



WWF

1994 WWF Species Status Report

**WANTED
ALIVE!**

Rhinos in the Wild



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by Elizabeth Kemf and Peter Jackson

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1994 – A WWF Species STATUS REPORT

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Stare into the face of a rhinoceros and you discover 60 million years of evolution. This prehistoric-looking creature which wallows in the swamps of southeast Asia, India, and Nepal, and wanders in woodlands and savannah south of the Sahara, and whose ancestors lived in Europe and North America, is one of the planet's most tenacious survivors. Black rhinos have even adapted to the desert environment of northwestern Namibia. Yet, in less than a quarter of a century, humans have driven this remnant of the world's mysterious ages to the edge of extinction. Now, fewer than 12,000 wild rhinos survive in Asia and Africa. One species has been almost extinguished. In the short fraction of time between 1970 and 1994, some 95 per cent of Africa's black rhinos were wiped out. By 1993, there were only 2,550 black rhinos left.

Hundreds of species of rhinos once roamed the earth, but only five exist today. All of them are threatened, and some are in grave danger. These five species are Africa's black rhinoceros *Diceros bicornis*, the white rhinoceros, *Ceratotherium simum*, Asia's Javan *Rhinoceros sondaicus*, the Sumatran, *Dicerorhinus sumatrensis*, and the greater one-horned *rhinoceros unicornis*.

While this unprecedented loss of rhinos was due in part to land conversion and habitat destruction, the major cause of death was driven by the demand for the rhino's horn and other parts for use in traditional Chinese medicine and in North Yemen for use as decorative dagger handles. At the height of the massacre in the 1970s and early 1980s, six Asian countries — China, North Yemen, Taiwan, Hong Kong, Japan and South Korea — were buying up most of the rhino horn. China holds by far the biggest recorded stockpile of rhino horn in the world, weighing over four tonnes. During the 1970s alone, 50 per cent of the world's remaining rhinos disappeared.

Asia's most endangered rhino species is the Javan, which lives secretively in dense forests in Indonesia's heavily guarded Ujung Kulon National Park and in Vietnam's Nam

Bai Cat Tien National Park, where tighter security is needed, and where logging and agricultural conversion must be stopped. The Sumatran rhino, whose last stronghold is in Indonesia and Malaysia, is under constant threat from poachers.

When WWF was founded in 1961, it established a campaign theme that has run through its conservation programmes to this day: save the rhino from extinction. In October 1961, the London *Daily Mirror* published a "Shock Issue" for the launch of WWF, featuring a black rhino as an example of an animal which requires urgent action to save it from vanishing from the face of the earth. WWF is the only organization to tackle conservation of the species on every

front — from trying to halt uncontrolled hunting and the illegal trade in rhino horn, and other parts, to stepping up protection and support for new and existing protected areas and rhino reserves. WWF has also funded capture and translocation of rhinos to secure areas and experimental dehorning. In addition, it is evaluating the benefits of dehorning both in terms of anti-poaching and

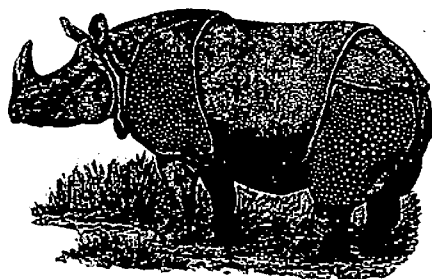
biological effects on the animal. Community-based projects in areas where rhinos live have also been initiated with promising success in Nepal, Indonesia, and Namibia.

Between 1961 and 1994 WWF channelled about US\$13 million to direct and indirect rhino-related conservation projects in Africa and Asia, including pioneering investigative research such as rhino horn trade monitoring. In later years, this undercover work has been carried out through support for the WWF/IUCN TRAFFIC Network.

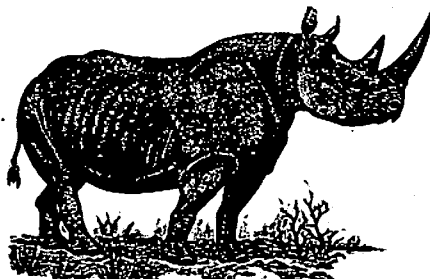
Because of the urgent actions often needed, WWF has set up an Africa emergency fund for rhino conservation. This fund allows WWF to respond quickly to help government agencies, park officials, law enforcement officials or scouts to meet critical rhino conservation needs.

Catastrophes, such as war, occupancy of protected areas by insurgents, disease, flooding, and drought, have over the years seriously affected the livelihoods of human popula-

Saving 60 million years of evolution



Indian rhino



Black rhino



Javan rhino

tions in some areas. These events have also severely set back conservation efforts. But WWF has remained on the front lines of the environmental movement in an attempt to prevent species like the rhino disappearing from the planet.

Although the rhino has vanished in the wild from many African and Asian countries, its numbers have increased in recent years in Kenya, South Africa, Namibia, India, and Nepal, and stabilized in Zaïre, thanks to these governments' and WWF's long-standing dedication.

In spite of intensive anti-poaching efforts and clamp-downs on illegal wildlife dealers, recent TRAFFIC investigations reveal that traditional Oriental medicine made from rhino horn is still being sold illegally worldwide. The main users are in China, Singapore, Malaysia, Taiwan, South Korea, and Hong Kong, and wherever Chinese communities live, including the USA and Europe. In 1994, undercover research in the United Kingdom and the USA exposed the sale of illegal products claiming to contain rhino horn. According to TRAFFIC International, from 1988 to 1992, 100,000 items of rhino products were recorded in trade, virtually all of which were exported from China. Most of these products are made from the horns of African rhinos. During 1992-93, South African police seized 128 white rhino horns.

In late 1993, a team of TRAFFIC investigators found that the consumption of rhino horn in South Korea could be as high as 300kg per year, which would account for the deaths of more than 100 African rhinos. Just months before the investigation began, South Korea had acceded to the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and it renewed steps to enforce a 1983 national law which calls for an import ban on rhino horn and its derivatives.

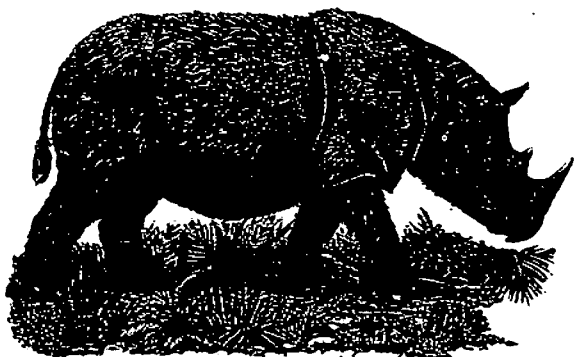
Bowing to international pressure by some CITES member states and non-governmental groups including WWF, China (1993) and Taiwan (1989) also banned the sale of rhino horn and its use in traditional medicine. In 1990, Taiwan required registration of privately held rhino horn stock.

but as of October 1994 there were still no penalties for failure to register. In August of this year, 12 rhino horns, allegedly imported from Malaysia in March 1994, were seized in Taiwan. In an unprecedented and controversial move, the USA in August 1994 imposed (under the Pelly Amendment) wildlife trade sanctions on Taiwan for its failure to enforce measures against the illegal rhino horn trade. WWF and TRAFFIC are continuing to monitor current enforcement and effectiveness of the trade bans and are seeking replacement remedies for rhino horn which are similar to, or based on, traditional Chinese medicine.

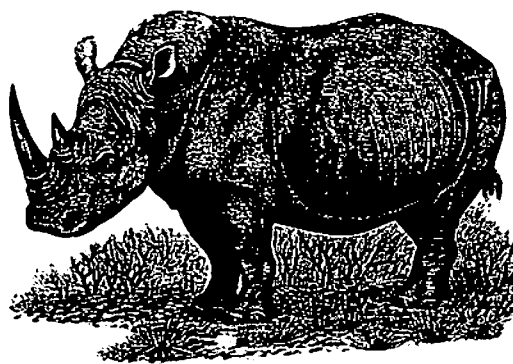
African and Asian governments have incurred substantial costs in attempting to save their rhinos, but the forces which drive poaching — poverty, corruption, mismanagement, deeply held traditional beliefs, and greed — have combined to become some of the most powerful and ruthless ever launched against a wild species.

Urgent steps must be taken to curb the rhino horn trade at the national and international level. Anti-poaching efforts must be strengthened wherever rhinos live, habitat needs to be protected from fragmentation and degradation, governments need to clamp down on corruption and improve management, and technical expertise must be exchanged between range states.

