 1970), the Malay Peninsula (Hirth & Rockhill 1911), Borneo (Mjöberg 1930), Cambodia (Ta-Kuan 1993), Laos (van Wusthof 1871) and Thailand (Gervaise 1688; Bowring 1857; Bock 1884). The near extinction of the Javan and Sumatran rhinos in modern times has been largely attributed to the trade during the T'ang Dynasty (Schafer 1963).

The preparation of rhino horn for particular ailments is often cited from the Divine Peasant's Herbal, written in the first century B.C. (Nowell et al. 1992), and from the Pen Ts'ao Kang Mu, a well-known sixteenth century Chinese medical text. Although there have been modifications and revisions to the Chinese medical pharmacopoeia since those times, modern medical and popular books contain both old and new applications for rhino horn (Read 1982; Yen 1992). Many licensed doctors and pharmacists in Taiwan continue to sell or prescribe rhino horn for their patients (Nowell et al. 1992; Loh & Loh 1994a). In mainland China, an increase in the availability of rhino horn and an increased demand by the pharmacies is of growing concern (Loh & Loh 1994b).

The rhino family, containing five living species, once ranged widely throughout the more open habitats of Africa and the tropical and subtropical habitats of eastern Asia, including Sumatra, Java, and Borneo. Today rhinos survive only in small, disjunct populations. The Sumatran rhinoceros, the smallest of the rhino species, was once found throughout Assam, Myanmar, Thailand, Indo-China, the Malay peninsula, Sumatra, and Borneo. Today, breeding populations of this species are thought to exist only in Sumatra, the Malay peninsula, and north-east Borneo.

The survival of all five rhino species into the twentieth century can be attributed to a number of factors: legal protection of the species, an increase in the number of protected areas where they survive, the ability for certain rhino species to live in rugged and isolated forested areas, and political and socioeconomic factors that have closed down many of the historic trade routes for rhino horn. The traditional use of rhino horn has not faded with time, however, and with the present Chinese economy growing at an unprecedented rate, these products are becoming ever more affordable to the new consumer class.

During the 1970s, rising prosperity in parts of Asia created a resurgence in demand for rhino parts, and this

demand, coupled with escalating prices, encouraged greater hunting of the rhino. Between 1970 and 1987, an estimated 85% of the world's remaining rhino population was lost (Fitzgerald 1989). Many small, fragmented populations were wiped out. As millions of dollars were spent on efforts to reverse this trend, most rhino populations continued to decline.

I examined the case of the Sumatran rhino in Sabah, Malaysian Borneo, where at least two important populations of this species might still survive. First I discuss how, for the last two decades, highly publicized efforts to save the Sumatran rhino have been concerned more with high-profile, technical issues than with the more difficult job of protection and management in the field. Then I will show how the decline of this species in Borneo has been watched and documented for more than a century, while efforts to remedy this situation have fallen terribly short of what is needed.

### International and Regional Efforts to Save the Sumatran Rhino

In response to continued concern for the decline of Asian rhino species, the Asian Rhino Specialist Group (ARSG) was created by the Species Survival Commission of the World Conservation Union. The first meeting of this group, convened in Thailand in 1979, emphasized the need for data collection, research and monitoring efforts, protection of rhino habitats, reduction of poaching, and strict control of trade in rhino products. A second meeting of the ARSG, held in Malaysia in 1982, analyzed Asian rhino distribution patterns, estimated numbers of animals, and put forth conservation requirements. By the third meeting in Singapore in 1984, the ARSG decided to launch a program to capture "doomed" Sumatran rhinos for breeding in captivity in Asian, European, and North American zoos. Doomed rhinos were loosely defined as animals whose lives were in immediate danger due to the clearing or conversion of forest for other uses.

The Sumatran Rhino Trust (SRT), an organization spawned from the American Association of Zoological Parks and Aquariums, initially worked out an agreement with Malaysia for the export of animals to the United States with the aim of establishing a captive-breeding program. But protests over the shipping of Malaysian rhinos to western zoos resulted in the dissolution of the proposed agreement and the establishment of a separate Malaysian captive-breeding program. Political differences between the state of Sabah and the national government then led to the creation of two separate Malaysian breeding programs, one in Peninsular Malaysia and one organized by the newly formed Sabah Rhino and Wildlife Conservation Committee, each to be funded and coordinated individually.

