



A WWF International
Report

THE FIGHT FOR SURVIVAL: Four Decades of Conserving Africa's Rhinos



Siegfried Woldhek

A WWF report researched and written by
Dr Holly Dublin and Alison Wilson

The opinions expressed in this publication are those of the authors and do not necessarily reflect those of WWF. Any inaccuracies in the paper remain the responsibility of the authors.

Acknowledgements

The authors wish to express their gratitude to the following for their invaluable contributions: Kath Dickinson, Richard Emslie, Jean-Pierre d'Huart, Nigel Leader-Williams, Esmond Bradley Martin, Tom McShane, John Newby, Taye Teferi, and Raoul du Toit.

Dr Holly Dublin
WWF Senior Conservation Advisor
WWF-Eastern Africa Regional Programme Office
PO Box 62440
Nairobi
Kenya
Tel: +254 2 332 963
Fax: +254 2 332 878

Alison Wilson
c/o WWF-Southern Africa Regional Programme Office
10 Lanark Road
Belgravia
Harare
Zimbabwe
Tel: +263 4 723 870
Fax: +263 4 730 599

Desktop publishing: Conservation Advisory Services, Le Muids, Switzerland

Printed on recycled paper

Published October 1998 by WWF—World Wide Fund For Nature (formerly World Wildlife Fund),
1196 Gland, Switzerland. Any reproduction in full or in part of this publication must mention
the title and credit the above-mentioned publisher as the copyright owner.

© text WWF

THE FIGHT FOR SURVIVAL: Four Decades of Conserving Africa's Rhinos

CONTENTS	Preface.....	3
	A Wildlife Tragedy	3
	The Insatiable Demand for Horn.....	4
	WWF's Response to the Crisis	5
	<i>The Early Years: 1961-1970</i>	5
	<i>The 1970s and "Project Rhino"</i>	6
	<i>The 1980s: Capture and Consolidation</i>	6
	<i>The 1990s: Cautious Optimism</i>	8
	What Have We Learned?.....	9
	Challenges for the Future	9

THE FIGHT FOR SURVIVAL: Four Decades of Conserving Africa's Rhinos

Preface

Since it was founded in September 1961, WWF has played a key role in the battle for the survival of Africa's rhinos.

Immediately following its establishment, WWF launched its first appeal for funds to save endangered wildlife in a seven page "shock issue" supplement to the 9 October edition of Britain's *Daily Mirror* newspaper. On the front cover, together with other threatened species, was the photo of a black rhino. Since 1962 WWF has spent in excess of 30 million Swiss francs (CHF) on activities to conserve Africa's rhinos. Another CHF7 million is forecast to be spent before the end of the century.

Helped by the media's focus on Africa's charismatic megafauna, many people have shown their concern for the rhino's survival and have contributed to efforts to achieve this. Supported by the generosity of its donors, WWF has been able to invest large sums of money in rhino conservation in 16 different countries in Africa. At times, this has been a battle against tremendous odds, but with African rhino numbers stabilizing, and in several countries actually increasing, there is now room for optimism.

Through its work and that of other organizations, WWF has learned much about the factors that influence the survival of wild species; this knowledge is constantly being used in its efforts to conserve the planet's biodiversity and maintain ecological processes. This document looks back on nearly four decades of work to conserve African rhinos. It tells how WWF has intervened to support national conservation actions and identifies lessons that will further improve our ability to conserve two of Africa's most powerful flagship species — its black and white rhinos.

A Wildlife Tragedy

The decline of Africa's rhinos is one of the greatest wildlife tragedies of our time. Early explorers reported an abundance of rhinos in Africa's savannas. It was not until the advent of the modern rifle and the push by European settlers into Africa's interior that the precipitous decline of rhino populations began. Count Teleki, on his expedition to discover lakes Rudolph and Stephanie (now lakes Turkana and Chamo) in the 1880s, noted in his log that he shot no fewer than 79 rhinos; the record for a single day being 4.

At the turn of the 20th century, Africa's savannas may still have harboured as many as one million black rhinos. Sport hunting and land clearance were major factors in the black rhino's decline during the first half of this century. In South Africa, for example, the black rhino had almost disappeared by the 1930s, with only 110 animals surviving in game reserves. Throughout eastern Africa, thousands of black rhinos were shot by game control officers as vermin, or to make way for agricultural schemes. In the space of just three decades, from the late 1950s, Africa lost more than 95 per cent of an estimated population of 100,000 black rhinos. Today, only about 2,600 animals remain, the great majority confined to closely-guarded areas in eastern and Southern Africa (see Table 1).