Communities living in, or near, protected areas where rhinos survive should be encouraged to be involved in their management and reap benefits from their existence. Above all, the link between the illegal trade in rhino horn medicine and the disastrous effect it is having on the world's endangered rhinos must be made clear through culturally sensitive publicity campaigns, particularly in consuming countries. These campaigns must recognize sociological, economic, and political conditions as well as health practices and traditions which date back thousands of years. Only if we reach, indeed touch the hearts, of people who have used the rhino as a source of healing for centuries and convince them to conserve this animal, can we save the creature which has been on the planet for tens of millions of years.



Sumatran rhino



White rhino

DRAWINGS: WWF/HELMUT DOLLER

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*he rhino
in history
and culture*

In the middle of the 17th century, a man digging in a field in south-east England unearthed some strange bones. Word spread that the remains of a "sea monster" had been found. They were later identified as part of the skeleton of a prehistoric rhinoceros, which had roamed the forested hills and swamps of Britain.

Contrary to popular belief, the rhinoceros originally existed in Europe, as well as in Africa and Asia. Powder from the rhino horn was widely used in European and traditional Chinese medicine. It was also used to make elaborate ceremonial cups in China and India; rhino skin was used for shields in India and as armour in China; its blood served as human tonic and its urine as medicine in India and Nepal.

Yet, in spite of its wide usage around the world, when Europeans penetrated Asia and Africa in recent times, rhinos were still common throughout most of their traditional ranges. The greater one-horned rhino was found as far west as the Khyber Pass, which links the Indian subcontinent with Afghanistan, and along the floodplain at the foot of the Himalayas to Assam, 2,000 km to the east.

Javan and Sumatran rhinos ranged from eastern India through south-east Asia to the islands which bear their names. While the Javan rhino inhabited the lowlands, the Sumatran rhino preferred hilly terrain.

In Africa, the white and black rhinos shared the woodlands and savannahs south of the Sahara. But, in modern times, the white rhino has existed in separate populations, recognized as distinct sub-species, in southern Africa, and from northern Zaïre, through the Central African Republic, Sudan, and Uganda to the Nile. The two species must have numbered hundreds of thousands.

Like other wildlife, rhinos were exploited by people, for meat and particularly for their horns. Unlike the horns of cat-

tle, goats, sheep, deer, and antelopes, which grow from the skull and have bony cores, rhino horn is formed of keratin and gelatin, which grow from the skin of the nose in an agglutinated mass mounted on a corrugated mound of nasal bone. If cut off the horns grow again.

Evolution of the Rhino

Five species of rhino exist today – the white (or square-lipped) and black (or hooked lip) rhinos in Africa, each with two horns, and Sumatran (hairy and two-horned), and the greater (Indian) one-horned and lesser one-horned, or Javan, rhinos in Asia. All still have a prehistoric look with their great bulk, rugged features and their distinctive prominent horns. But their ancestor, who lived 50 million years ago in the Oligocene, looked more like a miniature horse and had a flat, hornless head.

The first traces of horned rhinos were found in North America, where they lived between 25 and 40 million years

Rhino horn daggers are still in great demand in Yemen: They are considered to be the most attractive and valuable of all handles.



WAFER BONDING BRADLEY MARTIN

ago. In later periods, horned species were found in Eurasia, some with two horns placed side by side, and others with single or multiple horns in a variety of shapes.

The Sumatran rhino, the smallest of today's rhinos, is considered a descendent of the prehistoric woolly rhinoceros, depicted in Stone Age cave drawings in Europe and of which complete carcasses have been found in Siberian permafrost.

Relatives of the woolly rhinoceros are believed to have moved into Africa and evolved into the two present species. The white rhinoceros is not white in colour: the name is probably a corruption of the Dutch "wijd" for "wide", which describes its lips. Weighing up to 3.5 tonnes, the white rhino is second only to the African bush elephant in the scale of land mammals. It is a grazer and lives in social groups. The black (actually grey) rhinoceros has a prehensile upper lip, which serves like a miniature elephant trunk when the rhino browses on bushes. Like the rhinos in Asia it is solitary.

Recent History of Rhinos

In 1970, black rhinos may have numbered 65,000 in sub-Saharan Africa, the most numerous of all five rhino species. When the first scientific population estimate was made in 1980, the number was put at 14,000-15,000. By the time of the last overall estimate in 1993, there were only 2,550. No black rhinos probably survive in Central African Republic, Chad, Ethiopia, Somalia, Sudan, and Uganda, while Angola, Cameroon, Mozambique, Rwanda, Tanzania, and Zambia are near to losing their last rhinos.

The story of the white rhino, however, shows that dedicated efforts can be successful in saving a species from the brink of extinction. Feared extinct by the 1890s, the rediscovery of some Southern white rhinos in the Hluhluwe area of Natal in South Africa was followed by intensive conservation

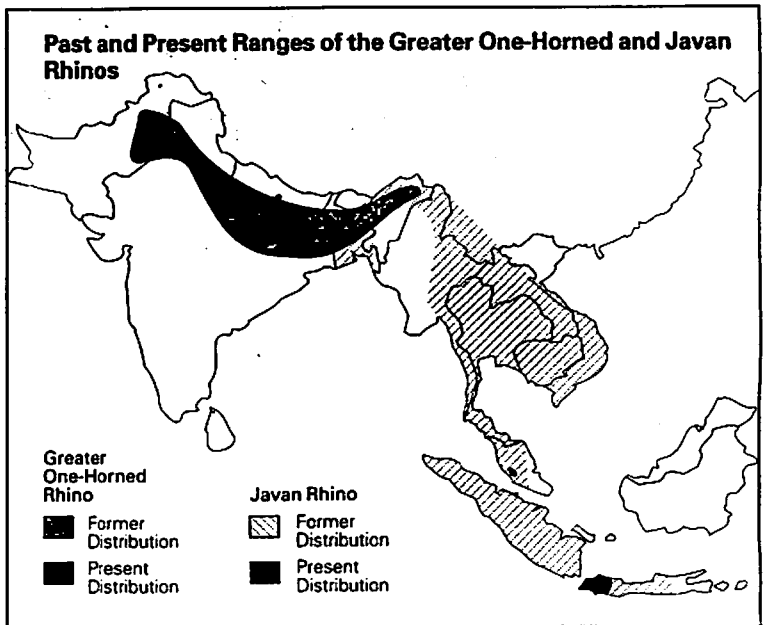
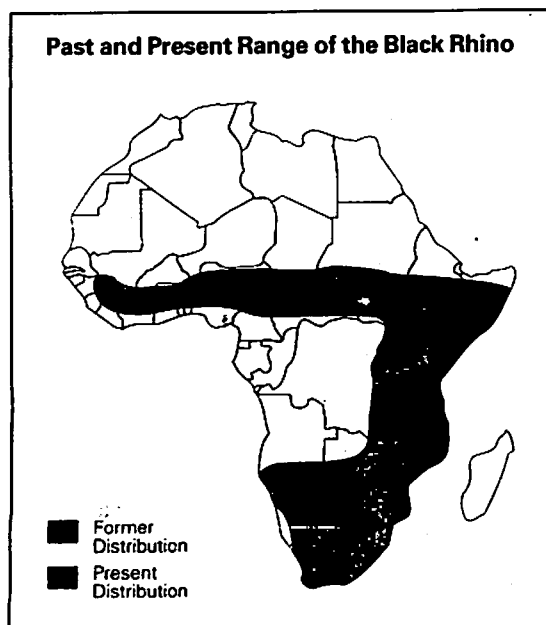
efforts, resulting in a present-day African population of 6,752, over 94% of which are in South Africa. The northern white rhino, estimated to number about 1,000 in 1980, was reduced to 15 animals, confined to Zaïre's Garamba National Park. Today the northern white rhino number has more than doubled thanks to a major effort by WWF.

Early in this century, it was said that only a dozen greater one-horned rhinos survived in Kaziranga, in north-eastern India. Kaziranga was protected from 1908 and, despite fluctuations in early years, the population grew to its present 1,200. Rhinos also survive in other reserves, notably Manas, Orang, and Jaldapara. However, poaching is still a problem. In 1986, rhinos from Assam were translocated to Dudhwa National Park near India's border with south-western Nepal.

In Nepal, greater one-horned rhinos were numerous in the swampy regions of the terai near the Indian border, but as land reclamation became possible after the Second World War, many rhinos were killed, leaving only 80 to 100 rhinos in the Chitwan valley in 1968, where a national park was established in 1973. Poaching was brought under control, and under army guard the rhinos have increased to over 450.

Records of Sumatran and Javan rhinos are poor because both live secretively in dense forests, where they are seldom sighted. Widespread slaughter for their horn, as well as fragmentation of their habitat, reduced the Javan to fewer than 30 in Ujung Kulon after the end of World War II.

