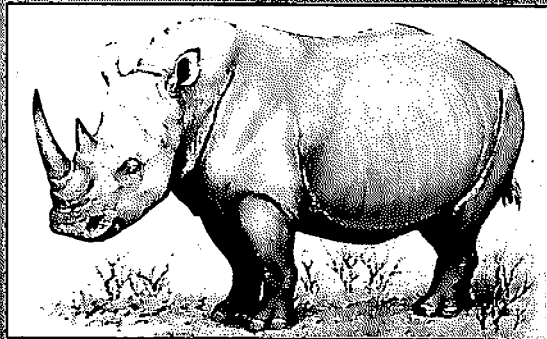
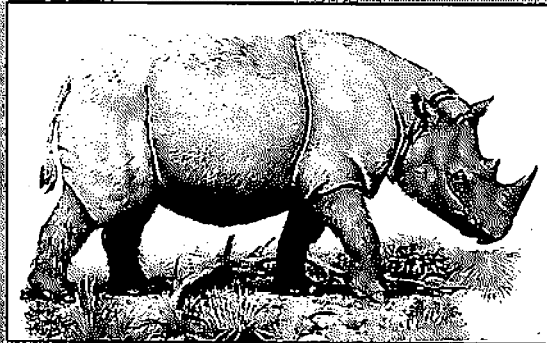
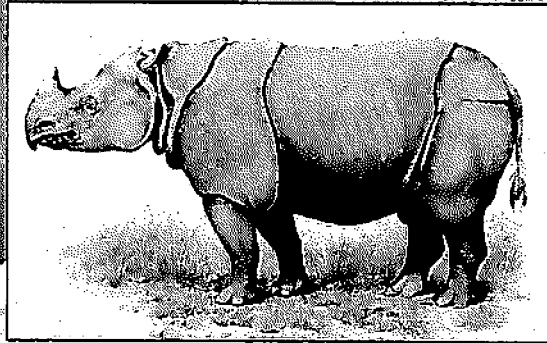




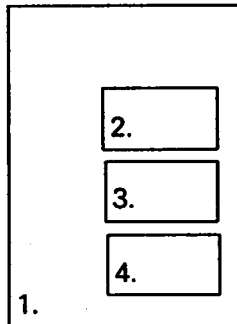
WWF

A WWF
Campaign Report
February 1992

Help WWF Stop Rhino Horn Trade



On the Cover:



1. Black rhino
2. Javan rhino
3. Sumatran rhino
4. Square-lipped rhino

Cover photograph: WWF/Mark Boulton/ICCE

Cover illustrations: © WWF/Helmut Diller

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Introduction

Dr Simon Lyster, Treaties Officer for WWF International

Dr Yu Yu-Hsien, Taiwan's minister responsible for the environment, recently said, "Times are changing in Taiwan. If people are made aware of the link between the medicines they use and the extinction of wild rhinoceroses, they will switch to other medicinal products."

The statement is encouraging news for WWF's "Stop the Rhino Horn Trade" campaign, launched in April 1991. The goal: to persuade the few remaining important market countries for rhino horn—notably Taiwan, South Korea, China, and Thailand—to phase out the trade.

Almost one year later, as we approach the eighth meeting of the Conference of the Parties to CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), some progress has been made—new legislation in Thailand, a government-sponsored workshop on curtailing the trade in Taiwan, and a declared intention to join CITES from South Korea. But there is still much to do.

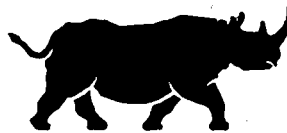
In Taiwan, recent WWF-funded research shows the magnitude of the rhino horn trade is even greater than was previously thought. The study, led by Acting Director of TRAFFIC Taipei (Trade Records Analysis of Flora and Fauna in Commerce) Kristin Nowell, reveals thousands of pharmacies selling rhino horn and up to 10 tonnes of stock. Smuggling to the island continues. For an in-depth look at the TRAFFIC Taiwan report, see page 4.

Earlier successes in Japan, Hong Kong, Yemen, and elsewhere prove that tough laws and a concerted effort to promote substitute use can effectively reduce illegal trade and demand for rhino horn.

There is no time to lose. The recent seizure of 10 rhino horns in Singapore—probably Sumatran or Javan—confirms the pressure these two highly endangered Asian rhino species are under. Black rhino poaching in Zimbabwe, home to about half the world's population of the species, rose dramatically in 1991—over 140 animals were killed last year. The Zimbabwe Department of National Parks and Wildlife estimates it needs double its current US\$10 million budget to effectively conserve rhinos. In an effort to raise conservation funds, Zimbabwe has submitted a proposal to CITES to export horn from stockpiles and dehorning operations. South Africa also wants to export horn from its white rhinos.

The need for resources to fund rhino conservation work is very real, especially in Zimbabwe, whose desire to export horn is understandable. However, exporting horn will fuel the markets and could cause serious problems for rhinos elsewhere, particularly Asian rhinos.

If, as is likely, CITES rejects Zimbabwe and South Africa's proposals, other sources of funds must be found for their rhino conservation programmes. Equally, efforts should be redoubled to encourage and assist the remaining market countries to phase out the trade in horn as quickly as possible to reduce the demand and poaching pressure. It can be done, and must be done, if the world's five species of rhinoceros are to survive.



**STOP THE
TRADE IN
RHINO
HORN**

Illustration: Creative Point Design

To Trade or not to Trade?

That is the big question to be answered at the 2-13 March meeting of the Conference of the Parties to CITES in Kyoto, Japan. Conservationists will focus on the proposals to downlist rhinos—an issue that has as much to do with finance as biology

“Whatever happens at CITES is going to be extremely important to the future of rhinos,” says Jorgen Thomsen, Director of TRAFFIC International.

Thomsen is talking about the proposals made by South Africa and Zimbabwe to export rhino horn. South Africa wants to downlist southern square-lipped, or white, rhinos (*Ceratotherium simum simum*) from Appendix I to Appendix II. This means South Africa could sell horn from its white rhino population, which has grown steadily over the years to about 5,000 animals. Zimbabwe wants to export from its stockpile of black rhino (*Diceros bicornis*) and southern white rhino horn. The country currently has 1,400-2,000 black rhinos and about 250 southern white rhinos. Zimbabwe also hopes to establish a captive breeding centre and sell horn from the animals to cover operating costs.

South Africa and Zimbabwe’s proposals are an effort to raise funds they need to continue their rhino conservation programmes. “Like many countries, Zimbabwe is in recession at the moment,” says Simon Stuart, Head of IUCN–World Conservation Union’s Species Survival Programme, “so the government is cutting spending in most departments—including wildlife.” And Zimbabwe’s past conservation success is due in part to the fact that its wildlife agency “has received more money than those of other African countries,” adds Stuart.