Because of the lack of cooperation between the different countries in the region, the fourth and fifth meetings of the Asian Rhino Specialist Group in Indonesia (1986) and Malaysia (1987), respectively, were held to design a comprehensive conservation action plan for all Asian rhino species. The subsequent plan (Khan 1989) concluded that there was still time to reverse the rapid decline of the Sumatran rhino. The creation of captive populations was deemed an important component of any Sumatran rhino conservation plan. While recognizing the importance of *in situ* protection and management of wild populations, this plan clearly emphasized *ex situ* management of captive rhino populations by the ARSG.

In 1987, the SRT signed an agreement with the Indonesian government. It continued to acknowledge that protection and management *in situ* was a top priority for Sumatran rhino conservation, but the agreement stipulated the following:

- (1) A donation of US\$60,000 per rhino would be paid to the newly established Indonesia Rhino Foundation once rhinos were received in SRT facilities in North America.
- (2) In the event of death during transport to the zoos and for a period of one year, an indemnity of US\$25,000 per rhino would be paid by SRT to the Indonesia Rhino Foundation.
- (3) In the event of death during capture, US\$5000 per rhino would be paid by SRT to the Indonesia Rhino Foundation.
- (4) All expenses for the survey, capture, and transport of rhinos would be covered by SRT.
- (5) SRT would contribute \$20,000 per year for the duration of this agreement for improving protection and management for rhinos in National Parks.

In 1993, the SRT was dissolved after five years and a cost of more than US\$2.5 million. Virtually none of the money went to improving the protection and management of wild rhinos in existing protected areas. This program, along with the similar efforts in Sabah and Peninsular Malaysia to catch doomed rhinos for breeding, were expensive failures resulting in the capture of 35 rhinos and the deaths of 12 rhinos between 1984 and 1993 (Foose & Zainuddin 1993). The failure was partly a result of the skewed sex ratio of captured animals. Still, as of 1993, the surviving 23 rhinos (14 females, 9 males) were being held in 10 separate areas in Indonesia, Peninsular Malaysia, Sabah, the United Kingdom, and the United States. Other than one facility in Peninsular Malaysia with five rhinos, no more than three rhinos were at any of the other facilities (Foose & Zainuddin 1993). Because adult males and females were never together in the same place for a significant amount of time, there have been no births from captive Sumatran rhinos to

date, except for one female who was pregnant when captured.

## The Sumatran Rhino in Borneo

Although Borneo was once home to both the Javan and the Sumatran rhino, the Javan rhino was thought to have disappeared due to natural causes about 12,000 years ago (Cranbrook 1987). The Sumatran rhino, described as a distinct subspecies on Borneo (Groves 1965), was still considered relatively common into the early twentieth century (Weedon 1906; Mjöberg 1930). The harvesting and sale of rhino horn, regarded by the government as simply another forest product, was encouraged throughout the early 1900s (Payne 1990a).

By the turn of the century, the alarm was already being sounded about the rhino's decline, because hunting for the highly prized horn continued unabated to support a primarily Chinese market (Shelford 1916; Harrison 1988). By the 1950s it was reported that the Sumatran rhino has been hunted to near extinction in Borneo (Harrison 1955, 1956), partially due to the hunting skills of the indigenous people (van Strien 1986). This did little to dampen trade however, as countries such as Singapore continued to obtain rhino horn from Borneo (Talbot 1960).

By the 1960s Harrison (1965) estimated that there were no more than two rhinos left in Sarawak, possibly five in Kalimantan, and 11–13 in Sabah. The Fauna Conservation Ordinance of 1963 in Sabah and the Wild Life Protection Ordinance of 1958 in Sarawak protected rhinos on paper but did little to deter poaching or to ensure the prosecution of offenders. Ten years later there was still virtually nothing known of existing rhino numbers (Rookmaker 1977). In 1982, Davies and Payne (1982) estimated that 15–30 rhinos remained in Sabah and recommended protected status for two areas that still contained numbers of rhinos: Silabukan and Danum Valley. Shortly thereafter a summary of reports compiled by van Strien (1986) indicated that rhinos were virtually gone from Sarawak and most of Kalimantan. At this point, Sabah contained the most important populations of Sumatran rhino outside of Sumatra and Peninsular Malaysia.

## Efforts to Protect the Sumatran Rhino in Sabah

Between 1979 and 1987, as Sabah became the focus of attention for Sumatran rhinos in Borneo, some positive steps were taken by the Game Branch of the Sabah Forest Department and subsequently by the newly formed Sabah Wildlife Department to protect the areas where these last populations existed.