By mid century, Sumatran rhinos were scattered. Between 425 and 800 were estimated to be in Sumatra in the early 1980s, with lesser numbers in peninsular Malaysia, and Sabah, Sarawak, and Kalimantan in Borneo. Poaching has continued and the Sumatran rhino population is now thought to total 450-800 overall (the broad range of figures reflects the difficulty of counting these discreet forest dwellers).



Source: International Wildlife Trade: Whose Business Is It?, Sarah Fitzgerald, WWF

Current status of white and black rhinos in the wild

AFRICA

Country	White rhino		Black rhino			
	<i>simum</i>	<i>cottoni</i>	<i>bicornis</i>	<i>longipes</i>	<i>michaeli</i>	<i>minor</i>
Ango			5*			5*
Botswana	18*					4
Cameroon				27*		
Ethiopia					5*	
Kenya	87				417	
Malawi						2
Mozambique						45*
Namibia	98		583			
Rwanda					10*	
South Africa	6,375		23		34	840
Swaziland	33					4
Tanzania					26	106*
Zaire		32				
Zambia	6					33*
Zimbabwe	134					381
Totals	6,752	32	611	27	492	1,420
		6,784				2,550

* >70% guesstimate

White rhinoceros: *Ceratotherium simum*

Weight of adult male <3,600 kg.

Range: Subspecies *C.s. simum* (southern white rhino) originally throughout southern Africa; now mainly South Africa. Subspecies *C.s. cottoni* (northern white rhino) originally in adjoining areas of Central African Republic, northern Zaire, Chad, Sudan, and Uganda; now confined to Garamba National Park in north-eastern Zaire.

Black rhinoceros: *Diceros bicornis*

Weight of adult male <1,300 kg.

Range: Originally savannah Africa south of the Sahara. Four subspecies: *D.b. bicornis*, *D.b. longipes*, *D.b. michaeli* and *D.b. minor*.

Source: IUCN African Rhino Specialist Group, August 1994

Current status of white and black rhinos in the wild

ASIA

Country	Greater one-horned rhino	Javan rhino	Sumatran rhino
India	1,516		
Indonesia		60	300-600
Malaysia			150-200
Nepal	488		
Vietnam		<15	
Totals	2,004	<75	450-800

Greater one-horned (Indian) rhinoceros: *Rhinoceros unicornis*

Weight of adult male <2,100 kg.

Range: originally flood plains below Himalayas from Khyber Pass to Assam; now principally Kaziranga National Park in Assam and Royal Chitwan National Park in Nepal; plus some scattered groups in Assam and northern West Bengal; and small, recently-translocated populations in Dudhwa National Park in India and Royal Bardia Wildlife Reserve in Nepal.

Javan (lesser one-horned) rhinoceros: *Rhinoceros sondaicus*

Weight of adult male <1,900 kg.

Range: originally from eastern India, through Burma and south-east Asia to Vietnam and on the Indonesian islands of Sumatra and Java; now confined to Ujung Kulon National Park in western Java, with small numbers recently located in southern Vietnam and the perhaps some in Laos and Cambodia.

Sumatran rhinoceros: *Dicerorhinus sumatrensis*

Weight of adult male <850 kg.

Range: originally from eastern India through Burma and south-east Asia to Vietnam and the Indonesian islands of Sumatra, Java and Borneo; now mainly in Sumatra (Indonesia), with scattered populations in Kalimantan (Indonesian Borneo), Malaysia (Peninsular, Sarawak and Sabah), Thailand and Burma.

Source: IUCN Asian Rhino Specialist Group, May 1994, and the Government of Nepal.



Dr Esmond Bradley Martin with a black rhino in Kenya.

and Namibia, and stabilized in Kenya at greatly reduced levels. African governments have incurred substantial costs in attempting to save their rhinos, but the forces which drive poaching — poverty, corruption, mismanagement, traditional beliefs, and greed — defy some of the most dedicated efforts.

In the late 1970s, against these odds, it has been difficult to define success. In an attempt to hold off the poaching wave ravaging Zambia's Luangwa Valley, home of 3,000-4,000 rhinos as well as thousands of elephants, WWF provided SFr 839,464 to the Zambian Save the Rhino Trust, an independent entity established to receive external funds. WWF's contribution represented 40 per cent of the Trust's income between 1980 and 1984. The measurable achievement — nearly 1,000 poachers were arrested, tonnes of ivory and rhino horns recovered, and hundreds of firearms confiscated — still fell short of the goal of saving the rhino population: the poachers ultimately claimed over 90 per cent of Luangwa's rhinos between 1980 and 1986.

Rhinos Fare Better in Asia

In Asia, at least for the moment, WWF support for government programmes in Nepal, India, and Malaysia has been very successful. Rhinos have increased in number in Nepal's Royal Chitwan National Park and Kaziranga National Park and a number of other protected areas in India, while the Javan rhino population in Indonesia has grown since the late 1960s. The decline of the Sumatran rhino has slowed.

Until the recent discovery of Javan rhinos in Vietnam, it was thought that the only surviving population was on the Ujung Kulon peninsula of western Java. The rhino population was estimated at between 21 and 28 in 1967 as the pro-

ject got under way with WWF providing equipment for the Indonesian authorities, and supporting the work of Swiss scientists Professor Rudolf Schenkel and his wife, Dr Lotte Schenkel. By 1976 the number of rhinos had risen to between 45 and 54 and has since remained at about 50, which may be the carrying capacity of Ujung Kulon.

Little was known of the status of the Sumatran rhino. WWF funded investigations in Gunung Leuser Reserve, where Dr Fred Kurt estimated the population at 60 to 100 in 1970. Follow-up projects provided equipment and scientific assistance through research.

Sumatran rhinos were also found in the Malaysian state of Sabah in north-eastern Borneo and WWF provided vehicles to help monitor habitat destruction and rhino protection, and funded ecological studies and preparation of a management plan. Surveys to establish rhino presence in peninsular Malaysia were funded, as well as the training of a specialist in rhino conservation.

WWF projects for conservation of the greater one-horned rhinoceros concentrated on the main populations, which existed in Nepal's Royal Chitwan National Park, and India's, Kaziranga National Park and Jaldapara Wildlife Sanctuary. Despite intermittent waves of poaching, the populations in Chitwan and Kaziranga have risen substantially.

Investigation of the international trade in rhino products and end-use markets has largely been the work of American geographer Dr Esmond Bradley Martin, whose global research has been funded by WWF. His findings have provided the basis on which organizations, such as the WWF/IUCN TRAFFIC network, have built up important information banks to assist conservation programmes.

T

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facing the
rhino

Illegal Hunting for Oriental Medicine

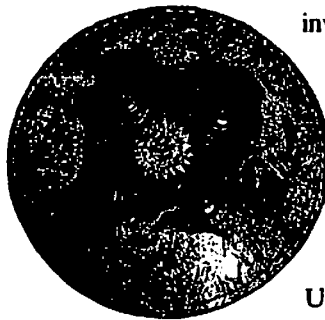
For thousands of years, rhino horn has been used in traditional Chinese medicine to treat a wide range of illnesses, from reducing fevers and calming convulsions to stopping nosebleeds and preventing strokes. It is not prescribed as an aphrodisiac as was widely rumoured. Traditional Oriental medicine made from rhino horn is processed into pills, tablets, herbal treatments, and tonics and sold worldwide with the main users in China, Korea, Taiwan, Singapore, Malaysia, Taiwan, Korea, and Hong Kong, or wherever Asian communities are found including the USA and Europe.

In fact, recent TRAFFIC investigations in the United Kingdom and the USA revealed that illegal products claiming to contain rhino horn are being sold there. CITES data help to frame the dimensions of this global phenomenon. From 1990 to 1992, at least 100,000 items of rhino products were recorded in trade, virtually all of which were reported by, and exported from, China. Overall, some 30 countries and territories were export destinations for goods containing rhino derivatives, most of which were made from the horns of African rhinos.

Meanwhile, traditional end-use markets remain active. In 1993, South Korea acceded to CITES, and during that same year an unprecedented crackdown commenced to enforce a ban on domestic trade in rhino horn and its derivatives. Although police and government agents inspected more than 12,000 shops and identified only a single offender, in late 1993, a team of TRAFFIC investigators found that 68 out of 149 Oriental medicine shops and clinics in the country's five major cities claimed to use rhino horn as a key ingredient in Woo Hwang Chung Shim Won balls, a medicine commonly used throughout Korea for a variety of ailments. TRAFFIC estimates that the consumption of rhino horn could be as high as 300kg per year, which could account for the deaths of more than 100 African rhinos.