Zimbabwe estimates it needs US\$20 million a year to keep its black rhinos alive. “With reduced revenue, the rhino will be the first species to go because it’s the most valuable,” says Stuart. And over the last year, Zimbabwe’s rhino horn stockpile has grown as a result of their dehorning programme.

Funds are urgently needed for black rhino conservation, especially in Zimbabwe, and the money has to come from somewhere. The fact that rhinos, after being listed on Appendix I of CITES for 15 years, are still on the decline is good reason for South Africa and Zimbabwe to propose alternative rhino conservation strategies.

However, WWF believes that resuming a legal trade in horn carries many risks. The move would perpetuate a demand that has caused the catastrophic fall in rhino numbers over the last 30 years. It could mean that countries such

What Is CITES?

One of the world’s most important conservation agreements, the Convention on International Trade in Endangered Species of Wild Fauna and Flora came into force in 1975. Today, 112 countries are Contracting Parties to the Convention, which prohibits international commercial trade in endangered species (listed in Appendix I) and regulates trade in less-threatened species (listed in Appendix II) through a permit system.

Each CITES Party is required to designate one or more governmental departments as a Management Authority to issue permits and compile annual trade reports. A designated Scientific Authority advises on permit approvals. The CITES Secretariat, located in Lausanne, Switzerland, oversees Convention administration.

All five rhino species are currently listed in Appendix I. Zimbabwe and South Africa’s proposals need a two-thirds majority of CITES Parties present at Kyoto to be adopted.

as Japan, Yemen, and Hong Kong, once important markets for rhino horn that are now either closed or almost closed, could once again start importing horn and thus increase the current demand. A strengthened market could also cause serious problems for the three Asian species of rhinoceros, two of which—the Javan and Sumatran—are highly endangered and very vulnerable to poaching.

For these reasons, WWF will urge CITES Parties to reject the South African and Zimbabwean proposals. However, the situation for all rhinos is so precarious that when it comes to seeing if there are better ways to protect the animals, no stone should be left unturned. WWF therefore supports the idea of further research—to be conducted between now and the next CITES meeting—to gain a better understanding of the trade, and to

determine whether current policies need to be changed or can be improved.

“We want the most effective method to save the world’s rhinos. Right now a total trade ban and market shut-down offer the best hope. But if future studies show otherwise and rhino populations continue to decline, rhino conservation could take a different course,” says Dr Simon Lyster, Treaties Officer for WWF International.

Thomsen agrees: “The Kyoto conference needs to recommend that a really careful analysis of supply and demand of rhino horn be carried out at different levels. Look at stocks held in and out of Africa. Look at stocks being accumulated from dehorning. Look at sustainability of any offtake of rhinos. From that we can figure out how to manage the trade or influence overseas stockpiling.”

Market Focus: Taiwan

A groundbreaking WWF-sponsored TRAFFIC Taipei survey of traditional pharmacies reveals that Taiwan is sitting on a mountain of rhino horn. The project's final report not only sheds new light on the rhino horn trade, but is the catalyst for a major achievement: this month Taiwan's wildlife management authority, the Council of Agriculture, co-hosts a workshop with TRAFFIC to develop a strategy to control trade in rhino horn

Last year, 43 investigators, ranging from college students on Lunar New Year holiday to concerned retirees, conducted widespread and detailed surveys of Taiwan's traditional medicine market to get the lowdown on rhino horn stocks and uses.

The surveyors' result: There may be up to 10 tonnes of rhino horn—equivalent to about 4,000 dead rhinos—stockpiled on Taiwan. What does this mean? "It means that it's already too late to outlaw the sale of rhino horn in the country," says Kristin Nowell, Acting Director of TRAFFIC Taipei. "There is too much horn on the market, there is too much invested. It is too easy to sell. The police here cannot go out and bust thousands of pharmacies for possession of rhino horn. It just wouldn't work."

The most effective strategy to prevent Taiwan from importing more horn, Nowell believes, is to register all existing stocks and allow them to be sold off over a period of time. By providing doctors and pharmacists with a way to legally sell stocks, subject to government oversight, the authorities responsible for enforcing the law should be more willing to pursue those who choose not to comply. This month a landmark government-sponsored workshop brings together TRAFFIC, agencies from all levels of government, and medical and pharmaceutical societies to discuss the issue and review

draft regulations to control internal trade of existing stocks. The combination of WWF's ongoing rhino horn trade campaign and the final report for WWF project II3637.03 "Stopping the Rhino Horn Trade in Taiwan", written by Nowell, Dr William W.L. Chyi, and Dr Kurtis C.J. Pei, is largely responsible for the Council of Agriculture's green light on the TRAFFIC Taipei brainchild.

The first major international conservation organization office in Taiwan, TRAFFIC Taipei, opened in October 1991.

The Survey Strategy

Di Hwa Street is a dark little thoroughfare that runs behind Taipei's train station. Along the pothole-pocked sidewalks are big, chaotic stores filled with bins of dried mushrooms and lizards. Stuffed tigers and jars of mysterious organic matter fill some windows. Other shops sell only herbs and candy. This is the city's wholesale district where pharmacy owners go to buy natural medical materials in quantity. From here rhino horn goes to shops all over the island. The typical traditional pharmacy might be next door to a 7Eleven on an anonymous street corner.

The surveyors ventured to every county and municipality, where they

covertly and overtly interviewed pharmacists. The goal: to determine the extent and vitality of Taiwan's rhino horn market.

The TRAFFIC team found the fledgling rhino horn detectives through schools. "Most colleges have an environmental protection association, bird club, or conservation society," says Nowell.

"The students are basically committed to conservation and did a really good job," explains Nowell, who has lived in Taipei for three years and speaks Mandarin. "But the survey was something new to them. There just isn't a lot of publicity on conservation but you can certainly say interest in it is growing."

For covert interviews the monitors, armed with a rhino horn prescription, posed as customers wanting to buy the medicine for a sick relative. Questions were designed to find out whether the store had rhino horn, what type—Asian or African, and price. Any other comments the pharmacists made on domestic trade or hints of total stock amounts were noted.

Report Results

After 1,162 pharmacy visits, 1,291 telephone queries, 125 detailed interviews, and 41 mail-in survey questionnaires, Nowell, Chyi, and Pei made estimates on horn stocks, availability, prices, and average prescription dosages.