Danum Valley was long considered one of the most

pristine lowland forest areas left in Borneo. Free of human habitation and known to contain a rich diversity of wildlife, the area was assumed to be relatively undisturbed because of its ruggedness and inaccessibility (Marsh & Greer 1992). When the presence of rhinos was first suspected in this area in 1976, the Danum Valley was proposed as a national park (Kiew 1976); it was later recommended for protection as a game sanctuary (Davies & Payne 1982). However, the state-run Sabah Foundation, which maintained a long-term timber concession in the area, did not want to relinquish its rights to the land. Instead, in 1982 a 438-km<sup>2</sup> area was designated as "Danum Valley Conservation Area," in which logging would be prohibited but control would remain under the Sabah Foundation. Soon thereafter, buildings for research and visitor accommodations were constructed at the site (Andau 1987). Research conducted at the site in the late 1980s verified that at least one population of rhinos was declining in numbers (Ahmad 1991). By 1989 a traverse through the area recorded only a single set of rhino footprints (Payne 1990b).

A second area, the Silabukan Forest Reserve, had been commercially logged since the 1960s, even while it was thought to contain one of the largest remaining concentrations of rhinos in Sabah. In the early 1980s, Davies and Payne (1982) verified the presence of a breeding population of Sumatran rhinos in this lowland forest and pushed for protection of the area. Finally, in 1984 1220 km<sup>2</sup> were gazetted by the Sabah government as the Tabin Wildlife Reserve, primarily for the protection of rhinos (Andau 1987). But, selective logging in the reserve continued under license through 1986 (Payne 1986) and "unofficially" through the early 1990s.

Six walk-through surveys in Tabin conducted by the Wildlife Department between 1980 and 1991 indicated a minimum of three to seven rhinos in the area, with steady declines in rhino sign between the 1982 and 1991 surveys (Jomitin 1991). Noticeable shifts in rhino distributions between surveys caused enough alarm for the recommendation of urgent follow-up research to investigate the possibility of declining rhino numbers (Shukor et al. 1989). No such research was ever conducted. The first management plan for the sanctuary (Payne 1986) listed rhino poaching as the most serious threat to the value of Tabin.

In the Asian Rhino Action Plan (Khan 1989), Tabin Wildlife Reserve and Danum Valley were singled out as the two main areas where viable populations were likely still to exist in Sabah. The plan cited estimates of 20 and 10 individuals, respectively, although no definitive surveys had been carried out at either site. Specific activities recommended by the plan for protecting rhinos in Sabah included the following:

- (1) strengthening the staffing, funding, and logistical support of the Sabah Wildlife Department to allow

for effective protection and research of wild rhino populations;

- (2) stricter legislation against rhino poaching;
- (3) review of the size and protected status of Danum Valley Conservation Area and Tabin Wildlife Reserve.
- (4) Surveys in Danum and Tabin to determine the true status of the rhinos there.
- (5) Capture of isolated or threatened rhinos for captive breeding or translocation.

These recommendations, while appropriate, did little more than rephrase similar recommendations made during the first meeting of the Asian Rhino Specialist Group in 1979. The fact that there had been little progress on these issues, 10 years after they had first been discussed, was not mentioned. As of 1992, there were still no reliable estimates of rhino densities for any part of Sabah. Of the five activities recommended by the Action Plan, only the capture of doomed rhinos was carried out with any serious intent.

In September 1992, I organized a rhino survey by the author at the request of the Sabah Foundation and the Sabah Wildlife Department to assess rhino abundance and to standardize a methodology for future rhino surveys and monitoring in the area. The survey was also intended to provide data to the Sabah Wildlife Department for use in upgrading the Greater Danum Valley Conservation Area into a park or wildlife reserve.

Using methodology developed by Borner (1979) and van Strien (1986), two small groups of rhinos, each consisting of two to three individuals, were found through intense surveying of areas totalling 80 km<sup>2</sup> (Rabinowitz 1992). Assuming that other rhinos might be similarly distributed, an estimate of 13–23 rhinos was made for the 1000-km<sup>2</sup> Greater Danum Valley Conservation Area. While this estimate was more than twice that speculated by the Asian Rhino Action Plan (Khan 1989), this survey put to rest the assumption that much of the area was undisturbed and protected by virtue of its ruggedness and isolation.

Only two out of seven teams found recent evidence of rhino presence. Five teams encountered only old rhino sign, along with old hunting camps. This included an area where rhinos had been studied in 1986 (Ahmad 1991) but were now no longer present. Of the two teams that discovered fresh rhino sign, one was located adjacent to the field station and tourist accommodations, an area with regular human activity but no hunting. The second team, which was dropped by helicopter into the most remote section of the study area, encountered an ongoing rhino-poaching expedition. The hunters fled along a well-used trail peppered with old campsites, indicating a history of poaching in the area.