In 1993, China and Taiwan also banned the sale of rhino horn and its use in traditional medicine, but TRAFFIC investigations have re-corded the continued availability of rhino horn medicines. Taiwan required registration of privately held rhino horn stocks in 1990, but as of September 1994 there were still no penalties for failure to register. In August 1994, 12 rhino horns, allegedly imported from Malaysia in March 1994, were seized in Taiwan. That same month the US Government (under the Pelly Amendment) took steps to impose limited trade sanctions on Taiwan for its failure to enforce the illegal rhino horn trade. How effective the trade bans will be remains to be seen. WWF and TRAFFIC are continuing to monitor the enforcement and effectiveness of the trade bans and is seeking replacement remedies based on cures found in, or associated with, traditional Chinese medicine.

PETER JACKSON



A decorated shield made of rhino skin found in India.

Dagger Handles for the Middle East

In the late 1970s, a significant decline in Kenya's rhinos attracted attention and there was evidence of heavy poaching. The reason for the high level of poaching was not at first recognized. The revelation came when Esmond Bradley Martin began investigating trade from East African ports.

His research revealed that large shipments of rhino horns were going to North Yemen. He found that the horn was being used for the decorative handles of daggers, called jambiyyas, worn by Northern Yemeni men. It turned out that many young North Yemenis had been enriched by work in Saudi Arabia during the oil boom and returned home wealthy enough to buy the costly daggers, contributing to the slaughter of Africa's rhinos. Because of the growing rarity of Asian rhinos, pharmacists in China, Taiwan, Japan, South Korea, and some other parts of eastern Asia had been purchasing large quantities

of horn, obtained from official government auctions that were held in Mombasa, and through Indian merchants who had trading posts throughout East Africa. They now found that Yemeni demand was forcing up prices, which they had to match in order to maintain their supplies. As a result, rhino horn sold in 1979 for 21 times as much as in 1971.

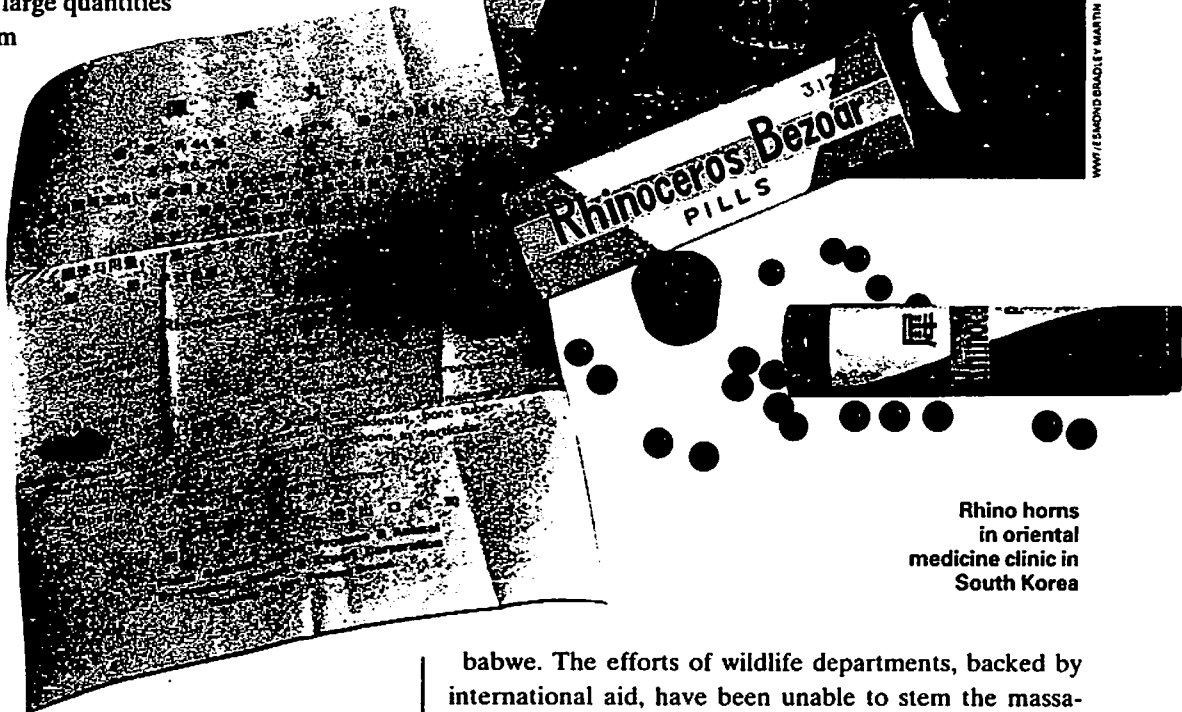
But by 1993, under 100 kilos of rhino horn were imported into Yemen, compared with 2,000 kilos annually in the 1980s. Today, in Yemen, less than one dagger horn out of every 1,000 is made out of rhino horn. Thanks to WWF's efforts, the practice has been reduced dramatically, but this still represents an unacceptable number of rhino each year. WWF is strongly pressurizing the Yemen government to join CITES as soon as its political situation stabilizes.

Weak Law Enforcement and Middlemen

During the 1970s, Kenya lost 90 per cent of its black rhinos to poaching gangs. Illegal killing of rhinos swept south, wiping out population after population in Tanzania, Mozambique, and Zambia before crossing the Zambezi a decade later to attack the black rhino's last great stronghold in Zim-



WWW/ESMOND BRADLEY MARTIN



Rhino horns in oriental medicine clinic in South Korea

babwe. The efforts of wildlife departments, backed by international aid, have been unable to stem the massacre, often because of mismanagement and corruption. The highest protection in international law, provided by CITES, has been ineffective because it has seldom been enforced. Most wildlife departments in Africa have experienced budget cuts, and with the exception of South Africa and Namibia, are seriously underfunded, often with badly paid and inadequately trained staff.

To deprive the middlemen of their ill-gotten profit, rhinos have been translocated to specially-protected reserves. In Zimbabwe, Namibia, and Swaziland, wildlife managers have cut off some of their rhinos' horns to make them unattractive to poachers. However, dehorned rhinos have still been killed, mainly in Zimbabwe. This may have been because the horns had regrown, making it economically worthwhile to kill them. Worse yet, some people killed the rhinos out of sheer frustration and spite.



PETER JACKSON

Marabou storks scavenge the carcass of a dehorned rhino.

During 1992 and 1993 in South Africa, the Endangered Species Protection Unit of the South African Police seized 128 white rhino horns. The anti-poaching campaign in South Africa seems to be well-controlled at present, but Zimbabwe's rhinos are still declining because of demand for rhino products for use in traditional Oriental medicine.

In Asia, poachers continued to pursue the Sumatran rhino, hindered to some extent by their scattered numbers in dense forest habitat. The greater one-horned rhino, concentrated primarily in the swamps of Kaziranga National Park in north-east India and Nepal's Royal Chitwan National, has received strong protection and has significantly increased in numbers. However, it has remained vulnerable and there have been considerable losses to poachers. The rhino's use of regular trails makes their capture possible in concealed pits. Recently, poachers have even tapped power lines crossing some Indian reserves and set out wires to electrocute passing rhinos. However, since 1986, in Nepal and India, most of the rhinos killed have been shot.

Impact of Catastrophes

Small isolated populations of rhinos are vulnerable to natural disasters such as drought, floods, fires, and hurricanes. In Indonesia, a virus killed five rhinos in Indonesia's Ujung Kulon National Park raising fears that an epidemic could wipe out a small rhino population, especially where in-breeding has reduced genetic variability. Such an epidemic could be catastrophic for Vietnam's population of 10 to 15 Javan rhinos.

The Genetic Threat

Continued in-breeding between domestic animals is known to lead to genetic deterioration. Small populations of wild animals face the same risk. If a population drops below 100 breeding individuals, as is the case with most surviving rhino populations, there can be a loss of genetic material through random events, such as too few females being born; or floods, fires, disease or poaching may reduce the number of reproductive females or males. Loss of reproductive capacity may follow so that the population begins to grow smaller and smaller, and continues to lose genetic variability until it becomes demographically unstable. By then, such a population is virtually doomed because it enters an "extinction vortex": small size leads to increased in-breeding, leading to lower birthrate and survival, and thence to reduced population growth rate in a continuing cycle until the population dies out.

Although no signs of ill effects have so far been noted in small rhino populations, the danger remains. Precautionary steps are necessary because genetic deterioration may not be observed until it is too late. Specialists in small-population biology recommend moving at least one male per generation between populations (which may be wild or captive) to maintain genetic variability. This is why breeding groups of rhinos in zoos are being established and managed as a reserve against deterioration or extinction in the wild.