The white or square-lipped rhino, Africa's other rhino species, suffered a different past. Two distinct races are recognized — northern and southern (see Box 1). The northern white rhino formerly occurred in the grasslands of north-central Africa, from Chad and northern Central African Republic (CAR), through the Democratic Republic of Congo (former Zaïre) to Sudan and Uganda. In their book, *Run Rhino Run*, Esmond and Chryssee Martin chronicle the slaughter for profit of thousands of northern white rhino by French hunters in the Lake Chad

Box 1

The Current Range of Africa's Rhinos

Four subspecies of black or hook-lipped rhinoceros (*Diceros bicornis*) are recognized today. Their scientific names and current distribution under free-ranging conditions are as follows:

<i>Diceros bicornis bicornis</i>	Namibia, South Africa
<i>Diceros bicornis longipes</i>	Cameroon
<i>Diceros bicornis michaeli</i>	Kenya, Rwanda, South Africa*, Tanzania
<i>Diceros bicornis minor</i>	Malawi, Mozambique, South Africa, Swaziland, Tanzania, Zimbabwe

The white or square-lipped rhinoceros (*Ceratotherium simum*) has two subspecies, the southern and the northern white rhino:

<i>Ceratotherium simum simum</i>	Botswana, Côte d'Ivoire*, Kenya*, Namibia, South Africa, Swaziland, Zambia, Zimbabwe
<i>Ceratotherium simum cottoni</i>	Democratic Republic of Congo

Although all rhinos are herbivores, the black rhinoceros is principally a browser, using its prehensile upper lip to grasp stems and branches, whilst the white rhino is a grazer, preferring more open habitats.

* countries outside the known historic range of the subspecies.

region between 1927 and 1931. Now numbering around 25 individuals, the only remaining wild population is in the Democratic Republic of Congo's Garamba National Park.

In the face of colonization, the southern race of the white rhino suffered an earlier decline than either the black or northern white subspecies. It was almost extinct 100 years ago, with less than 100 individuals surviving, mainly in South Africa's Umfolozi Game Reserve. Thanks to successful conservation efforts during the past century, the southern white rhino is now relatively secure, with over 7,900 individuals in South Africa, and smaller populations in Botswana, Côte d'Ivoire, Kenya, Namibia, Swaziland, Zambia, and Zimbabwe (see Table 1). The remarkable recovery of this species is a conservation success story that throws out a beacon of hope in an otherwise disastrous century for African rhinos.

The Insatiable Demand for Horn

Although greatly reduced in number by settlers and sport hunters during the colonial era, the

overwhelming cause of the rhino's decline during the past 50 years has been poaching. In the Far East, and in East Asian communities elsewhere, rhino horn is still prescribed as an ingredient in traditional remedies to reduce fever. With increasing wealth following World War II, medicines containing rhino horn — always rather expensive — became more affordable and demand rose steadily. By 1976, the price of "official" rhino horn, that is horn sold legally from government storerooms in rhino range states, was fetching US\$80 a kilogram and being resold wholesale in eastern Asia for US\$600 to US\$750.

Rhino horn is also in demand in some Arab nations, where it is seen as a status symbol. With increasing wealth from oil revenues, the demand for curved daggers with handles carved from rhino horn has risen over the years. Yemen and Oman remain important destinations for illegally obtained rhino horn.

In addition to external demands, growing poverty in many African countries fuelled a vigorous trade in illegal wildlife products, particularly rhino horn and ivory. Newly inde-

pendent African governments found themselves with growing human populations, diminishing financial resources, and an urgent need to place social development at the top of a long list of priorities. As a consequence, wildlife departments found themselves increasingly short of funds. The combination of diminishing resources, poor political support, and corruption sent morale and effectiveness plummeting. So it was that during the 1970s and 1980s many rhinos were poached by the very people employed to protect them.