Despite the serious and unexpected nature of these findings, there was no attempt by the Wildlife Depart-

ment to look into the situation. The following year there were still no patrols sent into the area, nor any effort to check or monitor the recent rhino sign that had been detected. Because no immediate action was taken to change the protected status of the Danum Valley despite the survey, the Wildlife Department did not feel compelled to pursue further surveys or management activities in the area.

In Tabin Wildlife Reserve, meanwhile, other activities were underway. As part of an environmental management project funded by the United Nations Development Program in the early 1990s, a wildlife specialist was hired as a consultant to the Sabah Wildlife Department, and a New Zealand consulting firm was contracted to provide a manager for the Tabin Reserve. A second Tabin Management Plan was produced (ANZEC 1992) that did little more than restate the initial 1986 plan (Payne 1986). Illegal logging and poaching were still identified as the major threats to the reserve.

Despite new infrastructure, the assignment of a full-time staff, and the presence of foreign consultants assigned to Tabin Reserve, there were still no systematic patrols or surveying of the area when I visited and trained staff there in 1992. During a 1992 elephant census in Tabin, spoor of only one rhino was encountered in 118 km of transects (Dawson 1992). Later that year, rhino tracks were sighted close to the Tabin ranger station in an area frequented by visitors and researchers but with virtually no hunting pressures. Although the implication of these track locations, which were similar to some of the track locations in the earlier Danum rhino survey, were of potential management importance, there was never any follow-up to the reports. At the time of this writing, there has not been a single reliable estimate of the number of rhinos that might still survive in Tabin, nor has any systematic management been carried out for the species.

With encouragement from the foreign wildlife specialist, the Sabah Wildlife Department shifted most of its emphasis to the capture of doomed Sumatran rhinos—this, despite the fact that organized patrols in the field were not being encouraged, proper surveys were not being carried out, and the foreign consultants themselves were insufficiently trained to handle wild-caught rhinos. Furthermore, the definition of doomed rhinos had now been expanded to include any rhino found or captured outside of an already existing protected area, which did little to encourage new rhino surveys or the protection of remaining forest areas where rhinos still survived.

Of two new rhinos captured since 1992, both in the forests of an area proposed for protection along the Kinabatangan River, one died in captivity under the care of a foreign veterinarian sponsored by the United Nations Development Program and another was radio-collared by the Program's wildlife specialist and put in an en-

closure in Tabin. The rhino immediately broke free of the enclosure and went into the forest. Despite the collar, the animal was never followed after its escape. Under the same management, efforts to capture, collar, and relocate additional rhinos were continued.

## Discussion

Despite protective legislation and the creation of protected areas where rhinos survive, Sumatran rhino populations continue to decline. Within the last two decades, the international community has stepped in to assist in the protection of this species. During that time, every report, management strategy, and action plan has come to the same conclusion: The decrease in rhino populations is due to poaching carried out primarily to collect the horn and to habitat loss as land is converted to other uses.

The problem, however, has been that once the causes of decline of the Sumatran rhino were recognized, the actions needed to remove or neutralize these causes were never fully implemented. Both Malaysia and Indonesia acceded to the Convention on International Trade of Endangered Species of Wild Fauna and Flora (CITES), in 1978 and 1979 respectively, which effectively banned the legal trade in rhino products. Yet the legislation needed to fully implement CITES was never enacted in either country (Nichols et al. 1991). Furthermore, even the existing legislation relating to wildlife protection in Malaysia and Indonesia was rarely used to discourage trade in rhino parts or to prosecute offenders.

In Sabah, as elsewhere, the easiest, most palatable, and most visible steps toward Sumatran rhino conservation were taken first. Rhino habitat was better secured through the creation of protected areas that were not controversial and that caused minimal interference with ongoing logging activities and agricultural development plans. Tabin Wildlife Reserve, for example, gained full protection only after most of the valuable timber had been taken out, and Danum Valley remains protected only at the discretion of the Sabah Foundation, the state's largest timber concessionaire. Other management activities, such as antipoaching patrols, education campaigns, and surveys to assess the adequacy of reserve size, were increasingly discussed but never implemented because they were more difficult, time consuming, and sometimes controversial if they conflicted with existing land-use policies.