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*hat
WWF
is doing
to save
the rhino*

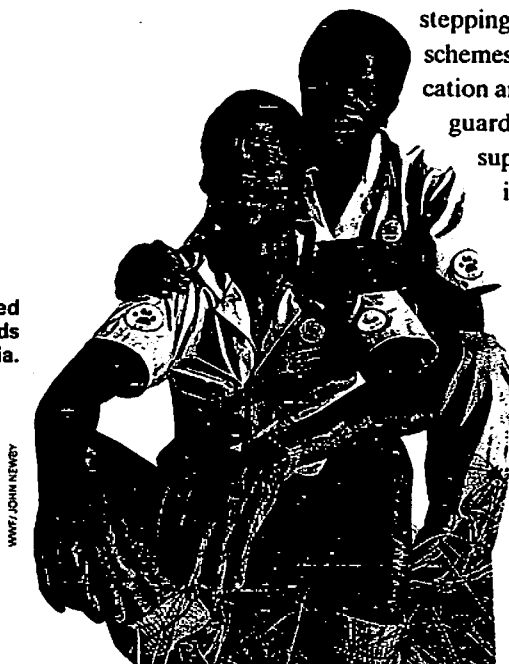
In April 1991, WWF launched a global campaign to close down the world's major markets in rhino horn: South Korea, Taiwan, Thailand, and China. WWF also stepped up its activities in rhino range states in a last ditch attempt to save the world's five extant rhino species from extinction. In Africa, the black rhinoceros was disappearing at an accelerating rate. Its numbers were dropping faster than any other large land mammal in recent history, from an estimated 65,000 in the 1970s to less than 4,000 in 1991.

In spite of major investment in protection in African rhino range states, that number has nearly halved to around 2,500 today. In Indonesia, 1993 estimates reveal that in the last decade the numbers of Sumatran rhinos may have also nearly halved from around 950 to around 450. Last year, as many as 22 greater one-horned rhinos were poached in the Manas Tiger Reserve in northeast India, which borders the Bhutan Manas National Park. WWF's activities in the tiger reserve have been suspended because insurgents have occupied the park. Elsewhere in India, rhino numbers are stable and in Nepal, rhino numbers have increased, but poaching is still a serious problem. In Kenya, South Africa, and Namibia black and white rhino numbers are all increasing, thanks to good management in these countries and in part to WWF support.

The shocking drop in numbers in the majority of rhino range states in Africa has prompted WWF to launch several emergency and long-term projects, including an assessment of whether its approach and that of other NGOs to rhino conservation have been effective. The project on cost/benefit analysis of rhino conservation, co-funded by the Wildlife Conservation Society, is presently underway and should be completed soon.

WWF's multi-pronged approach includes investigating and monitoring the illegal trade in rhino horn and other rhino parts, enhancing habitat protection, assisting with programmes aimed at reducing conflicts between protected areas managers and people living in and around reserves, stepping up anti-poaching efforts and informant schemes, initiating through regional bodies, education and training activities for field staff, park guards and villagers. In addition, WWF has supported translocation as well as dehorning. Because most of the rhinos that were dehorned in Zimbabwe were poached when their horns started growing back, WWF is evaluating the consequences of dehorning. WWF has also supported development of rhino conservation plans in several range states and in 1994 appointed a Nairobi-based Senior Conservation Adviser for Species and Protected Areas for Africa.

WWF-supported
community game guards
in Namibia.



WWF/JOHN NEWBY

Making CITES Work

In 1993-94, WWF greatly increased support for TRAFFIC, the wildlife trade monitoring network of WWF and IUCN. TRAFFIC is exploring culturally sensitive ways to discourage consumption of rhino horn and other rhino parts for medicinal purposes and to encourage the use of effective substitutes. WWF is assisting law enforcement agencies in improving implementation of CITES and is placing political pressure on governments of countries and territories of key concern to stop the illegal trade.

WWF has budgeted US\$200,000 for a series of TRAFFIC projects (1993-94) to investigate and monitor the illegal trade in rhino and tiger products in consumer countries and territories including China, South Korea, Taiwan, and Hong Kong, with the ultimate aim of shutting down the illegal trade.

In 1993-94, WWF also funded undercover investigations of the illegal rhino horn trade in Yemen, Oman, India, Nepal, Thailand, Indonesia, and Vietnam through regional TRAFFIC offices. Results of all of these studies and projects have helped WWF, IUCN, and TRAFFIC advise governments on how they can better implement CITES or become member nations of the Convention.

Undercover work in Taiwan led to the unprecedented decision by the US Government to impose, under the Pelly Amendment in August 1994, limited trade sanctions on Taiwan because of its failure to stop its illegal tiger bone and rhino horn trade. TRAFFIC Taipei is working closely with the Taiwan government to help it change and strengthen domestic wildlife legislation and to help the government enforce CITES.

TRAFFIC Network

In December 1991, WWF financed the establishment of a regional TRAFFIC office for East and Southern Africa in Malawi with branches in Tanzania and South Africa set up in early 1992. The TRAFFIC Network offices were created for the purpose of monitoring the trade in plants, live animals, animal products, notably rhino horn and ivory, throughout East and Southern Africa. One of the first studies undertaken by the Network was a report on the decline of the black rhino in Zimbabwe, published in 1993. In Zambia, TRAFFIC is assisting the Species Protection Department of the Anti-corruption Commission in setting up a computerized database with the aim of detecting and uncovering smuggling networks. TRAFFIC is also involved in registering rhino horn and elephant tusks in government store-rooms in several African countries. WWF provides annual support of over US\$200,000 to the East/Southern Africa TRAFFIC Network.

In 1992, WWF funded the creation of a regional TRAFFIC office in Malaysia for field investigations and general trade monitoring throughout Southeast Asia and set up a TRAFFIC office in New Delhi at WWF-India. TRAFFIC-

India is currently investigating the illegal trade in the products of the greater one-horned rhino. An earlier probe exposed an Indian national park official who was dealing in rhino horn. Annual assistance to the TRAFFIC India office is US\$45,000 and US\$130,000 for the regional Southeast Asia office.

WWF also supports TRAFFIC offices in Taipei, re-opened in 1993, and in Hong Kong, opened at WWF-Hong Kong in 1994, to monitor the East Asia region. The main focus of TRAFFIC Taipei's work has been to monitor the market for rhino horn and tiger bone. Investigators in Taipei recorded large stockpiles of rhino horn. Annual support to the Taipei office is US\$80,000.



Oriental medicine seller measuring out herbs for a prescription with rhino horn in foreground. The horn has been registered with the government and is not for sale.

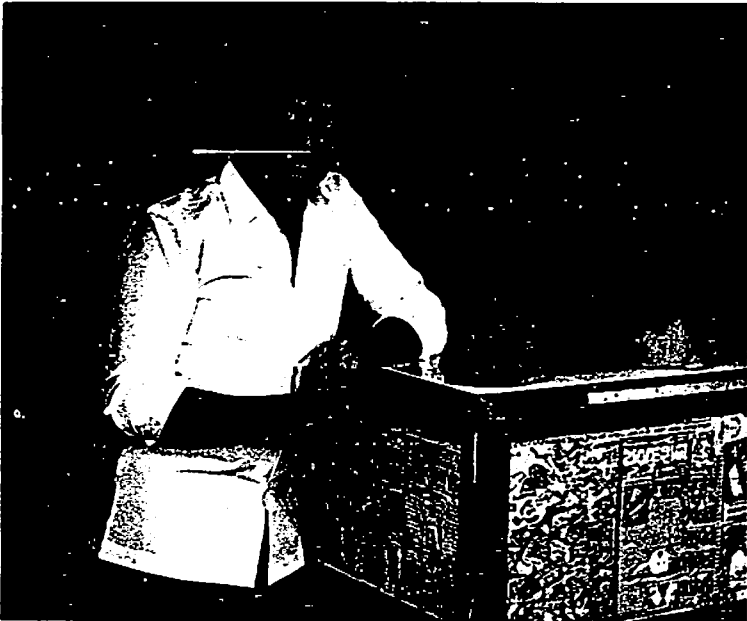
Specific TRAFFIC projects planned for east Asia include bringing together members of the Korean traditional medicine community, law enforcement officials and conservationists. Another activity will explore ways to dissuade the use of endangered wildlife as medicine, drawing on the expertise of Chinese and Korean sociologists, traditional medicine doctors, and advertising, media and marketing specialists. WWF has budgeted US\$180,000 for 1994-95 to support the TRAFFIC East Asia office.

IUCN Rhino Specialist Groups

WWF funds activities of IUCN's African and Asian Rhino Specialist Groups. IUCN's Species Survival Commission's Specialist Groups have provided the primary source of technical information on rhino and other species conservation in Africa and Asia. The rhino population estimates published in this report are provided by these groups. This year WWF is providing US\$77,000 to the African group.