While most of the profit from the illegal trade in wildlife products ends up in the pockets of a few traders and middlemen, even the small amounts earned by poachers are incentive enough to risk fines, imprisonment or death. Poachers will even cross international borders in search of rhinos. Sudanese poachers were responsible for wiping out the CAR's rhinos in the 1970s; Somalis were heavily involved with rhino and elephant poaching in Kenya; and members of South Africa's military forces plundered the wildlife resources of Mozambique and Angola. In the mid-1980s, Zimbabwe launched military-style operations in an attempt to stem the cross-border activities of Zambian-based poachers in the Zambezi Valley.

Civil unrest and the free flow of weapons in Africa have also had a significant impact on conservation efforts. Rhino populations in Angola, CAR, Chad, the Democratic Republic of Congo, Mozambique, Namibia, Rwanda, Somalia, Sudan, and Uganda have all suffered from the consequences of war and civil unrest during the past 30 years. Almost 70 per cent of northern white rhino were killed during the 1960s and 1970s as poaching went unchecked amid civil wars.

As the wave of poaching spread south from the Horn of Africa, populations of black rhino were decimated in Kenya and Tanzania. Gathering momentum as it went, the wave reached Zambia in the 1970s and 1980s and finally Zimbabwe, Botswana, and Namibia in the 1980s and early-1990s.

WWF's Response to the Crisis

Since it was founded, WWF has contributed over CHF30 million to activities aimed at conserving African rhinos. These have included projects to protect rhinos in national parks and game reserves; capacity-building assistance to bolster government wildlife management authorities; support for community development projects in rhino areas; surveys of rhino populations; planning for rhino conservation; and the translocation and concentration of rhinos in sanctuaries and conservancies.¹ Over the years, substantial support has also been given to TRAFFIC – Trade Records Analysis on Flora and Fauna in Commerce – WWF and IUCN's wildlife trade monitoring arm, to investigate and combat the illegal trade in rhino horn, and to help strengthen and implement the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

The Early Years: 1961-1970

During the first decade of its existence, WWF donated over CHF700,000 to African rhino projects, largely in support of anti-poaching and management activities in national parks and game reserves.

WWF's first grant for rhino conservation – Project No. 6 – was made in January 1962 to combat poaching of northern white rhino in four reserves in the West Nile and Madi districts of north-west Uganda. At the time, West Nile Province was thought to harbour around 80 rhinos, 60 of which lived in the Ajai Rhino Sanctuary. Just three years earlier, the West Nile white rhino population had numbered 150 animals. With hindsight it is clear that this population was doomed since this border region was, and still is, particularly unstable. Surveys funded by WWF in the 1980s confirmed that northern white rhinos had become extinct in Uganda.

Other protected areas assisted without success during this period included Kidepo

¹ Conservancies are adjoining private properties established for the conservation and production of wildlife. Such areas are ring-fenced but all internal fences and barriers have been removed.

(Uganda), Meru (Kenya), and Garamba national parks. Garamba is WWF's longest running rhino project in Africa (see Box 2). The fact that rhinos still exist in this difficult-to-control border area attests not only to the commitment and support that WWF and other organizations (Frankfurt Zoological Society, IUCN—The World Conservation Union, the International Rhino Foundation, UNESCO) have provided over the years, but especially to the dedication of the park's staff and the *Institut congolais pour la conservation de la nature* (ICCN).

In the early 1960s, WWF funded the translocation of southern white rhinos from Umfolozi in South Africa to the Kyle and Matopos reserves in what is now Zimbabwe. Funds were also made available via the South African Nature Foundation (now WWF-South Africa) for the translocation of both black and white rhinos between reserves in South Africa. Although relatively modest, these early efforts certainly contributed to the remarkable recovery of the southern white rhino.

The 1970s and "Project Rhino"

Driven by the growing trade in rhino horn, the 1970s saw a tremendous upsurge in poaching. WWF spending was a little under CHF850,000 for the decade. About 50 per cent of this was devoted to assisting protected areas — largely in support of anti-poaching efforts in Kenya's Tsavo and Tanzania's Serengeti national parks. In Zimbabwe, WWF helped meet the costs of translocating threatened rhinos from the north of the country to Gonarezhou National Park in the south.