But there is an obstacle to accurate numbers: "We don't even know how many pharmacies there really are," says Nowell. In addition to the 5,663 licensed traditional medicine sellers in Taiwan, the Chinese Medicine Commercial Society estimates there are 8,000 un-

licensed businesses. According to the report, "If Taiwan's total number of traditional pharmacies is approximately 13,663, then the survey results suggest that 77 per cent, or 10,521 stores, deal in rhino horn."

Of the covertly monitored pharmacies, 29 per cent carried whole horns (18 per cent of them Asian), 24 per cent had pieces of horn, and 67 per cent sold powder. To calculate the total amount of horn on the island, the project executives used the conservative figure of one whole horn per shop. Plugging in average weights for African black and Asian rhino horns, the TRAFFIC Taipei team believes there may be up to 10 tonnes of rhino horn—80 per cent of it still in whole horn form. This does not include smugglers' stockpiles, carvings, and medicinal factory stockpiles. At the current retail value, 10 tonnes of rhino horn is worth more than US\$70 million.

What Has Taiwan Done so far?

Under pressure from WWF and Taiwan's Society for Wildlife and Nature (SWAN), the Board of Foreign Trade banned rhino horn imports in 1985, but the ban apparently did not deter smugglers. In 1990, the Bureau of Drug Control, part of the National Health Administration (NHA), announced that medicine manufacturers must register horn for a three-year export license extension—with no response. So according to NHA records, Taiwan produces no medicines containing rhino horn.

The 1989 Wildlife Conservation Law is a technical trade ban: traders in protected species parts or products must have governmental permission and no permission has ever been granted for trade in rhino horn. However, the ban has never been enforced.

In August 1990, the government called for a registration of rhino horn bought before the Wildlife Conservation Law was instated. But there was no penalty for *not* registering stocks. It is obvious that the 1,464.5 kilograms reported by 410 companies to authorities are only a fraction of the stockpile.

This month's workshop on Taiwan's rhino horn policy—an unprecedented meeting of Chinese medical societies, government officials, and conservationists—could mark a change in the government's effectiveness in ending the illegal rhino horn trade.

The average price of a dose of African rhino horn is US\$22. An Asian horn prescription runs US\$195. The cost mounts when you calculate how much a whole horn would be worth at retail value: US\$5,700 for African horn and a cool \$52,000 for Asian. "On average, retail prices were higher in urban areas than in the rest of the island," says the report. The highest prices were found in Taipei, Tainan in the south, and the eastern port city of Keelung.

What exactly can one buy in a retail pharmacy? According to the report, besides whole horns, you can purchase pieces of horn, pre-ground powder, and manufactured medicines from the People's Republic of China. Whole horn is the most expensive because it is the only verifiable form—the other three can be faked.

The price of rhino horn has almost quadrupled over the last decade and Chinese businessmen, who, says Nowell, have a strong speculative streak, see horn as a good investment and are stockpiling it as a commodity rather than as a medicine. According to the report, "The perceived imminent extinction of the rhino and the fact that rhino horn may be stored for a long time," boosts its investment attraction.

"Many of the stockpiles are sitting there for investment purposes," says Jorgen Thomsen, Director of TRAFFIC International. "And they are going to be put on the market very slowly or when horn reaches a peak selling price. This is speculation in the extinction of a species. The day the rhinos are gone, investors will be sitting on a goldmine."

Apparently, wholesalers also sell entire horns to wealthy Taiwanese who then have master carvers turn them into

valuable statues of the goddess Kuan-Yin or dragon-shaped incense bowls. "They are seen as very powerful, fortune-bringing heirlooms," says Nowell.

Future Outlook

The TRAFFIC Taipei report is a major step towards understanding how the rhino horn trade works—crucial to ending the destructive illegal trade. Government involvement is key, and the Council of Agriculture (COA) reviewed the report.

"The government is being very cooperative with this project," says Nowell. "Their involvement in the upcoming workshop is a major step. We want to investigate how the different agencies can cooperate to bring the market under control. While import remains prohibited—and interdiction efforts should be focused and intensified—something has got to be done to manage the stocks of rhino horn already on the island when the Wildlife Conservation Law came into effect." Officials such as Ling Shiang-Neng, Vice-Chairman of the COA, have been instrumental in the progress so far.

There has also been a new development on the law enforcement front. Up until now, on an island of 22 million people, fewer than 25 officials have been in charge of taking action against illegal rhino horn traders. The conservation authorities must rely on police units to make arrests. To make matters more complicated, the police have no clear mandate on the Wildlife Conservation Law. Nowell herself has sought police assistance in illegal sales of protected species and been shrugged off with "It's not our responsibility."

Recently, however, the wildlife authorities on the provincial level have made a major effort to recruit police officers for conservation task forces in every administrative district. While enforcing the Wildlife Conservation Law is not part of their daily routine, these officers are fully and personally responsible for carrying out joint operations with the district's wildlife authority.

How long will the WWF/TRAFFIC project continue? "As long as it takes," says Nowell. After management policy decisions are made at the workshop, the TRAFFIC team will tailor their surveys. "I foresee doing a survey every year," says Nowell, "looking for sales of unregistered horn, reporting sales to the COA to check whether sales are registered or not. We need monitoring power."

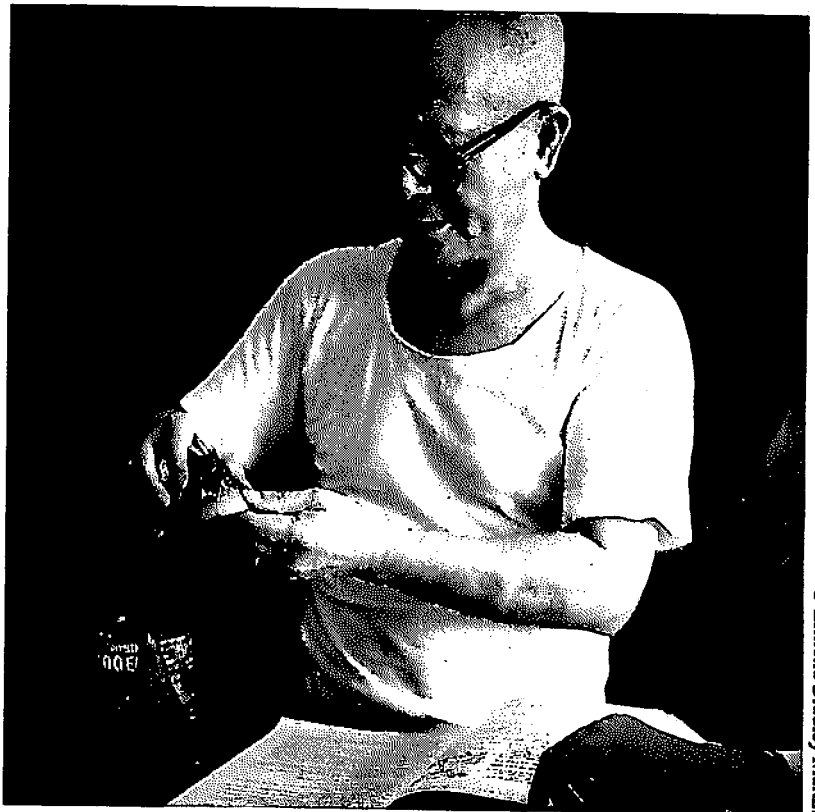
Another project priority is consumer information. "Who is buying horn and why? Doctors tell us they only prescribe horn for very serious illnesses," says Nowell, "and that to them it is a very serious, valuable drug. On the other hand, the oldest medical books—still part of today's university curriculum—mention rhino horn's value as a general health tonic."