India

The first phase of a series of WWF-sponsored wildlife surveys and censuses began in India in early 1966 in nine sanctuaries and four states in Northern India with focus on the greater one-horned rhino. Over the years WWF has supported work in Kaziranga, Jaldapara, Dudhwa, Manas Tiger reserve and a number of other protected areas where rhinos occur. In the mid 1980s, a new and terrible way of poaching rhinos began in north-east India, home to 80 per cent of the world's remaining greater one-horned rhinos. Poachers tapped high voltage power lines and ran wires across rhino trails, electrocuting the unsuspecting animals as they walked through the thick undergrowth. Anti-poaching units in Kaziranga and Pobitara Wild-



A shop in western India displays African rhino horns. Small quantities of the horn will be bought and consumed for sexual purposes.

life Sanctuary have brought the situation under control, but occasional electrocutions still occur. Although the populations of rhinos in most of India have increased and stabilized, poaching is still a serious threat, particularly in Manas National Park, where the number of rhinos is dropping drastically. Arson, sabotage, and murder by terrorists have forced some sanctuary staff to leave the reserve. From 1991 to 1993, WWF-India supported a project in Manas which resulted in a technical report, giving basic information that could be used to formulate an eco-development plan for the southern periphery of the reserve. WWF-India recently prepared an action plan for Dudhwa Tiger Reserve, a relocation site for rhinos where at present there are 11 rhinos. A rhino action plan is also being planned for Manas under the national Biodiversity Alliance, coordinated by the MS Swaminathan Research Foundation, Madras, in collaboration with WWF-India.

WWF has budgeted US\$8,000 in 1994 for TRAFFIC India to carry out a study of the illegal trade in Indian rhino horn.

Indonesia and Vietnam

Of the five surviving species of rhino today, the Javan rhino found only in Vietnam and Indonesia and possibly Burma, is the most endangered.

In 1964, when WWF began to support work in Indonesia's Ujung Kulon National Park, the Javan rhino was estimated to number no more than 20 to 25. WWF helped Indonesia's Directorate of Forest Protection and Nature Conservation (PHPA) government step up strict patrolling of the park, a measure which is believed to have helped the numbers to increase and stabilize, but the threat of poaching remains serious. From 1991-93, WWF funded a photo survey of the Javan rhino in the park and added a community participatory approach to managing and protecting the park. The photo survey yielded new data on the species and revealed the presence of animals not known to occur in the park. WWF has also funded a scientific exchange programme between Vietnamese and Indonesian scientists who have conducted joint surveys in both countries. Currently, two small-scale forestry projects are also ongoing adjacent to Ujung Kulon and WWF is providing US\$25,000 to support this project in 1993-94.

Vietnamese scientists and American biologist Dr George Schaller confirmed the presence of Javan rhinos in Nam Bai Cat Tien National Park in 1990. The following year, and in 1993, WWF and Vietnamese scientists carried out additional surveys. Vietnamese scientists recommended expanding the park with an adjacent reserve and rhino sanctuary to encompass at least 80,000 hectares and establish it as a biosphere reserve. Currently, WWF is continuing scientific surveys and monitoring the park in cooperation with the Ministry of Forestry and conducting a training workshop for forest guards, local officials, and community leaders. The long-term objective is to develop a participatory model of natural resources and protected area management, while the immediate aim is to prevent any rhinos from being killed. WWF support in 1993-94 for Nam Cat Tien's rhinos and other important animal and plant species is US\$60,000.

Indonesia – Sumatran Rhino

Currently, WWF is supporting development and management of an Indonesian Rhino Action Plan, surveys of Sumatran rhinos and anti-poaching and monitoring activities. Since 1976-77, WWF has been funding projects in areas where the Sumatran rhino occurs, including Kerinci Seblat and Gunung Leuser National Parks. The research data from surveys carried out in the late 1970s resulted in the establishment of a number of protected areas including Gunung Leuser (1980) and Kerinci National parks (1981). Both parks offer protection for the world's last surviving Sumatran rhinos. Between 1990 and 1994, WWF budgeted around US\$550,000 to support habitat conservation, community participation initiatives,

baseline data studies, agroforestry, and environmentally sound ecotourism for Kerinci. Some 280,000 people live inside Kerinci and were inhabitants long before it was declared a protected area.

WWF has redesigned a project for protection of Gunung Leuser National Park with a focus on resolving the conflict between the park and the people who live around it. Overall goals of this community-based project are to create and demonstrate field models to stabilize or decrease pressure on the park and to build better local institutional and policy support for park management. WWF hopes to strengthen local capacities and develop community-based enterprises with government support. WWF has, with matching funds from the Overseas Development Agency (ODA), budgeted around US\$500,000 for activities from 1994-97.

Malaysia

Sumatran and Javan rhino surveys were among the earliest activities funded by WWF, beginning in 1962 as part of WWF International projects 14, 35, and 73. Over the years, WWF's rhino conservation efforts have included ecological surveys and rhino distribution and management studies, training, provision of a wildlife co-ordinator in the Tabin Wildlife Reserve, development of management plans for areas where rhinos occur, and support to IUCN's Asian Rhino Specialist Group.

Rhino conservation is managed by the relevant government agencies in Peninsular Malaysia, Sabah, and Sarawak. WWF-Malaysia supports rhino conservation through provision of financial or technical assistance, cooperation with relevant government agencies and research institutions, and/or field studies in Peninsular Malaysia, Sabah, and Sarawak.

The promotion of public awareness of the need for species conservation is addressed through WWF's environmental education and training programmes, dissemination of WWF publications and reports, media news releases and fundraising activities. Public advocacy, through policy work, is an important aspect of conservation efforts. Much of the findings of fieldwork have been incorporated into State Conservation Strategies and the National Conservation Strategy. These have been developed by WWF-Malaysia in cooperation with relevant government agencies.

Nepal – Chitwan

In 1994, the Nepalese Government announced that a joint WWF rhino survey indicated that the Chitwan population of rhinos had increased from 358 in 1988 to between 446 and 466 today. Anti-poaching units have been equipped to protect Nepal's parks from illegal hunting. In 1993, a village informant scheme with rewards for information resulted in the jailing of 35 poachers and traders. Nepal is also working with TRAFFIC to uncover the large-scale network of middle

men. From 1990-94, WWF spent over US\$150,000 and poaching has decreased.

WWF began rhino work in Chitwan in 1966 and rhino and tiger-related eco-development projects in Nepal in 1989. The latter starting with a community forestry project around Royal Chitwan National Park, which contains a rich variety of wildlife, including rhinos and tigers. With support from USAID and the MacArthur Foundation, WWF conducted a feasibility study to determine the needs and most appropriate site for a wildlife management training facility and initiated a series of community woodlot plantations involving hundreds of subsistence farmer-families. Tens of thousands of saplings of seven indigenous tree species and thatch grass with high economic, fuel, and timber value have been planted and cared for. Buffer-zone management with direct benefits to the local population and nature reserves is also planned under a Parliamentary Act passed by the Nepalese government in 1993.

WWF has developed as part of the Biodiversity Conservation Network, a consortium made up of WWF, the Nature Conservancy, and the World Resources Institute, a project that will eventually involve 60,000 subsistence farmers living around the park. Expanding upon the successful community forestry programme, this project aims to provide villages with essential forest products, initiate an ecologically sound approach to flood control, and restore degraded land as a means of obtaining fodder, firewood, and timber. Wildlife habitat and forests in over 1,000 hectares of buffer zones should be re-established. The project should also help local villagers reap the economic benefits from recycled ecotourism revenues, most of which will be earmarked for the community forestry programme. So far US\$650,000 has been committed by the US government. The Biodiversity Conservation Network is helping finance the first (1994-97) phase of this project. The King Mahendra Trust for Nature Conservation (KMTNC) is implementing it with technical assistance from WWF.

Nepal – Bardia

WWF has been supporting species and habitat conservation in Bardia National Park (formerly Karnali Wildlife Reserve) since 1973. So far US\$200,000 has been allocated for conservation activities in Bardia, a portion of which has been for the successful translocation of 38 rhinos from Chitwan. WWF has developed, in close cooperation with the KMTNC and the Parks Department, a community-based sustainable development and biological diversity conservation programme with a budget of US\$150,000 (1994-97).

Africa – General

Under WWF's Emergency Fund for Rhino Conservation, several activities have been carried out. Extra money has been provided to step up protection of the continent's last



Fitting a radio transmitter on a white rhino to keep track of it, Zimbabwe.

remaining population of northern white rhinos in Zaïre's Garamba National Park. Intensive Protection Zones have also been identified in Zimbabwe, where the country's black rhino population has plummeted from 3,000 in the 1980s to 1,500 in 1992, and to less than 300 today. Under this project, WWF has also supported workshops in Tanzania and Cameroon to help these countries formulate their strategies for rhino conservation, presented at the UNEP-hosted meeting between rhino range states and donors. Consequently, projects in these plans found donors.

Support for the day-to-day activities of the IUCN African Rhino Specialist Group, as well as funding for an assistant to the Chairman of the group is provided for under this grant.