As the decade wore on, rhino poaching increased dramatically and it became clear to those working in Kenya that traditional methods of protecting rhinos within vast but difficult-to-control protected areas had become virtually impossible. Wildlife departments, hard hit by economic woes, and in some countries by high-level corruption, were overwhelmed not only by the scale of the problem but also by highly organized and well-armed poaching gangs. With hindsight, conservation organizations and African governments, with their limited budgets,

were largely powerless to deal with the strength of the socio-economic forces and the demand that was driving the illegal trade in rhino horn.

In 1977, the newly ratified CITES Convention attempted to address the continuing decline of the world's five rhino species by enacting a ban on international trade in all rhino products. Although the ban has had little demonstrable effect on the decline in rhino numbers, it has helped by drawing considerable attention to the issue.

By the end of the decade, WWF was funding continent-wide surveys and meetings of experts in an attempt to develop strategies to save the remaining rhinos. In 1979 WWF launched *Project Rhino*, its first fundraising campaign aimed specifically at rhino conservation. The appeal raised almost US\$1.3 million, enabling WWF to increase its commitment to rhino conservation worldwide.

The 1980s: Capture and Consolidation

With *Project Rhino* funds and more, the 1980s saw over 60 rhino-related projects implemented in Africa, while in-depth studies of the nature and extent of the international trade in rhino horn were carried out in the Middle East and Asia. Global funding for African rhinos by WWF rose to more than CHF13 million for projects initiated or completed during the decade.

A changing paradigm of rhino conservation was reflected in WWF's increasing commitment to private and government-run sanctuaries. The first successful rhino sanctuary in Kenya, a privately funded initiative on the Solio Ranch, served as a ground-breaking model for intensive rhino conservation. In 1982, WWF began assisting the Ol Ari Nyiro Sanctuary (Laikipia Ranch). This was followed in 1985 with funding for another privately-owned sanctuary, Ngare Sergoi (Lewa Downs Ranch). Three years later, WWF helped the Kenyan government create its first rhino sanctuary in Lake Nakuru National Park. From 1988, assistance was also provided for rhino conservation efforts in the Aberdare National Park. Thanks to the commitment of its wildlife service and private landowners, Kenya's private- and government-run rhino

Box 2

Garamba National Park

Garamba National Park (4,920km²) lies in the north-east of the Democratic Republic of Congo. Established in 1938, the park is an area of outstanding natural beauty, composed of a variety of habitats, including extensive perennial grasslands that shelter large concentrations of wildlife, including what is probably the last population of the northern race of the white rhinoceros in the wild. Because of its uniqueness, Garamba was designated a World Heritage Site in 1980.

Although WWF had provided some support to Garamba in the 1960s, it was not until 1984 that WWF joined forces with IUCN and the Frankfurt Zoological Society to set up a comprehensive park rehabilitation programme in collaboration with ICCN. At that time, only about 15 white rhinos remained in Garamba. Eight years later, the population was almost 30.

Unfortunately the majority of the project's assets were lost during the December 1996-May 1997 war. Increased poaching pressure, driven mainly by the demand for meat, resulted in a number of rhinos being killed. An aerial survey carried out in May 1998 confirmed the presence of at least 23, and probably 25, rhinos. In early August 1998, less than a year after WWF had begun to help rebuild, the security situation in the Democratic Republic of Congo deteriorated again. Although the future remains uncertain, WWF will continue to work with the park authorities to develop and implement practical strategies to help protect the northern white rhino under these difficult conditions.

Source: WWF-East Africa Regional Programme Office, Nairobi.

sanctuaries are today a valuable source of animals for reintroduction and population enhancement schemes.

Placing rhinos in sanctuaries, where funds and personnel are concentrated in relatively small areas, is proving to be a successful strategy, and one that might well turn the tide in the rhinos' recovery. Today around 48 per cent of Kenya's and 60 per cent of Zimbabwe's rhinos are held in managed sanctuaries and conservancies.

In addition to supporting sanctuaries, WWF continued to provide funding to protect free-ranging rhinos throughout the 1980s. Over CHF2.5 million went to support rhino conservation in Tanzania's Selous Game Reserve, Zambia's Luangwa Valley, and the Zambezi Valley in Zimbabwe. By this time, the poaching wave was reaching its peak in Southern Africa and, as had happened a decade earlier in east Africa, efforts to halt the slaughter were proving

unsuccessful. By the mid-1980s, with most of their own rhinos already killed, Zambian poachers turned their attention to neighbouring Zimbabwe. Between 1982 and 1992 the number of black rhinos in Zimbabwe dropped by an estimated 80 per cent, from 2,010 to 411. By the end of 1993, Zimbabwe's black rhino population had fallen to just 280 animals.