Eradicating the trade won't be easy. "The reason it's so difficult to wipe

out is because it's so valuable. In that way it is like a drug—like cocaine—not medicine," says Nowell. And we know how successful western countries have been at winning their drug wars.—L.G.

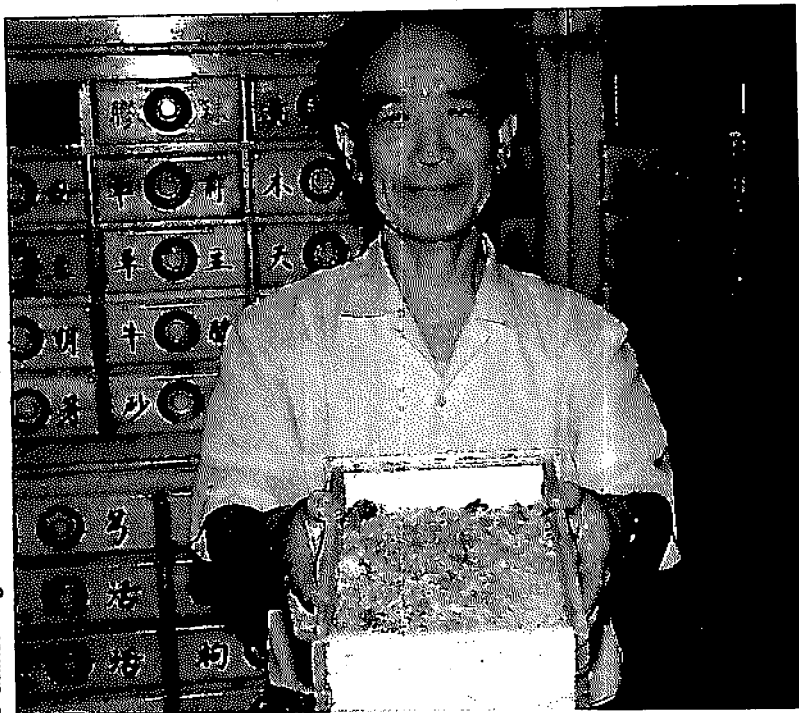
For a copy of the report The Horns of a Dilemma: The Market for Rhino Horn in Taiwan, contact TRAFFIC International, 219c Huntingdon Road, Cambridge CB3 0DL, UK.

A traditional Chinese pharmacist examines the choice "tip cut".



© Esmond Bradley Martin

Country Update



© Martin Wright

Trays of grey: A South Korean pharmacist and his rhino horn shavings

South Korea: Rollercoaster Response

Letters inundated London's South Korean embassy following the April 1991 launch of WWF's "Stop the Rhino Horn Trade" campaign. "The embassy reported back to their Ministry of Foreign Affairs in Seoul that staying outside CITES was sending the message that South Korea was not prepared to deal with control of the rhino horn trade," says TRAFFIC International Director Jorgen Thomsen. The pressure was on.

In July 1991, Minister Keun Bae Choi wrote to WWF-UK: "I am pleased to inform you that the government of the Republic of Korea is in agreement with the international movement for the protection of nature, and that the procedure to sign CITES is now under discussion among the relevant ministries, with the aim of accession later this year." Conservationists applauded the news.

To keep the momentum going, WWF-UK sent journalist Martin Wright to South Korea last September to investigate the wildlife trade. He explored the backstreets of Chegidong, the city's wholesale medicine district, posing as a student of natural medicine. He found that traditional pharmacists and doctors are not deterred by South Korea's 1986 horn import ban: "You just walk through customs with the stuff in your pockets," said one dealer.

However, Wright also felt the government wants to improve its record and join CITES, an issue that would be up for parliamentary debate in November. If it passed, South Korea would become a Party in time for the March 1992 meeting of CITES Parties. But November came and went and the embassy announced that "although they had considered joining CITES, the issue is postponed until next summer," says Thomsen. "This seems to be a scenario we've seen before."

"It's quite clear that the large-scale trade in a long list of endangered species will continue. It's very difficult to get information because the country is outside the control system," says Thomsen. To continue progress on the South Korea front, WWF and TRAFFIC are investigating posting someone in Seoul to study and monitor the situation.

China: Holding Pattern

China's rhino horn stock of 10 tonnes is perhaps more critical than Taiwan's because it is formally registered. "The supply is mainly in only 10 major medical factories," says TRAFFIC's Kristin Nowell. "If they just keep manufacturing

and selling medicines, I don't think you're going to see the demand go away at all."

"We have discussed options to deal with poaching and trade issues with members of China's scientific community," says Thomsen, "but the country is working on a lot of other conservation problems—protecting the panda for one." At the moment progress remains difficult because the authorities are not prepared to deal with the rhino horn trade.

The information that WWF and TRAFFIC collect on the Asian rhino horn trade will soon be translated into Chinese and distributed in the People's Republic of China and Taiwan.

North Korea: A Pandora's Box?

"There's no reason to believe the situation in North Korea is any different than in South Korea," says Jorgen Thomsen of TRAFFIC International.

The country's inaccessibility prevents research on the rhino horn trade there. But when Zimbabwe expelled a North Korean diplomat last month for smuggling rhino horn out of the country, it became apparent that their market needs to be looked at.

"We don't know whether North Koreans are smuggling horn for the internal market or as a barter for commodities with South Korea," says Thomsen. "But it's conceivable that the country has a thriving internal trade."

Thailand: New Legislation

The Thai parliament passed the Wildlife Conservation Act last month. Once the new law gets the King's approval, which is expected soon, Thai authorities will have the legal means to implement the CITES convention. Agriculture Ministry officials consulted Wildlife Fund Thailand—a WWF associate—and drafted the bill with CITES in mind.