WWF has also allocated support from its emergency funds to two projects in order to develop a policy and funding strategy for the future. Together with the US-based Wildlife Conservation Society, WWF is analyzing the costs and benefits of different approaches to rhino conservation, and WWF, together with TRAFFIC, is conducting an economic analysis of policy options with the hope of identifying the market scenarios most likely to reduce poaching threats. In 1993-94, WWF budgeted around US\$260,000 for the African Rhino Emergency Fund.

Cameroon

The black rhino sub-species, *Diceros bicornis longipes*, is estimated to have fallen to 27 animals due to poaching, encroachment of habitat, and lack of protection. The rhinos

live in, and near, three national parks and WWF is funding the first attempt to save this sub-species from extinction. A workshop was led in Cameroon to review the plight of the animals, review technical proposals, propose solutions, and identify costs for conservation measures. Funds are being sought to determine the most appropriate step forward to saving the animals.

Kenya

Kenya is one of three African countries where black rhino numbers are increasing and no known rhinos have been poached for three years. The country hopes to have 600 black rhinos by the year 2000. In Kenya, WWF is currently funnelling all its support for rhino conservation through the Kenya Wildlife Service with the specific aim of improving management and conservation of the country's black rhino population. This money is then allocated to both private and national sanctuaries, depending on where the greatest need is, according to Kenya's national rhino strategy. Over the past few years, WWF has supported Kenya's sanctuary approach to black rhino conservation which began as an initiative of private landowners. Establishment of government-run sanctuaries now form the basis for Kenya's rhino conservation strategy. The aim of the WWF-supported projects in Kenya is to increase rhino numbers in protected areas, and to use surplus animals to restock stable or larger unfenced parks and reserves and establish new sanctuaries. WWF projects are in Lake Nakuru National Park Rhino Sanctuary

(with matching funds from the British ODA), a multi-faceted project working within the park and communities outside in the catchment area, Aberdares National Park, and with several private land rhino sanctuaries. WWF has budgeted US\$100,000 for 1993-94 for Kenyan black rhino conservation.

Namibia

Namibia is home to 95 per cent of the black rhino subspecies, *Diceros bicornis bicornis*. Over half of the country's 583 black rhinos occur in Etosha National Park, where WWF is providing training, equipment, running costs, and development of infrastructure. One of the aims of the project is to redistribute rhinos both within Namibia and to safer more suitable habitat within the park itself. Education extension services for local communities is also part of the project. WWF has budgeted US\$120,000 for 1994-95.

In Namibia, poaching is considered the main threat to the rhino. Fortunately, this has been reduced at two WWF project sites, the Huab catchment area conservation project in Damaraland, a desert/sub-desert area famous for its uniquely adapted elephant and black rhino populations, and in Kaokoland.

In the Huab catchment area, the WWF project is designed to protect the desert elephants and rhinos, increase productivity of the area by husbanding wild species and increasing tourism potential for the local Damara people. So far, gametrackers have been trained and barriers erected to protect crops and livestock. WWF worked closely on community development projects with Namibia's Save The Rhino Trust from 1989-92. Since then, the project has moved into a new phase, working with the Ministry of the Environment. In 1993-94, WWF has budgeted US\$100,000 for this project.

WWF's Community Game Guards and Rural Community Project in Kaokoland and Damaraland is considered a conservation model, integrating the knowledge and experience of local inhabitants into species and protected areas management. It also provides a livelihood for some of the involved families. The Endangered Wildlife Trust, with whom WWF works in the area, provides administrative and logistical support to the project. The community-game guard scheme presently comprised of 24 people has effectively reduced poaching. The WWF project, which began in 1990, aims to consolidate and expand the established community

game-guard programme, and to establish a similar system in the Caprivi region, a savannah and riverine wetland ecosystem threatened by poaching. Tourism and craft ventures have been established at a few locations, and a community-based wildlife conservation system totally integrated into the rural economy of Namibia is being set up. Income will be channelled back into the programme and it will eventually become self-sustaining. Since 1990, WWF has provided US\$1 million for this project, which promises to pioneer new directions for African conservation. WWF has also budgeted US\$17,000 for a study on the biological consequences of dehorning African rhinos.

South Africa

In 1994-95, the Southern African Nature Foundation (WWF-South Africa) is spending over US\$20,000 for the conserva-

tion of rhinos. Projects include a study of the genetic variability of southern Africa's black rhino populations; support for anti-poaching activities and management of the white rhino in Mkhaya Nature Reserve, Swaziland; and support for the IUCN/SSC African Rhino Specialist Group. In addition, SANF is seeking US\$140,000 in order to establish some new and secure black rhino populations in South African National Parks.

Zaire

The Garamba National Park in Zaire harbours one of the world's most endangered species, the northern white rhino *Ceratotherium simum cottoni*.

Fourteen years ago the rhino population had plummeted to only 15. Today that number has risen to 32 thanks to the dedication of WWF project executives, the Frankfurt Zoological Society and the Institut Zairois pour la Conservation de la Nature. Since 1984 there have been no reports of poaching, but elephants in the park are being killed this year by armed gangs and project and park staff fear the rhinos may soon be targeted. The unstable political and economic situation in Zaire has resulted in skyrocketing inflation and impoverished conditions for park guards. WWF allocated additional money to Garamba from its Africa Emergency Fund this year, in order to help cover costs of running the park and paying the staff. In 1993-94, WWF budgeted US\$343,000 for its ongoing conservation management training programme, stepped up anti-poaching efforts, and its rhino and ecosystem monitoring activities.



Dr Kes Hillman examining a dead rhino in Kenya.

WWF/PETER JACKSON

Tanzania

In addition to funding a TRAFFIC office in Tanzania, WWF is supporting a discretionary fund to help the anti-poaching and general management of Tanzania's national parks. WWF's main funding is for conservation and management of the Selous Game Reserve which contains the country's largest black rhino population. After this project began in 1984, the rhino population dropped, but it is believed to have stabilized again. WWF helped the country develop its national rhino action plan and hopes to support the post of a national rhino coordinator responsible for helping implement it. WWF's expected budget for 1993-94 is US\$150,000.

Zambia

It is uncertain if Zambia's black rhinos will survive into the 21st century. The country's rhino population in the Luangwa Valley fell from around 8,000 in 1973 to under 40 in 1990 and may be fewer than 30 today. Since 1990, WWF has been funding support for a Wildlife Species Protection Unit of Zambia's Anti-Corruption Commission. This Commission cracks down on "middle men" involved in poaching of all wildlife species. Recent actions of the Commission include expulsion of a North Korean caught with 23 rhino horns, indictment of a regional governor for poaching, and the arrest of poachers in the Luangwa Valley. WWF has spent US\$332,4000 for this project from 1990-94.

Zimbabwe

WWF support to Zimbabwe began in 1970 when 83 black rhinos were translocated from areas in the northern part of

the country to the Gonarezhou Game Reserve (now a national park) adjoining the Mozambique border. In the following 24 years, poaching pressure on Zimbabwe's black and white rhinos has continued to mount with an unprecedented onslaught in the mid- and late 1980s. By 1987, Zimbabwe's Zambezi valley had 700 black rhinos left, having lost 400 animals there between 1984-88. This was the largest single population in Africa. In the early 1980s, the overall number of black rhinos in the country was 3,000; by 1991, it was estimated to have plunged to 1,400 and today, despite intensive national efforts to stop the slaughter and increased support from WWF, the black rhino in Zimbabwe has fallen below 400 animals. Currently, WWF is funding emergency support for black and white rhino conservation by translocating rhinos to safer areas and dehorning them. By August 1993, 122 black and 111 white rhinos had been dehorned. Since 1992-94, WWF has budgeted US\$80,000 for dehorning and US\$85,000 for medical support for dehorning and translocation exercises through Zimbabwe's Veterinary Service Wildlife Unit.

Since 1990, WWF has supported a study of the viability of conserving black rhinos on Zimbabwean ranches. Two large conservancies, Save Valley and Bubiana (3,200 km² and 1,200 km² respectively) have been converted from cattle ranches to private nature reserves. In 1994, translocation of rhinos from insecure or marginal areas into the conservancies, dehorning and radio collaring, and research on population growth, carrying capacity of the habitat, and genetic diversity are being carried out. Monitoring anti-poaching efforts is also underway. WWF budgeted US\$330,000 for 1990-95.

Rhino horn is not an aphrodisiac

Western conservationists have often attributed the Chinese demand for rhino horn to supposed aphrodisiacal properties. The penis of the rhino still has limited use as an aphrodisiac in Laos, Thailand, and India, and genital tonic pills are still on the market in China, but the horn is generally used as a fever-reducing remedy.

Scientists of the Swiss pharmaceutical firm, Hoffmann-La Roche, have declared that they found that rhino horn has no effect on the human body, good or bad. Some Chinese scientists in Hong Kong published in medical journals that they found that the horn did have some cooling effect on fever, but only in massive doses served to laboratory rats.