Up until the mid-1980s, much of WWF's effort was aimed at trying to save free-ranging rhino populations in relatively large protected areas – a strategy that proved largely ineffective in the final analysis. In the wave of poaching that swept down the continent, most of the black rhinos that once roamed the vast, unfenced wildlife areas of the Tsavo and Selous ecosystems, the Luangwa and Zambezi Valleys, and Botswana's Chobe/Moremi ecosystem were lost. It is clear that even WWF's attempts to support wildlife departments were insufficient and too thinly spread to halt the decline.

Changes in approach were obviously needed and from 1986, WWF and other donors helped Zimbabwe and Kenya to translocate the majority of their remaining black rhinos from vulnerable areas to well-protected state and private lands. The severe losses of the 1980s gave rise to a period of innovation in rhino management techniques.

The 1990s: Cautious Optimism

During the 1990s, WWF has played an important role in many pioneering approaches to rhino conservation, including the development of radio-telemetry systems for monitoring, further dehorning of rhinos as a deterrent to poaching, and the re-establishment of locally extinct rhino populations. It has also redirected its focus to the two most important African rhino range states — South Africa and Namibia.

Over 80 per cent of Africa's black and white rhinos live in South Africa. This, together with the country's clear commitment to rhino conservation, has justified WWF's increased investment there since 1993. Equipment donated by WWF allows 24-hour surveillance of the critical rhino populations of Umfolozi and Hluhluwe game reserves, the country's two main source populations for the stocking of rhinos on private properties and state lands. WWF has also supported a thorough survey of all southern white rhinos currently on private properties in South Africa, now accounting for 20 per cent of the world's free-ranging population.

Throughout the 1990s, WWF also provided substantial support to Namibia's rhino conservation efforts. To secure what is the largest single population of black rhinos remaining on the continent, equipment and funds for ground and air surveillance have been made available to the Ministry of Environment and Tourism for work in Etosha National Park. Efforts have also focused on protecting the "desert-adapted" subspecies, *Diceros bicornis bicornis*, the majority of which survive only in Namibia.

WWF believes that rhino conservation and management in Namibia has also benefited from ongoing efforts to ensure that the rural communities that share their land with these animals obtain direct and sustainable *benefits* from wildlife-based tourism.

WWF continues its long-standing support to the conservation and management of rhinos in other countries, particularly Kenya, Zimbabwe, and Tanzania. In Kenya, WWF has helped the Kenya Wildlife Service develop and implement its black rhino meta-population² management strategy. Technical support and equipment provided by WWF has contributed to the establishment and running of three privately run conservancies in Zimbabwe. In Tanzania, WWF has facilitated the recruitment of a national rhino coordinator and funded a detailed survey of the remaining black rhinos in Selous Game Reserve.

Throughout the decade, TRAFFIC's investigations of trade in African rhino horn focused on local market surveys in consuming countries, as well as facilitating workshops for traditional medicinal practitioners, particularly in East Asia. In Africa, TRAFFIC's East and Southern African programme has also tackled illegal trade in wildlife products, including rhino horn. This has included technical support to several governments in the region to establish specialized wildlife intelligence units, and a new project on rhino stock control.

In 1994, WWF set up an African Rhino Conservation Fund to receive donations with which to provide rapid support for strategic, catalytic or emergency actions. This has proven an efficient means for providing funds to areas where they are needed most. Since 1990, WWF has spent in excess of CHF16 million on projects to conserve Africa's rhinos.

While the fate of rhinos in countries such as Cameroon, the Democratic Republic of Congo, Mozambique, and Tanzania hangs in the balance, the mid- to late-1990s have signalled a changing tide for Africa's rhinos as poaching has notably declined. Overall, rhinos have responded

² A species whose range is composed of more-or-less geographically isolated patches, interconnected through patterns of gene flow, extinction and recolonization is said to form a meta-population, or population of subpopulations.

favourably to consolidation in carefully managed and intensively protected areas, with some populations stabilizing and others increasing. Today, 98 per cent of Africa's remaining 11,000 rhinos occur in Kenya, Namibia, South Africa, and Zimbabwe. These four countries, together with Garamba National Park, have been the focus of significant WWF support over the years.