Under the new legislation, all trade in endangered species—indigenous and imported—will be strictly regulated by the authorities. According to Bangkok's *Nation*, under the bill individuals who breed protected wildlife species for sale or trade animals' parts get a three-year grace period to terminate their business, or face legal action.

According to Steve Nash, Head of TRAFFIC Southeast Asia, the Wildlife Conservation Act provides for the establishment of a National Committee on the Law of Protecting Wildlife, with the Director General of the Royal Forest Department and the Fisheries Department presiding.

Species Focus: Javan Rhinos

The most endangered of the five rhino species, the elusive Javan rhino (*Rhinoceros sondaicus*) has been the subject of a WWF photographic survey. So far the cameras have exposed promising news

Survey Success

Rantau, Flat Top, and Ibu, a calf by her side, have their heads down, snuffling for food. They are three of the 28 Javan rhinos who have taken their own photographs in Mike Griffiths' WWF-funded photographic survey of the species' last viable population located in Indonesia's Ujung Kulon National Park.

Started in January 1991, the survey caused a stir at the Workshop on Indonesian Rhino Conservation, held last October in Cisuara Bogor, Indonesia, when Griffiths projected a parade of rhinos in a slide presentation.

"The results of this technique are not only accurate but provide information on the number of animals, sex ratio, conditions of animals, and even what they feed on—information on which we can base accurate management decisions," said Mohammed Khan bin Momin Khan, Chairman of IUCN's Asian Rhino Specialist Group, at the end of the workshop.

According to Kathy MacKinnon, WWF-Indonesia Programme's Senior Conservation Advisor, "One of the reasons why the survey is needed is that there has been speculation that the rhino population may be at carrying ca-

capacity in the peninsula." If the park can't hold more than its estimated 60 rhinos, MacKinnon explains, then there would be an argument for translocating a few rhinos to another reserve within their former range.

But early survey results suggest the population may still be growing. Griffiths wrote in his last interim project report: "All three female rhinos photographed so far have been accompanied by calves....this means the population is healthy and breeding well, and thus has probably not reached carrying capacity." Nevertheless, with possibly rising numbers, says IUCN's Simon Stuart, it may still be worth establishing a second population on Sumatra—former Javan rhino stomping grounds—to reduce the risk a natural catastrophe could pose to the lone group.

Tactics and technique

For the past six years Griffiths, a former oil industry marketing executive with degrees in zoology and geology, has been photographing Indonesian wildlife. "My special passion for rhinos grew out of a five-year odyssey in the mountains of northern Sumatra as I tried again and again to photograph the Sumatran rhino in its forest home. I got my first pictures in 1990. The time spent tracking an animal on the verge of extinction generated a fascination I shall never lose."

When MacKinnon saw Griffiths' Sumatran rhino photographs, she ap-

Mike Griffiths (right) and team member set up a camera trap.



© Katrina Panji/WWF Indonesia Programme

proached him about doing the survey for WWF. Griffiths jumped at the chance. "We realized that the operation could give us access to knowledge unobtainable from other survey methods," he says.

Though automatically triggered photography has been around a while, Griffiths, who started using the technique in 1982, has developed the system to withstand extended periods in the forest. "Not a small achievement when you consider the wet climate, fungus, termites, and larger animals that can wreak havoc on the equipment," says the New Zealander. Banteng, a type of wild cattle, and rhinos have knocked cameras down.

Setting up the system during three months of monsoon took a Fitzcarraldian effort. "More than a tonne of equipment was offloaded from boats and carried ashore through rough surf," says Griffiths. "To gain access to the area of park where rhinos are presumed to live, we cut our way through thick thorny rattans with a *parang* (jungle knife).

"One benefit of the rainy season is that we were never short of drinking water, but we crossed a lot of swollen rivers—we had to build rafts for some of them."

The enthusiastic project team, all Indonesians, has "learned to troubleshoot and repair equipment," says Griffiths. "Their contribution has played a very important part in the project process." Griffiths is also grateful to the support of Ir Sudarmadji, the head of Ujung Kulon National Park, and staff members such as Pak Ela Warsito and Pak Saridja.

To pinpoint camera placement, Griffiths used satellites, which take the guesswork out of jungle navigation. The system "allows me to position the cameras very close to the preplanned locations—it saves time and doubt," says Griffiths.

"The satellite navigator is based on the Global Positioning System (GPS) set up by the US military and involving more than 20 special satellites," he explains. "This

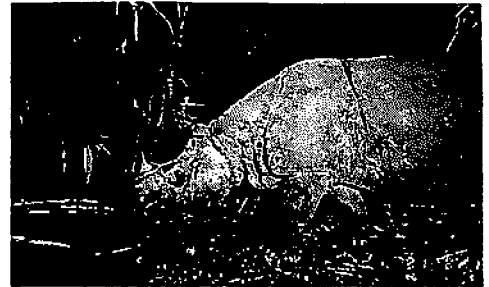
allows one to locate oneself within 10 to 20 metres anywhere in the world. The equipment itself is about the same size and weight as a pair of binoculars. As far as I am aware, this is the first time GPS has been used for this purpose."

To manoeuvre the camera equipment throughout the dense forest, Nani, Sarian, Amir, and other team members created about 61 kilometres of trails in a north-south grid. The 34 cameras are wired to pressure mats—a rigging called a "camera trap". When an animal over 15 kilograms steps on a mat, it takes a self-portrait.

The cameras are loaded with 36-exposure 35-mm film and equipped with data-backs that record the date of each photo. By September 1991, 10 rhinos were identified by the shape of their horns, size, eye wrinkles, body scars, and ear marks. The field staff check the cameras every two to three weeks and all film is changed about every six weeks.

When the date of each rhino's first photograph is plotted against the elapsed time of the project in camera days, the result is a graph with no levelling off. This means the population is at least as large as the current estimate of 60, and new animals are being photographed all the time.

The project continues through this summer and rhino experts around the world are waiting in anticipation for Griffiths' final report.—L.G.



WWF Photo Survey/1991

Candid camera: A survey photo of a Javan rhino

Ujung Kulon: Indonesian Eden

A combination of natural disaster and early conservation efforts have created a unique sanctuary. Home to the last viable population of Javan rhino, WWF and Indonesia's Directorate General of Forest Protection and Nature Conservation (PHPA) have worked hand in hand since 1965 to preserve this environmental gem. Continued protection is the key to the future of the elusive rhino

Ujung Kulon National Park—76,000 hectares on Java's western peninsula—extends from the eastern slopes of Gunung Honje to the southwestern tip of the island and includes Peucang, Handeuleum, and Panaitan islands. Earmarked as a nature reserve by the Dutch colonial government in 1921, Ujung Kulon became a national park in 1980. PHPA takes its role as the peninsula's guardian seriously: since 1965 the department has tightened protection of the park and its rhinos with funds and governmental support.