Unfortunately, the erroneous publicity about the supposed aphrodisiacal properties of rhino horn may have increased use by Asians, and also people in other regions. In 1976, Swiss customs officers seized 52 African rhino horns being imported by a Geneva "health club".

Black rhino



PETER JACKSON

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needs
to be done*

The world's rhinos are threatened mostly by human activities. They can only be saved from imminent extinction if effective measures are taken to combat the primary and immediate threats to their survival: the persistent demand for horns for Yemeni dagger handles and traditional Oriental medicine. Urgent steps must be taken to stop the pursuit and killing of rhinos for the illegal wildlife trade. The trade in rhino horn must be curbed at the international and national level and we must explore all options and actions for the protection and conservation of all five species.

In the short term, rhino habitat needs to be protected from fragmentation and degradation so that viable rhino populations can survive. Anti-poaching efforts must be strengthened wherever rhinos survive. Government management authorities must allocate more resources into rhino conservation, clamp down on corruption, and improve management. Technical expertise should also be exchanged between range states.

In the longer term, conservation programmes must reconcile the interests of people and rhinos. This includes people living in or near rhino reserves as well as people who use, and whose ancestors have used, rhino horn and other parts for centuries. Effective substitutes must be identified within the Oriental medicinal community and their use promoted by practitioners of traditional Oriental medicine. Additional alternative materials for dagger handles must also be found and used.

Culturally sensitive public awareness campaigns and environmental education activities — drawing upon the knowledge and involving the cooperation of traditional Oriental medicine practitioners — must be developed and implemented. These campaigns must recognize health attitudes and traditions that date back thousands of years. The link between illegal trade in rhino horn medicine and the disastrous effect it is having on the world's endangered rhinos must be made clear through proactive publicity campaigns in consuming countries — with the ultimate aim of reducing trade levels and demand.

The current international economic situation puts considerable stress on rhino range states, undermining their capacity to enforce legislation or to manage resources within their borders. These negative forces come from the fall-

Preparing tranquilized rhino for translocation in South Africa.



WWW.MARNEY/WILDLIFE

ing real prices of agricultural products on world markets, the difficult economic conditions brought about by structural adjustment programmes, and growing debt burdens. Helping reform the world economic system, and reversing the huge flows of financial resources from rhino range states to the affluent North, are also needed to ensure the long-term conservation of rhinos and their diversity-rich habitats.

According to the IUCN, Asian and African Rhino Specialist Groups, the following urgent short-term measures must be taken in the field:

Highest priorities in Asian range states

- Development of sanctuaries and intensive protection zones and management centres for Sumatran rhinos in Indonesia and Malaysia.
- Establishment of effective anti-poaching units in Indonesia and Malaysia.
- Establishment of a second sanctuary for Javan rhino in Indonesia.
- Establishment of a Javan rhino sanctuary in Vietnam, free from hunting and logging.
- Habitat improvement for greater one-horned rhino in Kaziranga, India.
- Infrastructure support for greater one-horned rhino conservation in India and Nepal.

Highest priorities in African range states

- Improved security of rhino reserves, especially the Garamba National Park in Zaïre, the last sanctuary for the northern white rhino.
- More effective anti-poaching operations, for which better equipment is required.
- Installation of fencing in critical reserves to control rhino movement and to keep the poachers out.
- Translocation of rhinos from areas where they are vulnerable to poachers to protected sanctuaries and conservancies.
- Provision of specialized equipment to improve monitoring of rhino populations.
- Development of intelligence networks to combat rhino poaching and illegal trade in rhino horn.

WWF endorses fully the above recommendations and believes the following medium- and long-term measures must also begin immediately:

Action at the Local Level

1. Conservation of habitat

Controlling encroachment of rhino habitat by human settlement and exploitation of firewood, timber, and other resources must be alleviated through community development projects and restoration of degraded forest and grazing land. It is also important in some countries to control fragmen-

tation of rhino habitat in order to maintain areas large enough for rhino populations. Such areas are the home of many other species and thus serve as reservoirs of biodiversity.

2. Strengthening ties with local communities

a. Local institutions and people

In many situations, a sustainable rhino conservation strategy cannot be achieved without the full participation and collective action of individual rural households whose livelihoods depend on rights of access and use of the wild lands where rhinos live, particularly in Asia. In developing management plans for rhino habitats, increased attention needs to be given to community-based action through local institutions and user groups. These include, for example, natural resource management groups, community organizations, women's associations, and credit management associations.

b. Environmental education

Along with ecologically sound development, education in sustainable use of natural resources is required. This must be at all levels of the community, beginning with children and should include conducted visits to nature reserves where the beauties of the flora and fauna can be seen and the functioning of ecosystems can be demonstrated. Pride in local nature needs to be encouraged in order to promote participation in protecting it.

c. Sharing economic benefits from ecotourism

Rhinos and other species attract many visitors to reserves in Africa and the Indian sub-continent where they are sometimes easily visible. Revenue from ecotourism, generated by protected areas, should be shared with local communities which cooperate in protection and management of a reserve. This could be facilitated by a special tax on hotels and tour operators, who are at present the main beneficiaries of rhino-based and other forms of ecotourism. The use of revenue to provide amenities and the development of local credit systems for rural communities are two ways in which the benefits can be shared. Profits can also be invested where appropriate in community agroforestry schemes.

3. Building local institutions and capacity

Institutions, such as NGOs, government departments, and banks, can facilitate processes by which local people develop their sense of ownership and commitment. Building local skills and capacity motivates people to stake a claim in maintaining structures or practices even when incentives for conservation stop. Success hinges on people's participation in planning, implementation, monitoring, and evaluation, which leads to the formation of new institutions or the strengthening of existing ones. We must recognize that much can be learned and used from local people's traditional knowledge and skills, which are based on familiarity with local conditions.

Action at the National Level

1. Law enforcement and policy reform

The rhino's legal status must be upgraded where it is weak. Legislation for protection of the rhino and other wild species in some range countries is sometimes out-dated and inadequate. These laws need to be revised. Laws and penalties need to be revised and strengthened in most range states.

2. National policy and institutional development

It is crucial that the State plays an enabling role in supporting the development of conservation strategies for the rhino and the habitats in which it lives. Governments could reform land rights and rights of use of wild land products to give guarantees to individuals and communities which allow them to manage local resources.

a. Co-management schemes:

The state could sign joint-management agreements with local communities living in or around protected areas: these co-management schemes would emphasize the twin goals of conservation and security for livelihood.

b. Conflict resolution:

Mechanisms need to be put in place to resolve conflicts between groups with different values and competing interests. Initial assessment of conflict situations need to be carried out, and conflict management strategies must be developed and tested. In addition, state institutions must work in ways that empower local communities in the management of conservation and natural resources and compensate them for loss. Establishing zones with varying kinds of protection and use is another means of reducing friction. By exploring such solutions, conflicts and resultant poaching activities could be lessened.

Action at the International Level

1. Policy

Unless governments and other decision-making bodies agree that rhinos must be saved, the efforts of the conservation community can only have a postponing effect on the decline of the rhinos. CITES, to which 124 governments are now party, bans international commerce in rhinos and their derivatives. But the effectiveness of the ban rests on the

actions of the member nations, who must have supporting legislation, enforced by trained personnel. It depends not only on the actions of range countries, but of other countries which trade with them. All range states and consuming nations and the entrepots for rhino horn which are not members of CITES should join the convention.

2. Enforcement of trade regulations

Countries need to forge regional agreements on law-enforcement to halt illegal cross-border trafficking which threatens rhino populations in Asia and Africa. The recent Lusaka agreement between Kenya, South Africa, Swaziland, Tanzania, Uganda, and Zambia provides the mechanism for cooperative enforcement operations directed at illegal trade in rhinos and other wildlife.

Technical assistance should be given to consumer countries, particularly in China, Taiwan, Yemen, and Korea, to help customs officials and police enforce national legislation and international agreements, such as CITES.

Technical assistance should also be given by the international community to help reform policy and draft stronger legislation at the national level.

3. Financing

Countries with rhinos have limited financial resources which have to be used to tackle urgent, national development needs. The international community, including non-governmental organizations and governmental organizations, particularly in Europe, North America, and Japan, has a duty to provide financial and technical assistance to ensure that there are sufficient, well-trained personnel to protect rhinos, a 60 million-year-old heritage that belongs to the world.



△ Taiwan pharmacies display these stickers inside their shop windows after government inspectors have confirmed they have complied with Taiwan's ban on the sale of rhino horn and tiger bone. WWF and IUCN's TRAFFIC Network is monitoring the effectiveness of these trade bans and trying to help governments enforce them.

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