What Have We Learned?

There are promising signs that rhino numbers are slowly increasing after decades of decline. And while some interpret this trend as proof that international and internal trade bans are finally working, others believe it is more likely the result of new approaches to rhino conservation, improved intelligence, and the consolidation of the majority of Africa's rhinos within sanctuaries, conservancies, and other intensively protected areas. Whatever the reasons, there is no room for complacency.

To understand the factors contributing to successes and failures in rhino conservation, WWF and the World Conservation Society/New York Zoological Society have carried out an in-depth study entitled *Different Approaches to Rhino Conservation in Asia and Africa: A Cost/Benefit Analysis*. The scale and scope of the study are unprecedented and a large number of different variables were investigated. While the analysis reveals the complexities of rhino conservation, it also identifies those factors that have been the major determinants of the successes to date.

First and foremost, rhino conservation is an expensive business, both in terms of capital and human resources. It is estimated that around US\$1,400 per square kilometre per year are needed to detect and deter poaching incursions and to provide adequate safety for rhinos. In terms of manpower, a minimum of one ranger per 20km² is considered optimal. For huge areas like Tsavo National Park (21,283km²) or the Selous Game Reserve (43,626km²), millions of dollars would be required each year and thousands of law enforcement staff. Clearly this goes well beyond the capacity of most governments and conservation agencies.

A second success factor has been the consolidation of rhinos into relatively small areas or areas specifically dedicated to their protection. In some cases this has been combined with high-security fencing, high levels of surveillance and monitoring. While bigger protected areas are clearly better from a biological standpoint, smaller ones are easier to staff, equip, and manage.

A further contributing factor to successful rhino conservation in Africa and Asia has been the active involvement and participation of local communities. Where people have benefited directly from rhino conservation, through ecotourism ventures or employment in rhino monitoring and protection, the rhinos have also benefited significantly.

Ironically, translocated rhinos have fared better than those in naturally occurring populations. Although this is due in large part to the additional effort and expense put into their care and well-being once they have been moved, it is also related to the characteristics of their new homes. For example, rhinos have benefited from being in fenced areas, in areas away from international borders, and in areas free from civil war or unrest nearby.

Although the future of rhinos is by no means guaranteed, the results of this study have given WWF a clear sense of direction for the coming years.

Challenges for the Future

Painful lessons have been learned from the catastrophic loss of Africa's rhinos during this century. These are applicable not only to rhinos, but also to other endangered species. Perhaps the hardest lesson of all is the realization that money alone is not enough to save cherished species; poverty, corruption, ignorance, and war have been strong driving forces behind the rhinos' decline. Overcoming such constraints are largely beyond the remit of any conservation organization. And while non-governmental organizations such as WWF can assist, social and economic issues must be tackled first and foremost at local, national, and global levels of governance.

In some of the poorest nations on earth, even "shoot-to-kill" policies have not deterred people from risking their lives to poach rhinos and, in many cases, from being killed in doing so. Despite a tightening of controls, increased chances of prosecution, higher penalties, and improved understanding of the plight of rhinos, there is a continuing demand for horn for traditional Chinese medicine and dagger handles. Since poaching is generally an act of desperation driven by poverty and demand, it is worthwhile recalling that, in spite of the apparent easing of poaching pressure, the underlying causes of the rhinos' decline have not disappeared. And while investment in sanctuaries, surveillance, and better relations with neighbouring communities is a promising recipe for successful rhino conservation, it may still be insufficient should poaching begin again in earnest.

Although it is impossible to formulate a general strategy for rhino conservation that will suit all populations, in all countries, and under all circumstances, it is important for WWF to build on the lessons learned to date and to set challenging goals for the future. WWF has done just that by setting long-term population targets for all six rhino subspecies in Africa. In the rhino populations where WWF is actively involved, efforts will focus on maintaining demographic and genetic viability, and population growth rates of at least 5 per cent per annum. In some circumstances this will involve meta-population conservation strategies that require active management and movement of rhinos within and between perhaps smaller, but more secure, sub-populations. In order to assess population performance there will also be a need to establish and maintain effective biological and security monitoring in all target populations.