Scenes from Ujung Kulon

Occasional deer emerge onto the feeding grounds or stray onto the beach, and courtly peacocks and green junglefowl strut in close-cropped pastures.

Streams wind and tumble down from the slopes of Gunung Payung to the sea. A trip up the Cigenter River by canoe is an enjoyable pastime, gliding quietly over the gently flowing waters, winding among the nipa palms and tree-fringed forests.

One might see a python wound round an overhanging branch or a lazing young monitor lizard enjoying the morning sun. A splash, a ripple, and a crocodile sinks from view. These rivers are favorite wallows for the elusive rhinos, though one rarely sees more than a three-toed footprint or mud-slide to mark the passing of the great beasts.—Kathy MacKinnon, reprinted from *Voice of Nature*

When Krakatau, east of Java, shook the world in 1883, it triggered 15-metre-high tidal waves that killed more than 36,000 people and wiped out entire villages on the coast of Ujung Kulon Peninsula.

The walls of water caused by the volcanic explosion resulted in a second chance for Indonesian wilderness. Today, about 40 per cent of the park is still covered with primary forest—a miracle with Jakarta, 100-million-people-strong, only 150 kilometres away. The spiny rattans that spike the forest help keep the area inaccessible to human encroachment. "People have the misconception that it's a paradise but the guards have a tough time getting through these areas," says Charles Santiapillai, a WWF Senior Scientific Officer.

But what is an obstacle for hard-working guards is a boon for wildlife. One of the last two known populations of Javan rhinos clings to existence here. The estimated 60 animals browse on the tangled undergrowth that thrives on abandoned ricefields and forest clearings. The park is also a sanctuary for threatened banteng (*Bos javanicus*), Javan gibbons (*Hylobates moloch*), and hairy-nosed otters (*Lutra sumatrana*). Common monitor lizards (*Varanus salvator*), pythons (*Python reticulatus*), and estuarine crocodiles (*Crocodylus porosus*) bask in the sun and lurk in dark places. And the

shrieks and singing of at least 233 bird species fill the forest.

The elusive, yet high-profile, Javan rhino could be the savior of the entire ecosystem. "If you save the rhino you save everything else in the park," says Mike Griffiths, a WWF project executant.

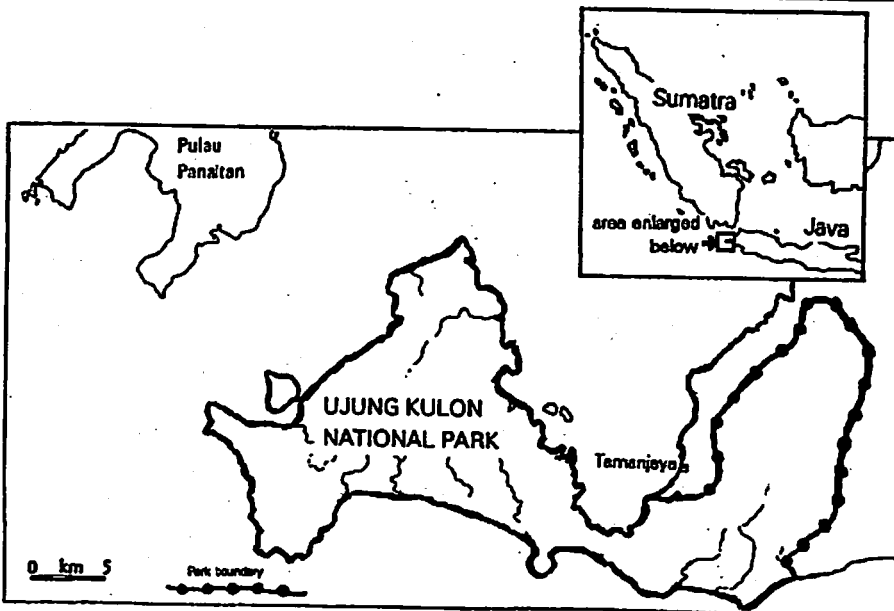
Park Guardians

Until Griffiths began his photographic survey of Javan rhinos last year, rhino population counts were done by tracking. Widodo Sukohadi Ramono, PHPA's Director of Species Conservation, or WWF Senior Conservation Advisor Kathy MacKinnon would trek through the swampy, thorny interior with park guards looking for rhino tracks, droppings, even a tell-tale trace of mud smeared on a tree by a passing rhino.

Once the high-tech survey is completed, this on-the-ground monitoring will continue. About 70 guards work in the park, and a number of them do it because they believe in Ujung Kulon. "They are really keen," says Santiapillai "and don't work for the salary—they

could earn more as construction workers. Old hands impart enthusiasm to the newer guards, and they are essential to park protection." With 100 million people on Java, if it weren't for PHPA and the team of guards, Ujung Kulon would be overrun by now.

To finance park upkeep and protection, Ujung Kulon is developing an eco-tourism programme. About 3,000 people visit the white-sand beaches and dense lowland forests each year. The park headquarters, located in Taman Jaya, east of the isthmus that connects Ujung Kulon to Java, issues visitor permits and books accommodation.—L.G.



Mystery Herd:

On the trail of Vietnam's Javan rhinos

For years there had been rumours of Javan rhinos living in the vicinity of the Dong Nai River in Southern Vietnam's Lam Dong Province—about 250 kilometres from Ho Chi Minh City. Hunters and soldiers reported encounters with the animals. But without hard proof, the news was not taken seriously.

Then in 1988, a forestry official found the skeleton of a Javan rhino that had been killed by a Stieng tribesman in the Cat Tien district of Lam Dong Province. The prize find now stands in the Ministry of Forestry in Hanoi.

Rhino specialists all over the world sat up at the news. Here was proof that despite extensive bombing during the war, Javan rhinos have managed to maintain a toe-hold in Vietnam. Since then there have been many reports of rhino footprints in the area.

A 1990 study led by George Schaller showed evidence of rhinos in the area. Then last March, Pham Mong Giao and Vu Van Dung surveyed the rhino area in Lam Dong province and estimated that 8 to 12 animals may be living in an area of 35,000 hectares (roughly the size of Ujung Kulon National Park in Indonesia where the only other known population of Javan rhino occurs).

Some say that genetic degeneration will automatically eliminate this small population. However, history proves that limited gene pools are not necessarily doomed. From the Javan rhinos in Ujung Kulon, we know the animals respond well to a "sanctuary strategy". The effects of inbreeding depression are real but can be minimized if numbers recover

quickly from bottlenecks.