Emphasis in time, money, and effort has been placed on the capture and breeding of rhinos, despite the fact that such activities alone, even if successful, would not solve the problem nor remove the causal factors of rhino decline in the wild. Although such activities involve known techniques and provide a high-profile out-

let for government spending and international funding, the implication that captive breeding can save the Sumatran rhino makes the failure of *in situ* conservation seem less serious. This, in turn, helps create a self-fulfilling prophecy that wild populations have a low probability of survival.

Caughley (1994) distinguishes two advancing fronts in the field of conservation biology. The first, which he calls the declining-population paradigm, is concerned with the external causes that drive populations toward extinction. Research efforts are aimed at determining why populations are declining and how to neutralize the causes. The second, called the small-population paradigm, deals with the risk of extinction as a consequence of small population size. Here one deals with the genetics and dynamics of a small, finite population. While the former paradigm is mostly empirical and lacks scientific rigor, the latter is mostly theoretical and thus more attractive by virtue of its seemingly "hard" scientific approach.

The small-population paradigm dominated much of the science of conservation biology in the 1980s (see Soulé & Wilcox 1980; Frankel & Soulé 1981; Soulé 1986, 1987), but it is almost completely removed from the real world (Caughley 1994). The proponents of this approach, using terms such as extinction vortices, minimum viable populations, population and habitat viability analyses, inbreeding depression, and metapopulation analysis, do their field work in the laboratory, in captive-holding facilities, and at the computer. They acknowledge the need for *in situ* protection of wild populations, but their results almost always point to the same conclusion: declining populations in the wild will eventually become extinct, and thus captive breeding is needed to save the species.

Using decision analysis, Maguire et al. (1987) predicted the probability of Sumatran rhino extinction if certain actions were or were not taken by Indonesia and Malaysia. The choice of possible actions included increased control on poaching, new and/or expanded protected areas, fencing of existing protected areas, translocation, and captive breeding. Not surprisingly, the capture and breeding of wild rhinos were viewed as the most promising means of saving the species.

But as with other attempts at linking theory with management applications, the actual attempts to establish a captive Sumatran rhino herd that would help repopulate the wild herd fell far short of expectations. Not only was the sex ratio of captured Sumatran rhinos highly skewed, but those in captivity proved extremely difficult to breed. Furthermore, the international and regional captive-breeding programs were subjected to the same political and economic realities that caused Maguire et al. (1987) to so easily discard other conservation actions.

While some of the blame for the decline of the Suma-

tran rhino must be placed on the Indonesian and Malaysian governments, the rest of it falls squarely in the lap of international funding and conservation organizations. The international community, with its funding and expertise, has played a major role in directing the course of rhino conservation over the last quarter century. Unfortunately, it has tried to avoid dirtying its hands with controversial and difficult issues such as poaching, protected-area staff training and wages, and the establishment of new reserves in areas where local communities, government agencies, or entrepreneurs wish to alter or use the land for other purposes. Foreign advisers and nongovernment conservation organizations have all too often avoided such issues because of the risk of becoming an unwelcomed guest.

While political, cultural, and socioeconomic issues in Indonesia and Malaysia continue to interfere with Sumatran rhino protection, these difficulties have never been insurmountable. The rhino simply has not been considered important enough for governments and large funding agencies to tackle these realities. Only when a firm commitment is made to save the Sumatran rhino will the species stand a chance of survival. Regrettably, our years of accumulated failures and avoidance of issues have not moved us closer to this kind of a commitment. The 1993 report of the Asian Rhino Specialist Group to the United Nations Environment Program Conference for Rhinoceros Range States, Consumer States, and Donors, estimated a new three-year cost for rhino conservation in Indonesia and Malaysia at approximately US\$14 million. As part of this cost, a two-million-dollar program by the Global Environmental Facility is already underway to establish yet another conservation strategy for southeast Asian rhinos in Indonesia and Malaysia. This "new" strategy, based primarily on viable population theory, entails the following components: wild population protection, sanctuary management, captive propagation, and gene-bank technologies. The strategy ignores the fact that the only means likely to save the rhino in the wild involves intensive, on-the-ground protection and management activities.

Meanwhile, the decline of the Sumatran rhino continues. In August 1994, 12 more Sumatran rhino horns were confiscated in Taiwan that had been smuggled on a fishing boat from Malaysia (The Jakarta Post, August 9, 1994). In Sabah, the Wildlife Department continues to capture doomed rhinos from areas that have not been adequately surveyed nor even considered for protected status. After all these years, do we know how many Sumatran rhinos we are dealing with? No, but soon we might have a nice round figure.

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