To achieve this and to magnify its own actions to try and ensure rapid population growth in an economically, socially, and politically sustainable manner, WWF will work with a mixture of partners, including governments, private landowners, and empowered local communities. All of these must find ways of meeting the costs of rhino conservation. Although unsustainable illegal use is clearly at

the crux of rhino losses, legal, sustainable use may have a role to play in creating the necessary incentives for the rhinos' conservation. As a form of non-consumptive use, ecotourism is relatively uncontroversial and under the right circumstances can provide major benefits to both local communities and rhinos.

More radical options voiced by some include both the trophy hunting of post-reproductive males and the "harvesting" of rhino horn to supply a limited, legal trade. From 1968 to 1996, the hunting of white rhinos in South Africa generated some US\$24 million in direct earnings. The sale of live black and white rhinos is also practised within South Africa, where individual animals fetch up to US\$30,000 at authorized game auctions.

Since rhino horn can be safely removed and grows back again in time, it has been argued that South Africa alone has the potential to produce enough legal rhino horn to meet the demand for traditional Chinese medicine and by doing so eliminate illegal trade. Like trophy hunting, the benefits of such a strategy remain to be demonstrated before they will obtain support from the majority of conservationists or from wildlife trade-regulating bodies such as CITES.

In addition to WWF's actions in the field, it is clearly recognized that another, perhaps equally important, role must be fulfilled at the global level. Demand for rhino horn continues and there is still much to be done in East Asia and the Middle East. While working to reduce and eventually eliminate the illegal trade, the TRAFFIC network has gained important insights into its dynamics. WWF intends to use TRAFFIC's unique skills and to work more closely with consumers, medical practitioners and dagger-handle dealers, to understand their needs and to educate them about the importance of conserving viable populations of wild rhinos.

In the hope of building international commitment to Africa's rhinos, while raising awareness of the substantial investment needed to ensure their conservation, WWF also recognizes the importance of providing accurate and up-to-date information on rhino conservation efforts across the continent.

In conclusion, there are real grounds for

hope for the future of African rhinos. Conservation strategies will, however, have to pay far more attention to the likely trade-offs that will come about by integrating realistic conservation goals into the social and economic development agendas of modern Africa. In the words of WWF's Raoul du Toit, "*Maximum protection of rhinos is attained when, in addition to law enforcement at the national and international*

levels, they are supported within a social and economic environment in which they are seen locally as assets".

The challenges ahead are considerable, but building on lessons learned and the substantial successes recorded over the past few years, WWF will continue to work towards a securer future for Africa's rhinos.

Table 1: Distribution and Preliminary Numbers of Rhinos in Africa

(Source: IUCN/SSC/African Rhino Specialist Group, 1998)

Country	White rhinoceros (<i>Ceratotherium simum</i>) subspecies			Black rhinoceros (<i>Diceros bicornis</i>) subspecies				
	<i>C.s.simum</i>	<i>C.s.cottoni</i>	Total White	<i>D.b.bicornis</i>	<i>D.b.longipes</i>	<i>D.b.michaeli</i>	<i>D.b.minor</i>	Total Black
Botswana	23		23					
Cameroon					10			10
Chad					0			0
D R Congo		25	25					
Ethiopia						0		0
Côte d'Ivoire	4		4					
Kenya	137		137			424		424
Malawi							3	3
Mozambique							13	13
Namibia	141		141	707				707
Rwanda						4		4
South Africa	7913		7913	34		33	976	1043
Swaziland	50		50				10	10
Tanzania						24	22	46
Zambia	6		6					
Zimbabwe	167		167				339	339
Totals	8441	25	8466	741	10	485	1363	2599

WWF National Organizations

WWF-AUSTRALIA
GPO Box 528, Sydney, NSW 2001
Tel: + 61 2 9299 6366

WWF-AUSTRIA
Postfach 1, 1162 Vienna
Tel: + 43 1 488 170

WWF-BELGIUM
608 Chaussée de Waterloo, 1050 Brussels
Tel: + 32 2 340 09 99

WWF-BRAZIL
SHIS EQ QL 6/8, Conjunto E-2 andar
71620-430 Brasilia
Tel: + 55 61 248 2899