A good example of recovery: The population of greater one-horned Indian rhinoceros (*Rhinoceros unicornis*) increased in number from a dozen or so in 1908 to more than 1,200 at present.

The principal threat facing Javan rhinos in Vietnam is poaching. With careful protection and a secure habitat, Vietnam's rhinos can become a viable population. Vietnamese authorities consider *in situ* conservation of Javan rhinos a priority and plan to carry out surveys of adjoining areas to identify other possible populations.

The rhinos also face habitat loss: They live in an area rich in commercially important timber. Vietnam's selective logging itself is not a threat, in fact it creates ideal conditions for the herbivorous animal. But the industry opens up the area to settlers and poachers.

Indigenous tribes in rhino country practice slash-and-burn agriculture. During the dry season farmers' field flames can easily turn into deadly forest fires.

WWF has developed a comprehensive project to establish a rhino sanctuary and manage and monitor the endangered animals. Funds are urgently needed to make the project a reality. Estimated cost: US\$256,000.

Rhino News

Reduced Rhino Repasts

Could a change in habitat be affecting the population of black rhinos in Hluhluwe Game Reserve in Natal, South Africa? A new study shows that plant battles may affect the area's supply of rhino food.

In 1960 there were thought to be 300 black rhinos in Hluhluwe. By 1985 the number was down to 85. Though the population is currently stable, the Southern African Nature Foundation (WWF-South Africa), together with the Natal Parks Board, the Endangered Wildlife Trust, and other South African non-governmental organizations funded the study to identify the cause of the problem.

What do black rhinos like to eat? Richard Emslie, the study's chief researcher, pinpointed young acacia trees as a favourite food. Knowing the rhinos' snack of choice helps park authorities improve management techniques. In 1985 Hluhluwe had three times fewer saplings of the yellow-flowered tree than in 1970. "As acacia trees die they are replaced by less-preferred broadleaved species," says Ian Macdonald, WWF-South Africa's Director of Conservation.

In neighbouring Umfolozi Game Reserve, part of the same protected area, the density of acacia saplings is growing and the black rhino population is also on the rise.

Emslie also suspects grass is responsible for the food shortage. "Grass interference has a major effect on the suitability of rhino habitat," he says.

Good news for rhinos: an Emslie-designed computer programme tailored for rhino population estimation hits the market soon.—**Sandie Mbanefo**

White Rhino Champion



© WWF/Sandie Mbanefo

Zaire's Garamba National Park is the home of the last wild population of northern white rhinos. When Muhindo Mesi (pictured here on the right) became Conservateur Principal of the park eight years ago, there were only 15 animals left. Today the population is up to 32.

Muhindo's management style is credited with the conservation success and he is profiled in *Muhindo Mesi and the Northern White Rhino*, part of Channel Four and Yorkshire Television's recent series, *Defenders of the Wild*. The UK production follows Mesi on park patrol, putting his guards through para-military training, talking with supportive locals.

On the poaching front, Mesi can proudly say he has not "come across any traces of rhino poaching since 1983". Dealing with the "production" end of the rhino horn trade, does he think closing the market is an effective way of stopping poaching? "Definitely. If the markets are closed, people can no longer make a living selling horn. You can see the results with ivory."

Channel 4 aired the film in January and plans a second showing later this year.—**LG and SM**

Singapore Seizure

Last December, Changi Airport customs officer Kang Swee Wan followed a hunch and ended up finding 10 rhinoceros horns worth about US\$100,000.

It was the first rhino horn seizure since Singapore joined CITES in 1986. Kang found the horns buried under incense wood chips imported from Indonesia by a local trading company. According to the *Straits Times*, the van driver transporting the horns gave Kang a box to examine, but the customs officer chose the crate with the smuggled goods. "When I took out the first horn, the driver told me it was wood of a different grade," Kang told the newspaper. The horns were positively identified by the Primary Production Department, Singapore's CITES Management Authority, as probably Javan or Sumatran.

Class Menagerie

A zebu, giraffe, and some mongooses parade across the stage. The Johannesburg-based Theatre for Africa turn skilled animal mimicry into high art.

In honour of His Royal Highness The Duke of Edinburgh, International President of WWF, the award-winning environmental theatre group performed *Horn of Sorrow*, at WWF's annual conference in Montreux last December.

About black rhino poaching in South Africa, the play illustrates the central issues of the "Stop the Rhino Horn Trade" campaign. "There are only 800 black rhinos left in South Africa and poaching still continues," says playwright Nicholas Ellenbogen.

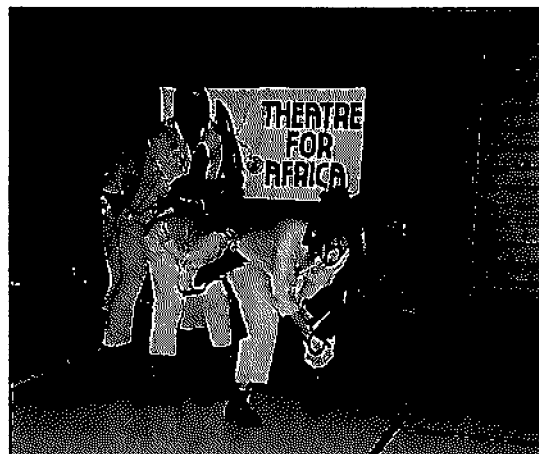
Part traditional African dance, part Disney's *Jungle Book*—the eloquent vulture narrator in *Horn of Sorrow* could be a cartoon escapee—the troupe entertains and educates the audience at the same time.

"Each member spends time in the bush," says Ellenbogen, "observing the animals they will portray." The barrel-chested, flaming-haired African took the two newest members to Natal's Umfolozi Game Reserve himself. For one week Philippa de Villiers and Bongani Zindela watched black rhinos in the wild. Now, without costumes or special effects, their heavy rhino trot makes you believe a 2,500-kilo animal is on stage.

Founded by Ellenbogen, who is also artistic director, in 1990, the company has already made a mark on the international theatre world, racking up a *Scotsman* Fringe first at the Edinburgh International Festival of the Arts, and a AA Vita Award, South Africa's Oscar, for Best New Script (*Horn of Sorrow*).

This month Theatre for Africa is working on a feature film of their 1990

Christmas production, *A Nativity*. Then in March they take their environmental message to Japan and Kenya.



Dubai Puts the Rhino Horn Trade on the Funeral Pyre

Last month the sheikdom of Dubai burned more than 12 tonnes of ivory and rhino horn in a gesture of compliance with the United Nations' 1975 trade ban on rhino horn and its 1989 ban on trade in ivory.

The Dubai government paid more than US\$2 million to the Singapore-owned factory that held the stocks. The factory claims it bought the illegal goods before the ban was imposed.

Rhino Conservation for Kids

John Hare's *Rhino's Horn*, tells the tale of Rhino and his close brush with man, who wants his horn for "magic medicine." Eva Gunderson's bright illustrations and Hare's simple words teach children the rhino horn trade basics. Published by UK-based Hodder & Stoughton in conjunction with Rhino Rescue, the book is part of the Headway series. The line also includes *Leopard's Coat* and *Elephant's Tusk*, endorsed by WWF.—L.G.



Above: Nicholas Ellenbogen
Right: Siph Mofokeng, Bongani Zindela, and Philippa de Villiers make rhino love as Li Newman and Esmael Teixeira look on.

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Rhino Horn Alternatives: A Matter of Tradition or Money?

When Dr Paul Pui-Hay But of the University of Hong Kong's Chinese Medicinal Material Research Centre tested rhino horn in 1990 and found that it really does reduce fevers, it shattered western medicine's claim that the 2,000-year-old prescription was the same as "biting one's fingernails".

At the same time, But's results strengthened WWF's campaign goal of promoting alternatives: saiga antelope, water buffalo, and cattle horn are all also antipyretics.

Getting users of traditional Chinese medicines to switch to other substances is not like changing detergent brands. "The ingestion of these perhaps semi-magical substances has deep significance for the Chinese," says TRAFFIC Taipei Acting Director Kristin Nowell. The symbolism and meaning of rhino horn is almost more important to its users than its scientifically proven properties.

However, Nowell's research on the rhino horn trade in Taiwan has revealed an even larger obstacle to widespread use of alternatives: money. According to Nowell, "Doctors sell medicine. Pharmacists sell medicine. It's basically in their interests to sell the most expensive medicine they can." Is there any hope of eventual acceptance of rhino horn substitutes? "I don't think we can convince the medical community itself to prescribe them," says Nowell. "We should aim public education at consumers rather than trying to convince the doctors or pharmacists. They are businessmen."

Chen Ching-Hwei, a well-known Taiwanese doctor, recently said in his monthly column in *Chang Shun*, a popular magazine aimed at teenagers, that many doctors consider rhino horn "irreplaceable".

Referring to Mainland China studies that approve water buffalo horn as a rhino horn alternative, Chen wrote,

"People in Mainland China involve themselves in more strenuous activity and eat rougher foods than the people of Taiwan, who are accustomed to refined, processed foods and a more sedentary lifestyle. Therefore, in serious cases, it is doubtful that we could absorb the rougher medicine." This argument appeals to prestige-conscious Taiwanese who are "more than ever able to afford rhino horn", according to the TRAFFIC report *The Horns of a Dilemma: The Market for Rhino Horn in Taiwan*.

From Buffalos to Banyan Trees

As cited in But's study, water buffalo horn is a cheap and plentiful alternative to rhino horn when taken in larger doses. But a TRAFFIC Taipei survey of pharmacies in Taiwan found that plants are also possible substitutes. Doctors and pharmacists suggested *Chrysanthemum morifolium*, *Odontochilus inabai*, *Coptis chinensis*, sugar of the white gourd, and the aerial roots of the banyan tree.

Dr Tam Ling-Kwan, president of Hong Kong's Sin Hua Herbalists' and Herb Dealers' Promotion Society, says that herbs are also horn substitutes.

Many Taiwanese pharmacists also told TRAFFIC surveyors that the best alternative was an antipyretic injection at a Western hospital.

Saiga Antelope: A Future Alternative?

The Chinese have long used saiga antelope horn as a medicinal ingredient. Poaching for horn export to China caused the animal's near-extinction in the 1930s. Today, saiga horn is the most expensive traditional antipyretic after rhino horn, making it the most popular alternative. As a result, the saiga antelope is again threatened. So although Dr But's study proves saiga horn is an effective alternative, WWF believes it is currently not a *viable* alternative.

In October 1991, on behalf of IUCN's Species Survival Commission, Dr James Teer and three Russian scientists, Dr Valery Neronov, Dr Lir Zirnov, and Dr Anatoly Maksimuk, did a field survey of saiga antelope in Kalmykia, an autonomous republic northwest of the Caspian Sea. According to their final report, the "poaching and the illegal trade in horns is probably the most serious source of loss of saiga numbers at the present time".

Kazakhstan, 800 kilometres north of Iran, has the largest population—about 650,000 animals. Some 150,000

roam the steppe regions of Kalmykia, northwest of the Caspian Sea. The 2,000 saiga of Mongolia are the most endangered. The numbers may sound high, but they are down from a 1950s figure of almost three million animals.

A recent reversal in the species' fortune: the government has declared it a natural resource and banned hunting until 1996, thanks partly to recommendations by Teer and his Russian colleagues.

A kilo of saiga horn—typically consisting of three pairs of horns—now sells for up to US\$2,000 in Hong Kong. The peasant in the steppes gets only US\$30 per kilo from traders, but with the current state of their economy, it's a profitable sum. Traders, organized in networks in rural areas, smuggle the goods across the Kazakhstan border to China, or transship them via the Baltic states, apparently clearing customs with ease, to Hong Kong.

Though the saiga's current status prevents it from being a viable alternative to rhino horn, "Theoretically," says IUCN's Simon Stuart, "if the Russians and the Kazakhs sort out their management of saiga and build the populations up again, then saiga antelope horn could be encouraged as a substitute. A species like that can recover fast, certainly in 10 to 20 years. With the rhino, it's a long, slow plod." A high birth rate—1.6 young per female per year—makes the saiga resilient to over-hunting and the heavy toll taken by severe winters.

One imponderable in the conservation of the saiga antelope is the political situation in the former Soviet Union. Serious instability or worse, the much-prophesied descent into chaos, could jeopardize the animal's chances of survival.—Christopher Mikton



A. Bannikov

What exactly is a saiga antelope?

Measuring about 130 centimetres at the shoulder and weighing about 40 kilograms, the homely saiga antelope's most striking feature is a large proboscis. Russian scientists think its big nose senses humid air streams coming from forage and water. A migratory herd animal, it lives in semi-desert areas of Russia.

Conservation strategy. According to Russian scientists, saiga can reproduce in captivity. Technology to ranch saiga antelope in large enclosures that can hold 20,000 animals is being developed. Neronov and his team are setting up two "study ranches", one in central Kalmykia and another in Daghestan, on the western shore of the Caspian Sea. Started last year, the ranches will be completed by 1995.

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