WWF-CANADA
90 Eglinton Avenue East, Suite 504
Toronto, Ontario M4P 2Z7
Tel: + 1 416 489 8800

WWF-DENMARK
Ryesgade 3 F, 2200 Copenhagen N
Tel: + 45 35 36 36 35

WWF-FINLAND
Lintulahdenkatu 10, 00500 Helsinki 50
Tel: + 358 9 774 0100

WWF-FRANCE
151 Boulevard de la Reine, 78000 Versailles
Tel: + 33 1 39 24 24 24

WWF-GERMANY
Hedderichstrasse 110, 60591 Frankfurt a/M
Tel: + 49 69 60 50 030

WWF-GREECE
26 Filellinon Street, 105 58 Athens
Tel: + 30 1 331 4893

WWF-HONG KONG
GPO Box 12721, Hong Kong
Tel: + 852 2526 1011

WWF-INDIA
PO Box 3058, New Delhi 110 003
Tel: + 91 11 469 3744

WWF-INDONESIA
PO Box 7928 JKSKM, Jakarta Selatan 12079
Tel: +62 21 720 3095

WWF-ITALY
Via Garigliano 57, 00198 Rome
Tel: + 39 6 844 971

WWF-JAPAN
Nihonseimei Akabanebashi Building
3-1-14 Shiba Minato-ku, Tokyo 105
Tel: + 81 3 3769 1711

WWF-MALAYSIA
Locked Bag N 911, Jln Sultan PO
46990 Petaling Jaya
Tel: + 60 3 703 3772

WWF-NETHERLANDS
Postbus 7
3700 AA Zeist
Tel: + 31 3069 37 333

WWF-NEW ZEALAND
PO Box 6237, Wellington
Tel: + 64 4 499 2930

WWF-NORWAY
Postboks 6784, St Olavs plass
0130 Oslo
Tel: + 47 22 03 65 00

WWF-PAKISTAN
PO Box 5180, Ferozepur Road
Lahore 54600
Tel: + 92 42 586 2359

WWF-PHILIPPINES
N23-A Maalindog Street, UP Village
Diliman, Quezon City 1101
Tel: + 632 921 2905

WWF-SOUTH AFRICA
PO Box 456, Stellenbosch 7599
Tel: + 27 21 887 2801

WWF-SPAIN
ADENA, Santa Engracia 6
28010 Madrid
Tel: + 34 91 308 23 09

WWF-SWEDEN
Ulriksdals Slott, 170 81 Solna
Tel: + 46 8 624 74 00

WWF-SWITZERLAND
Postfach
8010 Zürich
Tel: + 41 1 297 21 21

WWF-UNITED KINGDOM
Panda House, Weyside Park, Godalming
Surrey GU7 1XR
Tel: + 44 1483 426 444

WWF-UNITED STATES
1250 24th Street NW
Washington, DC 20037-1175
Tel: + 1 202 293 4800

WWF ASSOCIATES

ARGENTINA. FUNDACIÓN VIDA SILVESTRE
Defensa 245/51, 6 Piso, 1065 Capital Federal
Buenos Aires
Tel: + 54 1 331 4864

ECUADOR. FUNDACIÓN NATURA
Casilla 17-01-253, Quito
Tel: + 593 2 447 922

NIGERIA. NIGERIAN CONSERVATION FOUNDATION
PO Box 74638, Victoria Island, Lagos
Tel: + 234 1 264 2497

TURKEY. DHKD
PK 971, Sirkeci 34436
Istanbul
Tel: + 90 212 528 20 30

VENEZUELA. FUDENA
Apartado Postal 70376
Caracas 1071-A
Tel: + 58 2 238 2930

WWF aims to conserve nature and ecological processes by:

- preserving genetic, species, and ecosystem diversity
- ensuring that the use of renewable natural resources is sustainable both now and in the longer term
- promoting actions to reduce pollution and the wasteful exploitation and consumption of resources and energy.



WWF—World Wide Fund For Nature is the world's largest and most experienced independent conservation organization, with 4.7 million supporters and a global network active in 96 countries. WWF is known as World Wildlife Fund in Canada and the United States of America.



WWF INTERNATIONAL, AVENUE DU MONT-BLANC, CH-1196 GLAND, SWITZERLAND
Tel: + 41 22 364 91 11 Fax: + 41 22 364 58 29